### University Calendar

#### Fall Semester
- Registration begins: August 29, 1988; August 23, 1989; August 21, 1990
- Classes begin: August 30, 1988; September 4, 1989; August 24, 1990
- University holiday: October 8, 1988; October 21, 1989; November 25, 1990
- Thanksgiving recess begins: November 28, 1988; November 28, 1989; December 1, 1990
- University holidays: December 13-19, 1988; December 22-28, 1989; December 11-17, 1990
- Final examinations: December 18, 1988; December 18, 1989; December 16, 1990
- University holiday: December 26-27, 1988; December 28-29, 1989; December 27-29, 1990

#### Spring Semester
- University holiday: January 1, 1989; January 1, 1989; January 1, 1990
- Registration begins: January 2, 1989; January 9, 1989; January 10, 1990
- Classes begin: January 10, 1989; January 9, 1989; January 10, 1990
- Foundation Day: February 25, 1989; February 25, 1989; February 25, 1990
- Spring vacation begins: March 17, 1989; March 17, 1989; March 17, 1990
- Saturday Classes only meet: March 18, 1989; March 16, 1989; March 17, 1990
- Classes end: March 27, 1989; March 25, 1989; March 25, 1990
- Examination week: April 28, 1989; April 27, 1989; April 30-May 4, 1990
- Commencement: May 5, 1989; May 1, 1989; May 1, 1990
- University holiday: May 29, 1989; May 28, 1989; May 28, 1990

#### Summer Session
- Registration: June 12, 1989; June 11, 1990
- Classes begin: June 13, 1989; June 12, 1990
- Classes end: August 4, 1989; August 3, 1990
- Commencement: August 7-25, 1989; August 6-24, 1990
- Independent Study Unit for law and graduate students
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What Iowa Is All About

MacBride Hall
The University of Iowa is a major national research university with a solid liberal arts foundation. Responsible for many historic firsts, it too was international in its quest for wealth of achievements in the arts, sciences, and humanities.

Founded in 1847 as Iowa’s first public institution of higher education, the University has become a major intellectual and cultural center for the state of Iowa, bringing together undergraduates, graduate, and professional students with distinguished teachers and scholars in a close-knit, intellectual community.

The University was the first public university in the nation to admit men and women of all races and both sexes. In 1881, the first U.S. institution of higher education to accept creative work in theater, writing, music, and art as thesis for advanced degrees. It established the first law school west of the Mississippi, broadens 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 since the 1950’s. Its research in hydraulics engineering is world renowned, as are its innovations in biomedical engineering, agricultural medicine, and pharmacology education. The University is taking leadership in inter-scientific cooperation, recognizing a stagnating emphasis on interdisciplinary research and learning, its aim is to be counted among the top public universities in the country within the next ten years.

Liberal Arts: Education for Life at Iowa

Liberal arts education is the core of learning at the University of Iowa. The College of Liberal Arts has the largest enrollment among the University’s ten colleges and is the entering point for most students, including those who later transfer and specialize in the College’s professional colleges. A program of study in the liberal arts is considered “education for life” at the University of Iowa.

Professional education is provided through the colleges of agriculture, dentistry, engineering, law, medicine, nursing, and pharmacy.

With its strong undergraduate program, the University attracts an appropriate balance between undergraduate and graduate education. The baccalaureate programs provide a solid base for the employment of high quality masters’ and doctoral programs in many fields. The Graduate College provides leadership in development, revision, and oversight of graduate programs.

Award-Winning Teaching and Scholarship

The University of Iowa has a diverse and distinguished faculty who have been recognized for their outstanding accomplishments as teachers and scholars with awards including Guggenheim fellowships, senior fellowships from the National Endowment for the Humanities, and Fulbright scholarships for teaching and study abroad. A major recruitment program is under way to increase the number of faculty from minority backgrounds, as the University endeavors to enrich its programs and provide greater opportunities for scholarly advancement to minorities and women.

Faculty bring outstanding backgrounds in research and education to their teaching assignments, enhancing learning for their students. The faculty have helped to produce well-rounded students who have become Rhodes Scholars, Pulitzer prize winners, and leaders in business, the arts, the sciences, and education.

The University of Iowa doesn’t cater to all segments of society. While it serves students who are high achievers, it is not a “cottage” institution. Approximately 50,000 students take part in University learning programs. Nearly 70 percent come from Iowa. 18 percent from adjoining states, and 10 percent from the remaining states. International students from 50 foreign countries make up 5.5 percent of the University’s enrollment.

Iowa is attempting to greatly increase its enrollment of minorities—particularly Blacks, Latins, and Native Americans.

A member of the select Association of American Universities, the University of Iowa organizes its institutions for recognition in excellence for research. The University of Iowa maintains a balance between scholarly research and teaching that is supported by Iowa’s many centres and institutes and the University Libraries, one of the largest research library systems in the country. The Main Library, the University Library, and 21 departmental libraries contain more than 2.8 million volumes. An automated cataloging system is being implemented in the Law, Health sciences, and Main libraries.

Wealth of Cultural Programs and Services

The University presents a wealth of cultural programs for the Iowa City community and surrounding areas through the Iowa Center for the Arts. The center provides a stimulus and setting for professional—rather than amateur—drama, dance, and musical performances by students and faculty as well as visiting artists from around the world. The University’s Museum of Art displays its outstanding permanent art collections, works by faculty and students, and traveling exhibits yearly around. And linking with the performing and visual arts, the world-renowned Writers’ Workshop and International Writing Program make the University and Iowa City one of the nation’s most significant arts communities.

As the nation’s largest university-owned teaching hospital, The University of Iowa Hospital and Clinics serves more than 400,000 persons from Iowa and other states every year. Specialized care is provided by more than 1,400 physicians and dentists, 1,100 registered nurses, and 2,000 professional and support staff.

In athletics, the Hawkeyes enjoy national recognition and enjoy the loyalty as joggers in football, basketball, and gymnastics. A member of the Big Ten athletic conference, Iowa offers ten intercollegiate sports for women and ten for men.

The University is located on 950 acres of rolling land along the Iowa River. More than 100 major structures dot the campus, most within walking distance from each other and all fully accessible to those with disabilities.

Owning the river is Old Capitol, the central landmark of the campus. Built in Greek revival style during the early 1840’s, Old Capot served as the first capitol building for Iowa’s territorial government from 1842 until 1846, and then housed the legislature and government offices for the state of Iowa until 1857, when state government moved to Des Moines. Various University offices and departments were brought together in the building until it was restored as a National Historic Landmark and opened to the public in 1970.

A major attractive and educational facility at the University is Iowa Hall, a 6,000 square foot facility in the Museum of Natural History in MacBride Hall that provides life-like exhibits of objects 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 teaching, research, and facilities at nearby Outside, at the MacBride Nature Recreation Area north of Iowa City, and at the Lakeside Laboratory on Lake Okoboji in northwest Iowa.

Iowa City

A forward-looking community provides a splendid working environment for The University of Iowa. The relationship between Iowa City and the University is friendly, cooperative, and supportive. Faculty and staff share the responsibilities of community government and service with business, professional, and working people outside the University. Together they create an environment for growth in learning and business, in ideals and social well-being.

A community of 50,000 people, Iowa City lies within the radius of Chicago, Minneapolis, and St. Louis. The city is accessible in an hour by car to Cedar Rapids-Iowa City airport by major bus lines, and by car from major highways.
ACADEMIC PROGRAMS

The University of Iowa is one of Iowa's three state universities. It is governed by the State Board of Regents.

The College of Liberal Arts is the core of the University, with seven 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 five colleges are located on the Iowa City campus.

The University faculty includes some 5,200 full-time members, many of whom have established national and international reputations. Their effectiveness as teachers is enhanced by their involvement in scholarly and scientific research. Some faculty members from the University's professional colleges also teach undergraduate classes in the College of Liberal Arts, including a number of introductory courses.

The University's undergraduate enrollment is about evenly divided between men and women students. Approximately three out of four undergraduates are Iowa residents. The rest are students from all other 40 states and more than 50 foreign countries. About 75 percent of the University's entering freshmen had an average or above in high school. Approximately 80 percent marked in the upper half of their high school class and about 24 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, either on campus or off. Many students hold various jobs as they study. Most undergraduate students are awarded one or more scholarships. Most undergraduate students are awarded academic, music, and athletic scholarships, with a small number of grants awarded solely for scholarly achievement.

Reflecting a growing trend toward lifelong learning, the University in recent years has expanded educational opportunities substantially, both on- and off-campus, for individuals who cannot enroll as regular full-time students. These learning opportunities include evening classes, conferences, workshops, and graduate education programs for professionals. Saturday and evening classes offered on campus, and off-campus courses taught off campus. In 1967, the University, in cooperation with Illinois and Iowa's two state universities, created the Bachelor of Liberal Studies (BLS) degree program designed for adults who want to earn a college degree but are unable to enroll in traditional on-campus study.

Degrees Offered

The University offers the following degrees. The major fields are listed in the various college sections of 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 Education, Bachelor of Science in Pharmacy, Bachelor of Science in Nursing, Doctor of Dental Surgery, Juris Doctor, Master of Business Administration, Master of Medicine, Master of Arts, Master of Science, Master of Nursing Administration, Master of Public Health, Master of Fine Arts, Master of Social Work, Master of Arts in Teaching, Education Specialist, Doctor of Musical Arts, Doctor of Pharmacy, and Doctor of Philosophy.

Accreditation and Associations

The University of Iowa has been accredited by the North Central Association of Colleges and Secondary Schools since the association's organization in 1892. The University is a member of the Association of American Universities. It is associated with Northwestern, Indiana, Purdue, Ohio State, and Michigan State universities and the universities of Illinois, Minnesota, Wisconsin, and Michigan in the Western (Big Ten) Conference. It is associated with these universities and The University of Chicago in the Conference for Institutional Cooperation (CIC).

Each college and school of the University is members of accrediting associations in their respective fields, as follows.

Colleges

Business Administration—American Association of Collegiate Schools of Business

Dentistry—American Dental Association, Council on Dental Education

Education—National Council for Accreditation of Teacher Education

Law—American Bar Association; Association of American Law Schools

Medicine—Liaison Committee on Medical Education, representing the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC)

Nursing—National League for Nursing, Iowa Board of Nursing

Pharmacy—American Council on Pharmaceutical Education

Schools

Journalism and Mass Communication—American Council on Education in Journalism and Mass Communications

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, Chemical, Civil, Electrical, Industrial, and Mechanical Engineering—Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Chemistry—American Chemical Society Dental Hygiene—American Dental Association Commission on Dental Accreditation Dietetics—American Dietetic Association Economics—American Economic Association, Council for Professional Development

Hospital and Health Administration—Commission on Accreditation in Health Services Administration Medical Technology—Committee on Allied Health Professions and Accreditation of the American Medical Association; also, the National Accrediting Agency for Clinical Laboratory Sciences Nuclear Medicine Technology—Committee on Allied Health Professions and Accreditation of the Council on Medical Education of the American Medical Association

Physical Therapy—American Physical Therapy Association Physician Assistant Program—Committee on Allied Health Professions and Accreditation of the American Medical Association Psychology—American Psychological Association Speech Pathology and Audiology—Educational Standards Board of the American Speech-Language-Hearing Association

Academic Sessions

The University's academic year consists of two semesters of approximately 15 weeks each. The University also conducts an eight-week summer session well, following the 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 by awarding degrees "with distinction," "with high distinction," and...
Honorary and Professional Societies
Phi Beta Kappa, Sigma Xi, Mortar Board, and Omicron Delta Kappa are among 64 national honorary and professional societies that have active chapters on The University of Iowa campus.

University Marking System

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<th>Grade (definition)</th>
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<td>A +</td>
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<td>B +</td>
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*H = honors
*I = incomplete
*N = nonsatisfactory
*O = on grade
*P = passing
*W = withdraw
*S = satisfactory
*U = unsatisfactory (Graduate College only)
*W = withdrawn

Not used in computing grade-point averages

Undergraduate Scholar Assistant Program

For students who rank in the top one percent at the University, the Undergraduate Scholar Assistant Program provides undergraduate work with faculty members from all areas of the University on projects that range from art history to mathematics.

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

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

College of Business Administration

6A Accounting
6B Business Administration
6E Economics
6F Finance
6K Management Sciences

College of Liberal Arts

0 Nondepartmental courses

BGI Bachelor of General Studies courses
BLS Bachelor of Liberal Studies courses
L Lakeside Laboratory
JAL Fundamentals
IIB Electives of Art
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**ADMISSIONS**

**High School Preparation**

Appropriate academic preparation for college attendance is very important. University course work is offered with the assumption that students have the necessary background and proficiency to perform successfully.

Students entering the University in 1988 or 1989 are strongly urged to take high school course work according to the list that follows. For students entering Fall 1989 and thereafter, this course work will be required. Certain requirements vary for students enrolling in the College of Engineering (second to last column).

Four years of English/language arts, with emphasis on writing, speaking, and reading as well as understanding and appreciation of 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—trigonometry, analysis, or calculus—is recommended for students who plan to pursue a science major.
Students enrolling in engineering must meet the above mathematics requirements, including completion of a course in higher mathematics. At least three years (but preferably four) of social studies coursework is suggested; study of American history, world history, economics, government, psychology, and sociology. Students enrolling in engineering must complete two years of social studies.

At least three years of science, including full-year courses from two of these areas: biology, chemistry, and physics; the third course can be from any area, including others not listed, such as general science, physical science, geology, agriculture. For students enrolling in engineering, the three years of science must include one year of chemistry and one year of physics. Engineering also recommends, but does not require, one year of 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, Calvin Hall, The University of Iowa, Iowa City, Iowa 52242, to request application forms and application instructions for both admissions and University housing. All applicants must submit transcripts of all official high school transcripts, test scores, and other required supporting material to the Office of Admissions. For specific admission standards of the respective colleges, please refer to the appropriate college sections of the Catalog.

ACT and SAT Scores
All entering freshmen and undergraduate transfer students 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 in a criterion for admission, for academic advising, and for course placement.

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 international students is $35. Graduate College applicants must pay the fee unless they have earned a degree from The University of Iowa. Application fees are not refundable except to Iowa residents who are denied admission.

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

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

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

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

College of Education—May 15 for summer session, May 15 for fall semester, November 15 for spring semester; early applications are advised since enrollment may reach capacity far in advance of the beginning of classes.

Graduate College—General: Graduate College deadlines: May 1 for summer session, July 15 for fall semester, and December 1 for spring semester. Individual departments and programs may have earlier deadlines, which are indicated in their materials. All departmental materials should be reviewed carefully for information about early deadlines. To be considered for graduate awards, students must apply by February 1 for the fall semester.

College of Law—March 1, summer or fall semester.

College of Medicine—December 1 for 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 spring semester, May 1 for fall semester, December 1 for spring semester.

College of Pharmacy—March 1, fall semester only.

Dental Hygiene Program—March 1, fall semester only.

Pharm.D. Program—February 1, fall semester only.

Physician Assistant Program—January 15, summer session only.

Teacher Education Program—May 15 preceding the academic year in which the student plans to enroll in professional education courses.

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

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

International Students
International students should begin the process of applying for admission at least 12 months prior to enrollment. Applicants must satisfy all application procedures and submit their complete application file to the Office of Admissions by the following dates:

Graduate College—Students applying to The University of Iowa for financial assistance (scholarships, fellowships, assistantships) must apply by January 1 for spring semester or fall semester; October 1 for spring semester.

Students applying to the Graduate College who will not require University of Iowa financial support: March 1 for spring semester, April 15 for fall semester, October 1 for spring semester.

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

College of Business Administration—March 1 for summer session (June), March 1 for fall semester (August), September 1 for spring semester (January).

College of Engineering—March 1 for summer session (June), March 1 for fall semester (August), September 1 for spring semester (January).

College of Liberal Arts—March 1 for summer session (June), April 15 for fall
Graduate students should consult their departmental academic advisors to determine whether or not they should enroll in course work in English as a Foreign Language.

Medical Information

The Student Health Service provides health care for the needs of registered students. A medical history form, including all information about immunizations, must be completed by the student. Proof of immunity to measles is a prerequisite to registration.

Student Health Service. Students are sent to the medical history form after they are admitted to the University. Completed medical history forms should be returned to the Student Health Service. Should a registering student have any health problem, it is recommended that a report from the attending physician be sent to the Student Health Service so that continuing care can be provided.

Campus Visits

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

Campus visits may include a visit with an admissions counselor, a group information session, a campus tour, and an appointment with a faculty member or academic advisor in a particular field.

Admissions is provided to questions about academic programs, admissions requirements, physical plant, campus life, housing, and the many student services available at the University. Students also can explore UI museums, libraries, and downtown Iowa City.

Campus visits start at the John G. Brownlow Visitor Information Center, located at 230 North Clinton. The center is open from 8:30 a.m. to 5:30 p.m. Monday through Friday and from 9 a.m. to noon on Saturdays.

Orientation Services

With the aid of a representative student, faculty, and staff personnel, Orientation Services designs and conducts a wide variety of student programs to help new freshmen, transfer students, and international students with their transition to University life.

Once admitted to the University, students are expected to attend an orientation/registration program before they begin classes. During orientation, new students learn about academic policies and procedures, take placement tests, tour the campus, meet with their academic advisors, complete their first registration, and become acquainted with the University's facilities, staff, and other students. Parents are encouraged to attend the special parent orientation session scheduled concurrently with the student programs.

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

Students admitted for the summer session attend an orientation program the Sunday before classes begin in June.

Community College Affairs

The Office of Community College Affairs (OCCA) provides a variety of services for students transferring from community colleges. OCCA is encouraged to contact the Office of the Registrar concerning University policies and procedures, the campus environment, and transfer policies.

Programs are conducted at The University of Iowa and on community college campuses at the request of the particular institution. In addition, OCCA develops and distributes several publications useful to transfer students.

OCCA also coordinates a computerized system of information regarding course articulation agreements. This system contains lists of community college courses that have been approved by academic departments as meeting the requirements of various baccalaureate majors.

Records

All academic records are maintained by the Office of the Registrar and are released without permission of the student.

Regents Exchange Program

University of Iowa students may take courses at either of the other two Regent universities for a fee arranged in advance by the Office of the Registrar and the student's academic department. Credit, which is a factor in the student's academic progress, is not awarded unless the student's academic department approves the transfer of credit.
TUITION AND FEES
The University’s schedule of tuition and fees for full-time students, per semester, for the academic year 1986-87 is stated below. Extension courses are $115 per semester hour for graduate students and $82 per semester hour for undergraduate students. MBA extension courses are $141 per semester hour. Correspondence courses are $95 per semester hour. All fees are subject to change by action of the State Board of Regents.

Undergraduate
Resident 8953    Nonresident 2,744

Graduate
Resident 1,010    Nonresident 2,500

Dentistry
Resident 1,705    Nonresident 5,091

Law and Doctor of Pharmacy
Resident 1,100    Nonresident 3,035

Medicine
Resident 2,688    Nonresident 6,770

General fees provide for the student’s use of the Iowa Memorial Union, libraries, laboratories, and gymnastics; tree admission to minor sports events and to student-faculty concerts; reduced rates for admission to University athletic events and theater productions, and to performances by visiting stage and concert artists; subscriptions to the student newspaper, The Daily Iowan, delivered to housing units; certain student hospital services; and other amenities and services as announced. Examinations and correspondence fees do not provide for the above listed benefits.

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

Payment of Student Accounts
A monthly bill including charges incurred for tuition, room, board, and other expenses in residence hall and fraternity houses; car registration and parking fees; library and parking fines; and other departmental charges is mailed to the address for which approval has been granted. Tuition and fees are billed three times each semester, once during the summer session. Tuition and fees adjustments occur on a monthly basis.

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

FINANCIAL AID
The University of Iowa has an excellent record in helping its students obtain scholarships, grants, loans, and other forms of financial assistance. Approximately 66 percent of Iowa students receive some form of aid. The Office of Student Financial Aid helps students sort through the many forms of aid available.

Application Procedure
In January, all newly admitted students receive instructions on how to complete the financial aid form (FAF). All students are encouraged to apply for aid. Many factors are taken into consideration in determining eligibility for aid, and help is available from counselors in the Office of Student Financial Aid. Students must be accepted for admission to be considered for financial aid at the University. To determine eligibility for need-based aid, students and parents must provide information about their financial situation. Students must submit either the Financial Aid Form (FAF) to the College Scholarship Service (CSS) or the Family Financial Aid Statement (FFAS) to American College Testing (ACT) as soon as possible, and should request that CSS or ACT send a copy of the need analysis to the UI Office of Student Financial Aid.

Filing the FAF or FFAS and submitting all other required documents to the UI Office of Student Financial Aid as soon as possible assures that applications will be considered for all need-based awards offered by the University. The FAF or FFAS may be returned from a high school or community college counselor. The FAF and FFAS are good for only one academic year, and students must apply for aid each year.

How Aid is Determined
Eligibility for need-based aid at The University of Iowa is determined by the same method of family financial analysis that is used by other colleges and universities throughout the country. The steps are as follows:

- The University determines the estimated family contribution for the academic year, which includes room and board, tuition, fees, books, and personal expenses.
- Through the College Scholarship Service (CSS) or American College Testing (ACT) standard methodology, a contribution from the student and his or her family is determined. This contribution is based on the family’s income and assets.
- Financial need is determined by subtracting the expected family contribution from the University’s estimated costs.
- Whenever possible, financial assistance is awarded toward meeting the financial need; however, due to the large number of applicants and limited funds available, it usually is not possible to offer enough assistance to meet the financial need in full.

Eligibility for Aid
Students are eligible for federal financial aid if they are U.S. citizens or eligible noncitizens and are enrolled at least half-time in a degree program, and if they demonstrate financial need as determined by the FAF or FFAS. In order to maintain or establish eligibility for financial aid at the University, students must comply with the following Reasonable Academic Progress (RAP) standards.

- Minimum Semester Hours: undergraduates must earn 20 semester hours per academic school year (fall, spring, and summer sessions combined); graduates must earn 12 semester hours per academic school year (fall, spring, and summer sessions combined).
- Minimum Grade-Point Average: undergraduates and graduates must maintain the minimum grade-point average requirement of the colleges in which they are enrolled.
- Duration of Eligibility: undergraduates must complete their bachelor’s degree within six academic school years (12 semesters) or 124 semester hours; graduate students, due to the length of time toward master’s degrees must complete their program of study within four calendar years (eight semesters) or 48 semester hours; graduates working toward combined master’s/doctoral degrees must complete their programs of study within eight academic school years (16 semesters) or 96 credit hours.

Financial aid is canceled for one or more of the following reasons:
- Exceeding one’s duration of eligibility, failing to meet the requirements for semester hours completion and/or grade-point average, and failing to meet the minimum requirements of a probationary term. Those who fail to meet the requirements and exceptions are outlined in detail in the publication Reasonable Academic Progress.
Scholarships

Presidential, Alumni Association, and Dean's Scholarships
The University annually awards $2,500 Presidential Scholarships to freshmen and up to $3,000 Dean's Scholarships to upperclassmen. These are freshman-year, renewable, nonrestrictive awards equal to the amount of tuition.
For further information, students should contact their high school guidance counselor or the Office of Admissions.

The Iowa Center for the Arts Scholarship
The Iowa Center for Arts Scholarships are awarded on the basis of exceptional talent in the performing arts. Each department (art, dance, theatre arts, and music) awards one scholarship to an entering freshman majoring in one of the areas. The scholarship is the highest award that these areas offer to entering freshmen. A maximum of four $2,500 freshman-year, nonrenewable awards are available.
Application deadlines for these programs fall in the fall of the preceding academic year, usually mid-December. Application information is available from the Office of Admissions or from high school guidance counselors.

The University of Iowa Scholarship for Minority Achievement
The University of Iowa Scholarships for Minority Achievement through the Opportunity at Iowa Program are $10,000 scholarships awarded on the basis of academic achievement and potential for students who are African American, Hispanic, American Indian, or Alaskan Native U.S. citizens. For further information students should contact the Office of Admissions.

National Merit Scholarships
The University sponsors a number of National Merit Scholarships for entering freshmen who have competed successfully in the National Merit Scholarship competition. Based on financial need, these awards range from $175 to $2,000 per year and are renewable for a maximum of four years.

Freshman Honor Scholarships
Entering freshmen who join the College of Liberal Arts Honors Program by September 1 of their freshmen year are recognized as Freshman Honor Scholars and receive a Freshman Honor Award. The award is not based on financial need and is applied directly toward tuition.

Transfer Honor Scholarships
Iowa community college students who transfer to the University with a 3.50 grade-point average or above automatically qualify for $1,000 Honor Scholarships. The scholarship is not based on financial need and is applied directly toward tuition.

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

University of Iowa Tuition Scholarships
The University of Iowa tuition scholarships are institutional funds awarded on the basis of financial need and academic achievement. Entering freshmen must have an ACT composite score of 24 or above or rank in the upper 10 percent of their high school graduating class in order to qualify. 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 resident tuition, and the award is applied directly toward tuition. The scholarships are for undergraduates without a bachelor's degree who are enrolled full time.

LaVerne Noyes Scholarships
LaVerne Noyes Scholarships are for U.S. citizens who are nonprofit, nonfederally funded, World War I or army or navy veterans. Awards are based on financial need and are available to undergraduates without a bachelor's degree. Students must file the FAFSA and obtain the LaVerne Noyes application from the Office of Financial Aid. Application deadline is July 1.

University of Iowa Farm Scholarships
Farm scholarships are for residents of Iowa who are entering freshmen. Students must rank in the upper 25 percent of their graduating class, be enrolled full time at Iowa, and live on an Iowa farm, operated by their parents. Applications are available from the Office of Student Financial Aid and must be submitted by April 1.

Grants

Pell Grants
Undergraduate students without a bachelor's degree may be eligible for a Pell Grant. The awards range from $200 to $2,000 per academic year, depending on funds left after other aid has been applied. Students must be enrolled at least half time in a degree program in order to be eligible. Students may use the FAFSA or FAFSA to apply for a Pell Grant, or they may obtain the Application for Federal Student Aid from any high school or from any college or university financial aid office.

Supplemental Educational Opportunity Grants (SEOG)
The SEOG program provides Federal Pell Aid to undergraduate students without a bachelor's degree who have exceptional financial need. The amount of the grant varies depending on financial need and federal funding. Recipients must be enrolled at least half time. The FAFSA determines eligibility for this program.

Educational Opportunity Program (EOP) Grants
Institutional funds are awarded to students accepted in the UI Special Support Services program who show exceptional financial need. Parental income and asset information must be reported. The FAFSA or FAFSA determines eligibility for this program.

Graduate Tuition Grants
Graduate Tuition Grants are institutional funds for graduate students in degree programs. The number of grants is limited. The amount of the grants is based on financial need and is applied directly toward tuition. The FAFSA determines eligibility for this program.

Loans

Perkins Loans
The Perkins Loan is a long-term federal loan based on financial need. The maximum award varies depending on parental income and parental funding. Students must be enrolled at least half time in a degree program. Repayment, at 5 percent interest, begins six months after recipients cease to be at least half-time students. The FAFSA or FAFSA determines eligibility for this program.

Guaranteed Student Loans (GSL)
The Guaranteed Student Loan is a low-interest loan made to students by a lender such as a bank, credit union, or

Financial Aid • Learning at Iowa
The student newspaper, The Daily Iowan, also has job listings in the classified ads. Friends, advisers, and instructors are other sources of information about jobs.

Student contact the employers directly to arrange interviews. The Office of Student Financial Aid does not operate a referral or placement service for student employees. However, students who are hired for jobs or camps must come to the student employment area of the Office of Student Financial Aid, 213 Calvin Hall, to process paperwork.

College Work-Study
The College Work-Study (CWS) Program helps students earn money to finance educational expenses. This program is currently funded by the U.S. Congress and the state of Iowa legislature. The amount of students’ CWS eligibility is based on federal need as determined by the FAF or FFS need and legislative funding. Students must be enrolled at least half-time in a degree program and must meet the Reasonable Academic Progress standards. The work experience should complement and reinforce the educational goals of the student. College Work-Study employees cannot work more than an average of 20 hours per week. Students who are awarded CWS receive a listing of all eligible job openings.

Other Sources of Aid
A guidance counselor or high school principal may have information on local scholarships, and school or public libraries are excellent sources for publications about financial aid. Many clubs of employment professional associations, and labor unions have programs to help pay the cost of education for children of employers or members. Other sources include foundations, religious organizations, fraternities or sororities, town or city clubs, community organizations, and civic groups. A little searching on the student’s part may unearth some additional source of financial aid.

Information about financial assistance for physically disabled students is available from the University’s Office of Services for Persons with Disabilities. Information about financial assistance for veterans of United States military service is available from the University’s Office of Veterans Services.
ACADEMIC SERVICES

Academic Advising Offices

Faculty Advisers
Each student is assigned an academic adviser to assist with educational planning, academic counseling, and registration. Students with declared majors are assigned advisers in their major departments. Students with open majors, or certain preprofessional majors, and most entering Liberal Arts freshmen are assigned advisers in the Undergraduate Academic Advising Center. Upon admission to professional colleges (Business Administration, Education, Engineering, Nursing, Pharmacy, Dentistry, Law, and Medicine), students are advised by the college dean or their designated representatives. Graduation students are advised by their department heads and the Graduate College dean.

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

Undergraduate Academic Advising Center
Professional advisers at the Undergraduate Academic Advising Center are trained to help students who want to explore various fields of study as they select career paths and make academic plans appropriate to their interests. Advisers' offices are located conveniently near the Clinton Street student residence halls.

Collegiate Academic Offices
Each of the undergraduate colleges of the University maintains an academic department office. These offices are available to all students in the respective college for assistance with questions concerning admission, academic majors, degree requirements, grading options, career and degree plans, and other items of concern. They assist students who want to change advisors or degree programs, and they act on student complaints.

Office of International Education and Services (OIES)
The OIES is the focal point of the University's international activities. It has administrative responsibility for the University's foreign student/scholar program and for study abroad program. It also has development responsibilities in international educational exchanges and technical cooperation activities. The OIES works to integrate the campus by developing and promoting all aspects of its international dimension.

The OIES promotes development of and cooperation among international educational, research, international, and technical cooperation activities. 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 office for the Midwest Universities Forum for International Activities (MUCIA) is located in the OIES, encouraging involvement of University of Iowa faculty in MUCIA activities.

The OIES provides services and facilities and organizes extracurricular programs for both domestic and international students and faculty. It maintains a library with references on study, work, and travel to other countries, including information about foreign universities and study abroad programs open to UI students. It helps students select study abroad programs to complement their on-campus academic programs and helps assure that they receive the correct credit for such activities. Students also receive information and applications for the Presidential Award for Study Abroad and the Fulbright Marshalls and Fulbrights awards at the OIES.

Foreign student advisers provide information, counseling, and services related to orientation, immigration regulations, financial aid, and liaison with foreign governments and sponsoring agencies, and help with problems and questions in areas except academic advising. They sponsor or support educational programs, such as the Friends of International Students, the Conveneral English Partners, and lunches and discussions that foster constructive interaction between students and scholars from other countries and their domestic counterparts.

Students considering study abroad should consult the Office of International Education and Services. The following are University of Iowa study abroad courses:

- 098.05 International Student Exchange Program
- 098.06 Exchange Program
- 098.07 Special Exchange Program
- 098.11 Journalism to London at City University
- 098.12 University of Iceland Exchange Program
- 098.13 University of Lancaster Exchange Program
- 098.24 Iowa-London Exchange Program
- 098.24 Iowa-London Bachelor
- 098.25 Iowa-London Bachelor
- 098.07 CHEE Athens, Spain
- 098.08 CHEE Liberal Arts/Serve, Spain
- 098.09 CHEE Language and Society/Serve, Spain
- 098.10 CHEE Business and Society/Serve, Spain
- 098.111 Banque Country Counselors
- 098.12 CHEE Parla Program
- 098.13 CHEE Beijing University, China
- 098.214 CHEE Tsinghua University, China
- 098.215 CHEE Tsinghua University, China

Office of Cooperative Education
The UI Office of Cooperative Education, located in 315 Cullen Hall, is a central clearinghouse for students interested in obtaining educational work experiences prior to graduation. Yearly, some 1,200 undergraduate and graduate students accept internship-type positions related to their academic and professional interests. Cooperative education assignments consist of fall, spring, or summer semesters with opportunities existing throughout Iowa, across the United States, and overseas.

Cooperative education experiences give students opportunities to assume responsibility, apply their studies 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 state-of-the-art equipment and practices. With the approval and supervision of a cooperating faculty member, many students are able to use their cooperative education assignments as field experiences for academic credit.

At the cooperative education office, students have access to extensive lists of available opportunities, get help with resume writing, and work individually with specialists who help them identify or create opportunities to try satisfying new.

A number of students in business and engineering participate in cooperative education each year. So do many in art, English, foreign languages, history, nursing, physics, mathematics, and more. Students interested in this educational opportunity should visit the Office of Cooperative Education during their first year at the University.
Placement Services, Career Information

Business and Liberal Arts Placement Office

Professional staff are available to help students and graduates explore and plan their careers. Advisors help individuals at every stage of the career planning process, from discovering what they do well and enjoy to developing specific strategies to make the career search efficient and successful.

The Business and Liberal Arts Placement Office provides workshops and resources to assist seniors and graduate students seeking employment in business, industry, government, and nonprofit agencies. Along with on-campus interviews that take place in the fall and spring, students and alumni can register for a subscription to a weekly Job Bulletin and a reference like service.

The office provides programs on resume preparation, job hunting, and interviewing skills. The Employer Literature Room offers information on employers, salaries, and employment trends. Offices are located in 24 Phillips Hall and 380 Iowa Memorial Union.

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

Careers Day, a cooperative event, is held each fall and provides students the opportunity to meet with hundreds of employers and graduate schools representatives in an informal setting. A Summer Jobs Fair in the spring semester is also an annual event.

Career Information Services

Career Planning

The Career Information Services office is located in 24 Phillips Hall and provides individual advising and career services to help students from all colleges define their interests, abilities, values, and work-life style preferences. SIGI and SKILL computer-based career assessment and self-guided career decision-making programs are available to help students match their personal preferences with various career opportunities.

Career Information Center

The Center, a self-help reading room in 266 Iowa Memorial Union, contains hundreds of resource materials on labor market trends, career options, academic requirements for specific careers, work experience, 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 nonprofit agencies, defining job objectives and writing resumes and cover letters, and improving interviewing skills. An advisor is on duty to help students use the materials. No appointments are necessary.

Tutorial Labs

Mathematics Tutorial Lab

The Mathematics Tutorial Laboratory, sponsored by the Department of Mathematics, serves as a teaching tool for students who lack adequate high school mathematics preparation for the University's required math course. The primary purpose of the math lab is to provide tutoring to students enrolled in 102.1 Basic Algebra I, 122.2 Basic Algebra II, and 223.2 Basic Geometry.

The lab plays an integral part in the instructional effort of the 223.1 course through remedial tutoring, preparation for assignments and tests, and individual tutoring when necessary.

Students are encouraged by their lecturers and discussion leaders to use the math lab facilities.

The Mathematics Tutorial Lab also has tutoring rooms and hours to assist students who are enrolled in 223.1 Basic Algebra II, 223.1 Quantitative Methods I, and 223.2 Quantitative Methods II. As staff time permits, the math lab also provides tutoring services to students in 223.5 Trigonometry, 231.10 Elementary Functions, 232.15 Calculus I, and 232.15 Engineering Calculus.

The math lab is staffed by professional staff members who are trained to help students improve scores on tests.

Reading Lab

The Reading Lab of the Rhetoric Program provides one-on-one instruction for University students who want to improve their college-level reading and study performance.

Rhetoric graduate students work with students to combine courses reading that is difficult for students with elective reading based on the students' interests.

Students schedule two hours per week in the lab, usually Mondays and Wednesdays, or Tuesdays and Thursdays. In the lab, they write about their reading and discuss it with their instructor. The type may also work on reading rate/reading speed, University course requirements, monitoring and improving comprehension, and study skills as needed.

Students may register for the lab at 12 English/Philosophy building or by calling the lab or the Rhetoric Program.

Writing Lab

The Writing Lab provides individualized written experiences for University students who feel inadequately prepared for college writing. Lab students discuss their work in peer-visual conferences with teachers, who

Transcripts

Students who have completed work at The University of Iowa can obtain an official transcript of that work upon request to the Office of the Registrar. Fees are $3 for the first copy and $2 for each additional copy on the same order. An official transcript cannot be released to any student who has a past due University account.

Services for Persons with Disabilities

The University of Iowa is committed to making its facilities, services, and programs fully accessible to people with disabilities. The Office of Services for Persons with Disabilities (SPD) provides services to students with both visible and invisible disabilities. People with a wide range of disabilities are served, including those with hearing and speech impairments, learning disabilities, mobility restrictions, visual impairments, and others. The goal of SPD is to help students with disabilities enjoy the same rights and assume the same responsibilities as other students.
General Services  •  Student Life at Iowa

Disabilities. Because students on an individual basis to locate the types of assistance appropriate to their needs, from securing failure to personal attendance to finding tape recorders or emergency loan

Special Support Services

The Office of Special Support Services, located in the Student Union, provides such services as a support system for individuals who may need academic, social, or psychological assistance.

Special Support Services is made up of the following programs: the Academic Success Program, the Alcohol and Drug Abuse Program, the mental health services, and the career planning and placement services.

The University of Iowa is committed to providing a high-quality education for all students. The University of Iowa is dedicated to the principle of equal opportunity and prohibits discrimination against any individual on the basis of race, color, religion, national origin, sex, age, sexual orientation, gender identity, disability, or veteran status.

Cultural Centers

Afro-American Cultural Center

The university operates the Afro-American Cultural Center, which serves as a cultural and social center for students of African descent. The center sponsors a variety of programs, including concerts, lectures, films, and workshops, and provides a space for students to gather and socialize.

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, which provide programs and services to students of African and Native American descent.

Recreational Services

The Division of Recreational Services, located in the Field House, administers one of the largest recreation programs in the country. The division offers a wide range of programs and activities for all ages and abilities, including swimming, tennis, basketball, and a variety of fitness classes.

Sports Clubs

Recreational services offer a variety of opportunities for physical activity, including a variety of sports and activities such as soccer, basketball, and volleyball. The sports clubs are open to all students and provide a great way to stay active and meet new people.

Lection Programs

The University of Iowa also offers a variety of programs to promote health and well-being, including programs for students with disabilities, as well as programs for students who are interested in hobbies or outdoor activities.

The University of Iowa is committed to providing a high-quality education for all students. The University of Iowa is dedicated to the principle of equal opportunity and prohibits discrimination against any individual on the basis of race, color, religion, national origin, sex, age, sexual orientation, gender identity, disability, or veteran status.
informal Recreation
A drop-in recreation program is available for study halls and areas including basketball, swimming, racquetball, volleyball, tennis, weight training, and jogging.

Outdoor Recreation Program
The Macbride Nature Recreation Area allows recreational services to offer one of the finest university-managed outdoor programs in the country. This 450-acre Macbride Nature Recreation Area is located 15 miles north of Iowa City on Lake Macbride and the Conunale Reservoir. There are picnic and camping sites, softboat and canoe rental, nature trails, an outdoor archery range, a raptor observation center, and some of the finest cross-country ski trails in the Midwest.
The division also offers an outdoor trip program that features a wide variety of trips offered almost every weekend in activities such as white water canoeing, backpacking, bicycling, hiking, rock climbing, horseback riding, and spelunking. An outdoor check-out service is located at 700 South Clinton Street, offers all kinds of outdoor equipment, including cross-country skis, picnic equipment, canoes, backpacks, skates, and tents.

Handicapped Program
Recreational services have a weight and exercise room with equipment especially for the handicapped. In addition, recreation staff provide programs enabling disabled students who want to be mainstreamed into regular recreational services programs. A limited number of programs strictly for the handicapped are also offered.

Summer Sports Camp
The University of Iowa has one of the largest summer sports camps programs in the Midwest. Popular team sports are offered, such as boys and girls' basketball, coed soccer, volleyball, wrestling, track and field, golf, boys' and girls' gymnastics, soccer, basketball, softball, and tennis. These areas are also unique camps in activities such as volleyball, cheerleading, flag corps, building, and fairs medicine.

Iowa Memorial Union
The Iowa Memorial Union is the hub of student life. Its facilities include a copy center, the Campus Information Center, the University Box Office and check cashing service, the Office of Campus Programs and Student Activities, the Whitemore, which offers fine entertainment, a variety of food services, a recreation area with billiards and electronic games, a bar, a bookstore, and a craft resource center.

rooms for lectures, concerts, meetings, and social events; and art and sculpture display areas.
The joining Iowa House has 110 guest rooms for parents, alumni, conference participants, and other visitors to the campus.

Also housed in the union are the Student Activities Center and the Information Services Office, the Career Information Services office, and the Center for Conferences and Events.

Student Health Service
Student Health Service is located in the Steadler Building on the University health campus. All registered students at the University, except those registered in off-campus courses, are eligible for outpatient care at the Student Health Clinic. Visits are free but charges are made for laboratory procedures. A free service for operations, minor surgery, and some special procedures.

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

University Counseling Service
The University Counseling Service staff of professional psychologists, social workers, and advanced doctoral students offers educational (learning disability assessment), career, and personal counseling and therapy to individual, couples, or group sessions. It also offers workshops, workshops, and consultation activities. Most services are available to students without cost. 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, reservists, and civilians in matters relating to Veterans Administration, educational benefits, University registration, and study at the University.

Women's Resource and Action Center
The Women's Resource and Action Center (WRAC) provides services to meet educational, cultural, social, and personal needs of University and community women. WRAC advocates the removal of all barriers to equal access and self-determination, including barriers of sexism and classism as well as those based on physical ability, sexual preference, and gender. Through its feminist programs and services, the WRAC staff is committed to redressing Iowa women through providing information, skills, and support.

The WRAC provides a resource for many women's organizations; sponsors a Women's Internship program; offers evening and weekend workshops, lectures, films, and discussions; provides a wide variety of support and discussion groups for women; offers career-planning and job-seeking sessions for women; and publishes a newsletter twice a year.

The WRAC houses the Sojourner Truth Women's Resource Library of books and Periodicals on a wide range of women's topics. For persons dealing with sexual harassment and other forms of discrimination, the WRAC acts as an advocate and provides consultative and informational support. WRAC maintains an information and referral system, a resource center, and an active volunteer program.

HOUSING
Fair Housing Policy
The following is the University's statement on fair housing practices: "Any and shall be the first policy of the University that householders shall not rent to all students on the basis of their race, religion, color, or national origin.

Iowa City has a fair housing ordinance passed in 1974 that seeks to secure housing without distinction due to race, religion, color, or national origin."

University Residence Halls
The University's residence halls provide housing and dining accommodations and academic and support program support for 6,500 single students. The halls reside in up to 9 residence halls and are supervised by the Department of Residence Services. University residence hall furnishings, facilities, and services are designed to provide a pleasant and conducive to effective study. Single, double, triple, and quadruple rooms with full or partial board are available in the Great House Assembly Residence Halls (west campus), which include Hillcrest, Quadrangle, Renwor, and State halls, and in the Clinton Street Residence Halls (east campus), which include Ridge, Overton, Dauph, Mayflower, and Story halls. There are lounges, study areas, game rooms, coin
laundry facilities, and small stores in or available to each residence hall. Computer terminals, reference materials, browsing libraries, and private rooms for group study sessions are available in three monitored learning centers.

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

Student- and staff-initiated programs and activities provide opportunities for pursuit of social, recreational, cultural, and educational concerns. Several classes are taught in residence halls. Academic advising centers and tutorial services also are available.

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

**Applications and Assignments**

With their admission application forms, prospective undergraduate students receive separate forms on which to apply for residence hall accommodations. A student applying for residence hall accommodations should read the terms and conditions of the contract, the conditions of the offer of admission, and the information 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, Burge Hall.

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

Residence assignments are made without regard to race, color, nationality, or religion.

The residence hall application/contract and $50 advance payment constitute a contract offer that may be withdrawn by notifying the University Housing Assignment Office in writing before the application becomes a binding contract. The application becomes binding approximately 60 days after the University Housing Assignment Office issues 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 and to those who reject residence hall contracts in accordance with the terms and conditions set forth in the contract.

**Rates**

Basic rates for University residence hall accommodations for the 1987-88 academic year are $2,189 for a double room and $2,599 for a triple, with full board. Rates for the several available rooms and board options vary according to the accommodations.

*Rates are subject to change annually.*

**Family Housing**

There are 269 University-operated apartments for married students or legally dependent family units in the Hawkeye Tower, Hawkeye Court, and Parkison complexes.

Rates for 1987-88 are $139.75 per month for one-bedroom units, and $219.00 to $265.50 for two-bedroom units, including telephone with in-campus and local service, but not including gas or electricity. All units are unfurnished.

*Rates are subject to change annually.*

Family housing is assigned according to the order in which applications are received. The applicant must meet all University admission requirements before an assignment can be made. Applications may be filed before completion of the application process, but will not be accepted more than a year in advance.

**Off-Campus Housing**

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

**Fraternities and Sororities**

Thirty undergraduate social fraternities and twenty undergraduate social sororities exist on the Iowa campus. Twenty-two fraternities and seven sororities operate chapter houses, which accommodate thirty-five to sixty-six people each.

Undergraduate fraternities include Acacia, Alpha Epsilon Pi, Alpha Phi Alpha, Alpha Sigma Gamma, Phi, Alpha Tau Omega, Beta Theta Pi, Delta Chi, Delta Tau Delta, Delta Gamma, Kappa Alpha, Kappa Sigma, Lambda Chi, Omicron Pi, Phi Beta Sigma, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Sigma, Phi Kappa Theta, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Alpha Mu, Sigma Chi, Sigma Lambda Beta, Sigma Sigma Gamma, Sigma Phi Epsilon, Sigma Pi, Sigma Tau Gamma, Tau-Kappa Epsilon, and Theta Xi.

Undergraduate sororities include Alpha Chi Omega, Alpha Delta Pi, 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, Sigma Delta Tau, Sigma Gamma Rho, Sigma Kappa, Zeta Phi Beta, and Zeta Tau Alpha.

**CODES, POLICIES, AND STUDENTS’ RIGHTS**

**Code of Student Life**

As members of the academic community, students are encouraged to develop a capacity for critical judgment and to engage in a responsible and independent search for truth. Freedom to teach and freedom to learn are inextricable facets of academic freedom. The freedom to learn depends upon appropriate opportunities and conditions in the classroom, on the campus, and in the larger community. To provide and safeguard the right of every individual student to exercise this freedom to learn without undue interference by others, the University has developed a Code of Student Life. The code covers conduct that adversely affects a University process or function or some distinct and clear interest of the University as an academic community. In order to foster an environment where academic freedom is exercised in a responsible manner, all students are expected to acquainted themselves with this 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 purpose its educational goals persons of many nationalities, races, and creeds. The University guides by the principle that in no aspect of its programs shall there be discrimination in the treatment of persons because of race, creed, color, national origin, sex, or any other classification that deprive the person of consideration as an individual, and that equal opportunity and access to facilities shall be available to all. Among the classifications that deprive the person of consideration as an individual are those that are based on adjectives or expressions of preference. This principle is expected to be observed in the internal policies and practices of the University, specifically in the admission, housing, and education of students; in policies governing programs of extracurricular life and activities; and in the employment of faculty and staff personnel. The University shall work cooperatively with the community in furthering this principle.
Student Complaints Concerning Faculty Actions

Student complaints concerning actions of faculty members are pursued first through the internal mechanisms established in each college for this purpose.

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

- The student should first attempt to resolve the issue with the faculty member involved.
- Lacking a satisfactory outcome, the student should turn to the departmental executive officer, if any.
- 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 associations for academic affairs in the Graduate College concerning ways to resolve complaints.

Some colleges (Business Administration, Dentistry, Education, Engineering, Law, and Nursing) also have established an ombudsperson system as an alternative mechanism for handling student complaints. Information concerning the internal mechanisms established in a specific college is available in the college dean's office or Collegiate Associations Council (CAC) office.

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 in section 26.20 of the University Operations Manual dealing with alleged violations of the statement on Professional Ethics and Academic Responsibility as specified in section 26.20. A description of these formal procedures can be obtained from each college dean's office or collegiate ombudsperson, the Liberal Arts Office of Academic Programs, the Undergraduate Academic Advising Center, or the office of the CAC.

Policy on Sexual Harassment

Under the Regents' Rules of Personal Conduct and The University of Iowa's Human Rights Policy, faculty, staff, and students have the right to be free from sexual harassment by colleagues, supervisors, or instructors. The University does not condone actions and words that a reasonable person would regard as sexually harassing or coercive.

Individuals who feel that they have been subjected to such harassment should approach their supervisor, dean, or the University's Office of Alternative Action. In investigating such complaints, the following principles are observed:

- The person bringing the complaint suffers no retaliation.
- The complaint is not discussed with anyone else without the complainant's permission.
- If permission is given to pursue and investigate the complaint, such an investigation must be conducted by the head of the major administrative unit in which the complaint was brought or if a designee of that administrator.
- In conducting such an investigation, the right to confidentiality, both of the complainant and of the accused, is respected.
- The investigation is conducted as quickly as possible and the results reported to the complainant.
- In the event that the complaint is found to be valid, the person(s) found to have engaged in sexual harassment will receive appropriate counseling or disciplinary action. As would be the case in other instances where violations of University policy have occurred.
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Research Activities • Special Resources at Iowa

Research Activities

The University recognizes that its creative activity is indispensable. If its teaching is to be humane, relevant, and effective, it must be a distinguished institution of higher learning. The University holds that the term “research” applies to creativity in all fields. Creative originality, whether in the law or in the sciences, is a common characteristic of significant creative activity in the overall intellectual life of the institutions.

The Office of the Vice President for Educational Development and Research maintains an overview of the overall individual research commitments of the institution and actively promotes, in a variety of ways, the research mission of the University and the educational development efforts of the faculty. This office also provides ongoing relationship with the Graduate College because of the Graduate College’s role in the overall University role of the college and the close connection between the graduate programs and research and creative activity.

The University Research Council assists the vice president for educational development and research in a regular advisory capacity. The council consists of faculty members who are widely recognized for their professional involvements in basic research or creative activity, one representative of the University staff, and two student members. Faculty members include two each from the physical, biological, and social science 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 activity. It advises the vice president on procedures concerned with securing and allocating funds for support of research and creative activity, and additional matters relevant to the general research and creative missions of the University and the health of basic scholarship on campus.

Programs

With the advice of the University Research Council and staff appointments involving officers and committees of the University, the Office of the Vice President for Educational Development and Research currently supports the following programs.

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 of junior faculty (other than those in the College of Dentistry, Medicine, and Pharmacy) who wish to do health-related research. To qualify, the faculty member must hold a full-time appointment in 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/she believes has the potential to lead to the development of a full-fledged program of research.

Incentive Grants

Limited funds are also available in the Office of the Vice President for Educational Development and Research to faculty members to cover the costs of materials, supplies, equipment, travel costs, and travel assistance for specific research projects; for faculty research related to specific research projects or for the purpose of acquiring skills, knowledge, or institutions that will enhance research at the University and for honoraria and expenses of visiting lecturers.

Services

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

Central Research Facilities

To facilitate statewide research activities, the University selects facilities and activities that are critical to central research development. The following facilities are available to all interested scientist students and faculty.

Computer-Assisted Image Analysis Facility

The Image Analysis Facility, located in the Medical Research Center, provides instrumentation and technical assistance for research programs involving digital image processing and analysis.

Two Dual Zeiss IXP00 Imaging Processing Systems and a P250 Dual System and X-laser systems are in operation, along with two Microachines Optronics computer systems, an Oricene EC 20/25 digital camera, and various macro/micro peripherial devices. Available software includes Micro VAX, FORTRAN, and Pascal compilers as well as several image processing packages.

The facility has the capacity to digitize images from microscopic slides, autoradiographs, photographs, video signals, and video tape. Most micro-peripherial devices 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.

The facility is well equipped for quantitative modeling by computer, using Syflet and Free.

Electron Microscopy (EM) Facility

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

Equipment includes the following: a Hitachi S-420 scanning electron microscope equipped with a cryotable, a Microscan SEM-EP detector, and an INCA Oxford energy dispersive X-ray analysis system; an E3 microcomputer-controlled scanning electron microscope equipped with a Noran energy dispersive X-ray analysis system; a Phillips EM-301 electron microscope equipped with a Noran energy dispersive X-ray analysis system; and a Zeiss DSM 960 electron microscope equipped with a Noran energy dispersive X-ray analysis system.

The Electron Microscopy Facility is also available for scanning electron microscopy, using a Hitachi S-420 scanning electron microscope equipped with a Noran energy dispersive X-ray analysis system; a Zeiss DSM 960 electron microscope equipped with a Noran energy dispersive X-ray analysis system; and a Zeiss DSM 960 electron microscope equipped with a Noran energy dispersive X-ray analysis system.

The Electron Microscopy Facility is also available for scanning electron microscopy, using a Hitachi S-420 scanning electron microscope equipped with a Noran energy dispersive X-ray analysis system; a Zeiss DSM 960 electron microscope equipped with a Noran energy dispersive X-ray analysis system; and a Zeiss DSM 960 electron microscope equipped with a Noran energy dispersive X-ray analysis system.
High Field Nuclear Magnetic Resonance (NMR) Facility

Two superconducting spectrometers are the basis for the High Field NMR Facility. The Bruker WM 300 spectrometer operates at 300 MHz, and the Bruker MSL 300 operates at 300 MHz for complementary observation. Very high spectral resolution and signal intensity can be achieved for structural determination of complex molecules. Both instruments are fully microcontroller- and H/W-volatile temperature-coupled modules. Virtually any multiplex two-dimensional experiments can be performed on the spectrometers.

Both hard disk and floppy disk systems provide data storage. Either digital or standard NMR data is available. Proton NMR spectra are recorded in 3mm tubes. Carbon-13 and other heteronuclear spectra are recorded in 3mm, 5mm, or 8mm tubes. Carbon-13 observation is possible with a combination of proton and either fluorine or phosphorus decoupling. Small samples can be examined in either the high power or magic-angle spinning mode on the Bruker MSL-300 spectrometer.

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

High Resolution Mass Spectrometry Facility

The High Resolution Mass Spectrometry Facility located in the Engineering Building. This facility features a Gemini LCQ ion-trap mass spectrometer, with a quad double-focusing mass spectrometer, and a high-resolution mass spectrometer. This technique is especially useful in research areas that analyze the composition of complex samples, such as environmental studies.

Fast atom bombardment mass spectrometry (FABMS) provides extremely accurate mass measurements and permits assignment of probable elemental compositions for any molecular ion or fragment. Analysis of molecular ions in this manner generally provides better accuracy and requires less time than any other method of elemental analysis, even if the sample is impure.

The facility consists of a VG 240-HF double-focusing, double-geometry mass spectrometer interfaced with a DEC PDP 11/23 computer data system and a Hewlett Packard 5890 gas chromatograph. The gas chromatograph is equipped with packed and capillary injection systems. The 240-HF has a fairly unusual, fast-scanning magnet with a 5-mm radius of 3000 au at its fast-accelerating potential of 8 kV. Other mass ranges are covered by decreasing the accelerating potential. Resolution specifications are 12,000 in the EI and 12,000, and 75,000 in the FAB mode.

High Speed Computing Facility

The High Speed Computing Facility is located in the Engineering Building. This facility features a Gemini LCQ ion-trap mass spectrometer, with a quad double-focusing mass spectrometer, and a high-resolution mass spectrometer. This technique is especially useful in research areas that analyze the composition of complex samples, such as environmental studies.

Fast atom bombardment mass spectrometry (FABMS) provides extremely accurate mass measurements and permits assignment of probable elemental compositions for any molecular ion or fragment. Analysis of molecular ions in this manner generally provides better accuracy and requires less time than any other method of elemental analysis, even if the sample is impure.

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Large Scale Fermentation Facility

The Large Scale Fermentation Facility located in the Bowen Building makes possible the large-scale growth and recovery of such microorganisms as yeasts and bacteria.

With the new, sophisticated growth, monitoring, control, and harvesting systems, the facility is one of only four medium or large-scale fermentors in the United States that are able to grow methanotrophic bacteria, and it is one of only five or six such facilities able to grow extremely thermophilic bacteria at 70-100°C.

The facility director is available for consultation on medium computation, fermentation, or other relevant technical and scientific services.

Laser Facility

The Laser Facility consists of a wide variety of modern laser instrumentation, including the following:

- Optical-frequency dye laser systems, covering the visible region of the spectrum.
- Nd:YAG laser system with tunable dye laser and broadband dye laser system.
- Single-pulse tunable dye laser system.
- Ti-sapphire laser system.
- Picosecond Ti-sapphire laser system.
- Femtosecond optical parametric amplifier.
- Four-wave mixing and two-photon processes.
- Attosecond pulse generation.
- Attosecond pulse characterization.
- Attosecond pulse control.
- Attosecond pulse shaping.
- Attosecond pulse compression.
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interfaced with computer-controlled translation and a submicroscopic optical system; electron probe station; thin film spininer; voltammetric, mass spectrometric, and atomic absorption spectrometry; optical monitoring equipment; and several high speed digital oscilloscopes and computers for experiment control.

**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 purification, subunit identification, and amino acid analysis for structural information or crystallization of enzymatic or biological proteins. Two specialized flow-injection instruments are also 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 make an active role in the use of the facility. The Protein Structure Facility is located on the fourth floor of the Biomedical Science Building.

**Sponsored Programs**

The Division of Sponsored Programs maintains a research center that contains information on federal and nonfederal sources of funding for study and research projects by faculty and graduate students. Counseling for research projects conducted in the United States or abroad is also available. The division also maintains a database of information on 11,000 federal funding agencies is used to locate these agencies and to publish reports of opportunities. Faculty and students who would like to be contacted by agencies may be contacted.

The division publishes "Research and the University," a section in the faculty/staff newsletter, to inform faculty and staff about opportunities for research and the center.

The Division of Sponsored Programs is a source of information on public and private agencies that provide funds for research and study, including pre- and postdoctoral fellowships. Staff members locate potential funding agencies, assist in the preparation of budget and other materials, and give advice and assistance in effective organization and technical correctness in applications. The staff also assists in preparing publications through University channels and in locating the appropriate contact for the prospective donor's office. After an award is made, the division provides advice on matters other than expenditures. Sponsored programs also is responsible for contract negotiations.

**Center for Health Services Research**

The Center for Health Services Research (CHSR) has been the research division of the Graduate Program in Hospital and Health Administration since 1981. It is the University-wide focal point for a broad-based program of health services research. With the coordination and support of the CHSR, faculty and staff from colleges and departments throughout the University assess the organization, delivery, quality, and financing of health care services.

CHSR's interests embrace a broad spectrum of perspectives and disciplines, including economics, geography, organizational behavior, psychology, research methodology, sociology, preventive medicine, community settings, nursing, and clinical medicine. Through its research activities, the center promotes sound health organizations throughout the Midwest. CHSR also fosters and participates in research activities with professional and volunteer associations, citizens and public agencies, nonprofit organizations, health delivery institutions, and other health services organizations.

As the driving force behind formation of the Health Services Research Consortium, the center has developed affiliations with the Veterans Administration Health Services Research and Development Field Program, the Mayo Consortium for Health Services Research, and the National Institute for Rural Health Policy.

**Technology Innovation Center**

The University of Iowa Technology Innovation Center (TIC) offers a host of services and facilities designed to foster the development of new businesses with particular emphasis on those that make use of advances in technology. Many services at the center are welcomed by the needs of entrepreneurs and scientists alike. TIC gladly serves established companies eager to initiate new endeavors.

The strength of the center lies in its ability to couple the scientific and technical capabilities of the University with the expressed needs of the business community. Located in the University's Old Campus, TIC provides congenial, convenient space where interactions among academic scientists and those in business can flourish. It offers ready access to the University's computing facilities, research equipment, and instrumentation, as well as access to a battery of government services on campus. These include marketing, management, and finance.

**University House**

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

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

University House has a particular interest in faculty and students who are interested in the interdisciplinary research (IRD) program, unique in the nation, reports scholarly projects conducted by two or more University faculty members from different disciplines. University House also frequently sponsors research and scholarly development projects of faculty members from liberal arts colleges in the Midwest. University House also offers opportunities for collaboration with University faculty members.

Many informal opportunities for collaboration are offered by University House seminars and lunches in the center.

In addition to promoting faculty development in general, University House seeks to bring together University center, institutes, committees, and other groups into informal interdepartmental arrangements that foster the acquisition of external funding and support for educational and developmental activities.

All scholars at University House are provided with a personal computer and secretarial assistance, and access to a conference room, kitchen, and a lounge. Also available to University House are a cyber center, libraries, and a library book delivery service. Parking is free. In the last few years, the Central Butcher shop service that connects University House with the main University Mall has been a huge success. The program's annual music concerts, guest lectures, and annual art auction are sponsored by the Student Government Association and the University House committee.

**Research Activities • Special Resources at Iowa**
Video Center
The University Video Center provides high-quality video services and facilities, including those necessary to sustain and promote teaching activities. It also coordinates video equipment purchase and inventory and provides 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 systems design and maintains guidelines for equipment standardization.

Weeg Computing Center
The Gerald 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 an extremely wide variety of applications. These facilities are accessible through many terminals conveniently distributed around the campus.

WCC is connected to two national computing networks, BITNET and MEDIATHES PRL; BITNET is a high-speed interactive network linking the University and other academic institutions in the United States; MEDIATHES PRL offers a wide variety of national and international computing networks. MEDIATHES PRL is a high-speed interactive network through which campus researchers have access to national information resources and facilities and to facilities at other universities that are also served by NSFNET.

In addition to terminals and general-purpose minicomputer systems, facilities are available for producing microfilm, typesetting, and graphic output.

WCC's Personal Computing Support Center provides product demonstrations of microcomputer equipment, administers the Faculty/Staff and Student Microcomputer Purchase Program, and provides hardware and software support to campus microcomputer users.

Software supported by WCC covers such diverse areas as database, number crunching, program analysis, financial modeling, text editing and formatting, graphics, and database management.

Undergraduate educational seminars and consultation about microcomputer use are available on an ongoing basis. Specialized consultation also is provided for equipment and software selection, laboratory support, database, and instructional design applications.

Detailed information on computing facilities and services is available from the WCC Information Center in the Lindquist Center.

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

Institutes
Dean for Dental Research
Contact the College of Dentistry 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 Environmental Health
See "Preventive Medicine and Environmental Health" in the "College of Medicine" section of the Catalog.

Institute of Hydraulics Research
See the "College of Engineering" section of the Catalog.

Institute of Public Affairs
See the "Controlling Education" section of the Catalog.

Ivy B. McCleary Institute of Accounting Research
Contact the Department of Accounting in the College of Business Administration for information.

Social Science Institute
Contact the College of Liberal Arts for information.

Centers
Albion's Disease Research Center
Contact the College of Medicine for information.

Arthritis and Allergic 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 Computer-Aided Design
See the "College of Engineering" section of the Catalog.

Center for International and Comparative Studies
See the "Graduate College" section of the Catalog.

Cencer for Materials Research
Contact the Department of Biomedical Engineering in the College of Engineering for information.

Center for New Music
See "Music" in the "College of Liberal Arts" section of the Catalog.

Center for the Study of Recent History of the United States
Contact the Department of History in the College of Liberal Arts for information.

Clep Palate Research Center
Contact the College of Medicine for information.

Clinical Research Center
See the "College of Medicine" section of the Catalog.

Comparative Legislative Research Center
See "Political Science" in the "College of Liberal Arts" section of the Catalog.

Cure Center: Diabetes and Endocrinology
See the "College of Medicine" section of the Catalog.

Dietetic Diagnosis 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 Genomic Education Center
Contact the College of Medicine for information.

Iowa Urban Community Research Center
See "Sociology" in the "College of Liberal Arts" section of the Catalog.

National Resource Center on Family Based Services
Contact the School of Social Work in the College of Liberal Arts for information.

Public Policy Center
Contact the Program in Urban and Regional Planning in the College of Liberal Arts for information.

Sichelbroad Research Center
Contact the College of Medicine for information.

Small Business Development Center
Contact the College of Business Administration for information.

Specialized Carolina Research Center
Contact the College of Dentistry for information.

Specialized Center for Occupational and Environmental Lung Disease
Contact the College of Medicine for information.

Laboratories
Iowa Lakeside Laboratory
See "Iowa Lakeside Laboratory" in the "College of Liberal Arts" and "Continuing Education" sections of the Catalog.
Orthopaedic Biomechanics Laboratory
College of Dental Medicine for information.
Translational Laboratory
Contact the Division of Continuing
Education for information.

Clinics
Lipid Research Clinic
Contact the College of Medicine
for information.

Others
Tumor Biology and Genetic Disorders
Unit
Contact the College of Medicine
for information.
Connie Selnin Fellowship Program in
Gilled Education
Contact the College of Education
for information.

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

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

Gerontology Programs
Contact the School of Social Work in
the College of Arts for information.
Iowa Peptide Hazard Assessment
Program
See the "College of Medicine" section of the
Catalog.

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

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

Social Science Data Archive
See "Political Science" at the "College of
Liberal Arts" section of the Catalog.

UNIVERSITY
LIBRARIES

University Libraries, 420 S. Gilbert
Assistance University Librarian: Ross W.
Althaus, Assistant Director, William N. Keller, Susan Haynes.
William C. Snyder
Assistant to the University Librarian: Barbara J.
Dueny

Acquisitions: Kathryn R. March Axel
Elizabeth A. Ford, Raja A. Tamang

Bibliographers: Christine A. McAuliffe, John Buoyt
Heffern, Catherine Loomis

Behavioral Sciences: William Anthony
Catalysis: Tajfun Cakmak, Apol, David A.
Asmuth, John J. Esh, Robert R. Filling, Grant A.
Flagg, Lawrence L. Gerver, Judith H.
Gottschalk, Karl R. Keller, Reuven G., Randy E.
Leu, Bonnie S. Mitch, Miguel A. Moreno, George P.
Shelly, Mary J. Nolen, Timothy R. Neyer, Mary
Ney, Helen R. O'Kelly, John P. Purcell

Chemical Sciences: Mark R. Conard,
Managing Director,-using micro libraries and
resources & databases: Ali Fahim,

Conservation, Preservation, and Summaries of publications: Carolyn W. Ralston,
Jill A. Barr, T. Allen, Joyce Gaspard, Mary R.
Martin

Reference: Helen B. Ryan, Ann S. Mitchell,
Kathio A. Arrechea, Mary D. Ritter,
Rebecca L. Johnson, James J. Spahn, Laura A.
Martin, Keith A. Ruggles, John H. Schacht

Serials: Ruth E. Ochs, Mary Vennstrom, Christer
E. Lundeberg, Marcia G. Misra

Special collections: Robert A. McCracken, Ann
Richard J. Geyer, Earl M. Rogers, David E.
Schoenewald

Departmental journals: Helen L. Sill, et al.
Stephen Mackey, Biology and chemistry and biology,
J. David Jordis, Peter J. Moroney, nursing
col SCREEN: John W. Forn, Jr., engineering
Loane S.菲格s, biology, John B. Bate, Grant S.
Flagg, Lawrence L. Gever, Judith H.
Gottschalk, Karl R. Keller, Reuven G., Randy E.
Leu, Bonnie S. Mitch, Miguel A. Moreno, George P.
Shelly, Mary J. Nolen, Timothy R. Neyer, Mary
Ney, Helen R. O'Kelly, John P. Purcell

The University's Main Library and its II
departmental libraries, plus the Law
Library, contain more than 2.8 million
volumes.
The Art Library contains approximately
62,000 volumes.
Botany-Thermodynamics, 74,000,
Business
Archaeology, 26,000,
Agriculture, 26,000,
Geology, 41,000,
Law, 21,000,
Mathematics, 40,000,
Physics, 76,000,
Psychology, 40,000.
The Library, which is administered by
the College of Law, contains 450,000
volumes.

Special Resources
With more than 2.8 million volumes, the
libraries of the University of Iowa make up
the largest library system in Iowa. Among
the university research libraries in the
United States and Canada, the symphony"thias in size of volumes held and 22d in
the expenditures for library materials.
In the Main Library, its II departmental
libraries, and the Law library occupy more
than 11 acres of space; provided seating for
more than 3,000 readers, and have more than
70 miles of shelving for collections.

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
year-round research is available. See
listing for "Iowa Lakeside Laboratory" in the
"College of Liberal Arts" section of the
Catalog.

Iowa State University offers more

Iowa Lakeside Laboratory
The laboratory is located on Lake Okoboji, Iowa, and is a field
station for the Biological and Physical Sciences. It offers two
term courses each year, with classes held in June, July, and August.
Facilities are available year-round.

Iowa State University offers a

University of Iowa
The University of Iowa is located in
Iowa City and is a public institution. The library system includes
numerous libraries and special collections, including:

University Library
The University Library consists of the
Main Library and several departmental
libraries.

Main Library
This library houses over 2.8 million
volumes and is one of the largest academic libraries in the
United States.

Special Libraries
Several special libraries are located on
the Iowa State University campus,
including:

Special Collections
This collection consists of rare books
and manuscripts, as well as other unique items.

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The University of Iowa Health Care specializes in advanced clinical care and research, offering comprehensive services through its seven core hospitals: the University of Iowa Hospitals & Clinics, the Stead Family Children’s Hospital, the U. S. Army Institute of Surgical Research, the University of Iowa Hospitals and Clinics, the University of Iowa Health Care, and the University of Iowa College of Medicine. These hospitals provide a wide range of services, including medical, surgical, and psychiatric care, as well as research and education programs. The University of Iowa Health Care is recognized for its excellence in patient care, research, and education, and is a leader in the development and implementation of innovative healthcare solutions. The mission of the University of Iowa Health Care is to improve the health and well-being of the communities it serves by providing the highest quality of care and innovative research and education programs.
Council on Speech Pathology and Audiology

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

Dental Service

The College of Dentistry—Dental Clinic provide comprehensive dental care in conjunction with dental education and research. Private care by faculty and graduate students is available to in addition to clinic care. Anytime, including employees and students at 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 service under the student health hospitalization fund.

The Dental Clinic operate a fee-for-service basis payable at each visit. Payment can be made with cash, check, or credit card. Because clinic treatment takes longer than private treatment, the patient's contribution at this time is appreciated, and the fees have been adjusted downward accordingly.

Health Occupations Education

Through this program, the University collaborates with the State Department of Education to provide technical and advisory services, educate teachers, conduct research, and develop curricula and instructional material for Health Occupations programs conducted at the middle and junior high schools. The Health Occupations Education staff also visits these institutions in their increasingly important role in conducting continuing education.

Health Sciences Library

The Health Sciences Library serves the combined information and research needs of the colleges of Dentistry, Medicine, Nursing, and Pharmacy. The Graduate Program in Hospital and Health Administration, and the Department of Speech Pathology and Audiology. The largest of the professional libraries in the University library system, the Health Sciences Library contains more than 200,000 volumes and receives more than 3,000 periodicals in addition to providing amplification equipment; the interior allows for enough reading and study space for almost 1,000 people. Special features of the library range from the latest in the health sciences literature, via MEDLINE and other periodicals, to the space back to the fifteenth century in the John Martin Room.

The Health Sciences Library follows the Law Library as the first two to be fully automated over the past several years. The first step was automation of the card catalog during 1967-68.

Oakdale Campus

Located seven miles northeast of Iowa City, the 500-acre Oakdale campus includes health-related community programs such as the Chemical Dependency Center, National Resource Center on Family Based Services, Otolaryngology—Head and Neck Surgery, Department of Orthodontics, the Veterans Administration Medical Center in Iowa City, and the Department of Speech Pathology and Audiology.

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University (State) Hygienic Laboratory

As the state of Iowa's environmental and public health laboratory, the University Hygienic Laboratory offers diagnostic, surveillance, analytic, training, and consulting services in many fields. They include microbiology, immunology, parasitology, industrial hygiene, serology, virology, toxicology, health physics, mycology, and radiation chemistry. The laboratory provides a wide variety of services to state and federal agencies, industries, and individuals. They perform environmental monitoring, and chemical, physical, and biological analysis of water, wastewater, hazardous waste, air, food, and other materials. They also support the Iowa Department of Agriculture and Landstede.

University Hospital School

A University-based program that deals with the problems of developmentally disabled children and adults, the University Hospital School serves as the Iowa Division of the Bureau of Developmental Disabilities. The program provides services in the fields of medicine, dentistry, nursing, nutrition, speech and auditory, physical and occupational therapy, recreational therapy, psychology, social work, special education, and counseling. The program is staffed by pediatricians, developmental pediatricians, nurses, social workers, occupational therapists, and other professionals.

Veterans Administration Medical Center

The Iowa City Veterans Administration Medical Center is a 589-bed facility that provides medical care to veterans in Iowa and the surrounding region. The medical center is staffed by a team of doctors, nurses, and other healthcare professionals who provide a wide range of services, including inpatient and outpatient care, specialty services, and long-term care. The center is located in the heart of downtown Iowa City and is easily accessible by public transportation or by car.

THE IOWA CENTER FOR THE ARTS

Located along the west bank of the Iowa River on The University of Iowa campus, the center is a unique cultural resource not only for the University community, but for the people of
the spalt and region. The center, which celebrates its 50th anniversary in 1985-86, fulfills a University dream of many generations to house arts that are not 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 special exhibition and exhibit spaces 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 showcase.

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 structures and educational-cultural offerings of the Iowa Center for the Arts. In addition to resources from the state of Iowa and the federal government, private contributions from growing numbers of corporate and individual patrons play an important role in the vitality and diversity of the center's service 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 in art education, research, and practice for a century. The original art building dates from 1934. Major additions were added in 1939-40, greatly extending classroom and studio space and providing a new wing for ceramics, sculpture, and graphic art.

A small gallery within the building, used primarily for the display of student work by students and visiting artists, is named for artist Sue DeWald, who in 1954 became the first recipient of the Master of Arts degree in studio art at The University of Iowa.

The school's Corazon Gallery, located in the International Center, features exhibitions of new and experimental work created at the University of Iowa by major visiting artists. The gallery presents lectures and performances that emphasize new concepts and directions in contemporary art.

Museum of Art

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

In the many 1960s, 1970s and 1980s, University Museum's extensive collection of twentieth-century paintings, sculpture, stained glass, and prints by 20th-century masters, such as Pablo Picasso and Lucio Fontana, are on display in the gallery's permanent collection.

University Theatre

University Theatre is the production unit of the Department of Theatre Arts, a pioneer in the study of all aspects of theatre. The school offers more than 200 performances each year, with a budget of more than $2 million, including productions by the University's student theater and dance groups, as well as guest artists from around the world.

Theatre and Dance

Theatre and Dance is the performing arts unit of the Department of Theatre Arts, a pioneer in the study of all aspects of theatre. The school offers more than 200 performances each year, with a budget of more than $2 million, including productions by the University's student theater and dance groups, as well as guest artists from around the world.

The Theatre Building is one of the finest educational theatre complexes in the country, housing three theaters and up-to-date facilities for classroom, laboratory, shop, and performance work. The E.C. Staller Theatre, a continental-style, 477-seat proscenium theater is one of the finest small theaters of its type in the United States. Theatre A is a "black box" production space with flexible seating units that can accommodate from 140 to 223, permitting quick modification of space surface relationships. The third theater, seating 146, is an open-stage theater designed specifically for the production of new and experimental works from the Playwrights Workshop.

All three theatres are equipped with state-of-the-art electronic lighting control and sound reproduction systems. Several shops for building, painting, marbleizing, and scenic scenery and properties as well as a specialized costume shop for designing costumes are on site. Additional space is provided for the Theatre Design Workshop.

School of Music

Opened in 1913-12, the home of the School of Music is spacious and convenient, with broad corridors broad from rehearsal rooms to two recital halls and to the stage of Hancher Auditorium.

In a given year, faculty artists and student performers present nearly 350 concerts and nearly 200 vocal and instrumental recitals are presented by students.

Cliff Roppel Hall, with its hand-crafted Casavant piano organ, seats 720 for public concerts. The 200-seat Hoppin Hall is both a classroom and the setting for many recitals. The school's largest ensemble is the ensemble orchestra. The school's ensemble ensemble, ensemble orchestra. The school's ensemble ensemble, ensemble orchestra.

The school has produced opera since 1986. Like other major stage productions, opera is performed in opera houses, as well as in educational and performance experiences, utilizing the talent and resources of other units of the University 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 funded by the Rockefeller Foundation, is a laboratory and training ground for composition and performance. Faculty and students under the direction of the Center for New Music perform a repertoire ensemble for the performance of both new compositions and music of the 20th century.

Two experimental music studies provide a wide range of opportunities for exploration and creative music making for students, including computer-generated music. The School of Music offers courses in composition, music theory, and music history.
Hancher Auditorium

Hancher Auditorium is a regional cultural resource and one of the focal points of the University of Iowa campus. The 2,600-seat facility opened in 1972 and in its first 16 seasons has hosted audiences of more than 2 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.

Hancher programming is supported by an annual giving program (Hancher Circle) and by the Hancher Auditorium Enrichment Fund which is establishing a $2 million endowment to sustain the auditorium's leadership in music, theater, and dance.

In addition to programming by the various units of the Iowa Center for the Arts each year (primarily the music and dance departments), leading artists from throughout the world appear on the Hancher stage—singers, ensembles, theater and dance companies, major symphony orchestras, and ethnic companies from other nations and cultures. University students are entitled to purchase tickets at a discount. Regularly, the Hancher Auditorium hosts a faculty recital series, and regularly attends events from a wide region in Iowa and western Illinois.

The auditorium has a Midwestern atmosphere. Handsome lobbies, a cale and gift shop, excellent acoustics, and a surprising intimacy in its interior design make it one of the finest halls in America. It truly is more than a concert or theater; it is an entire community's, indeed a national's, plant. Designed as an extension of the classroom and laboratory facilities of all of the performing units of the Iowa Center for the Arts.

Dance Department

The Dance Department, housed in Halsey Gym, shares some of the finest facilities in the nation's leading centers for dance education. The facilities include a studio and a large, well-equipped dance studio, a studio and editing room, and an extensive collection of dance literature.

Students have the opportunity to participate in many different productions during the year. The University of Iowa has produced a variety of dance programs, including student and professional companies, as well as international performers.

MUSEUM OF NATURAL HISTORY

The museum, located at MacBride Hall, is an outgrowth of the Cabinet of Natural History, established in 1859 by an act of the Iowa General Assembly. In the old building, a museum was established and opened to the public in 1861 and 1897. The University of Iowa in the house of the U.S.-China Exchange Program, which brings Chinese dancers and music teachers to campus, and for two years has been host to the Iowa State Botanical Gardens. The museum is open to the public on weekdays and Saturdays.

Broadcasting and Film

The Telecommunication Center, housed in a building adjacent to the CAB, is available to students for use in courses, seminars, and workshops. Film screenings are also held in the CAB.

The Writing Programs

A long-time program of special distinction in the Department of English, the Writer's Workshop provides opportunities for writers to work with and learn from nationally recognized poets and novelists. The International Writing Program brings accomplished writers and novelists to the University for extended periods of new writing and to develop projects in other languages.

Windover Press

The skills of making books by hand—using handmade paper, handwritten illustrations, hand-set type, and hand-printed pages—may be learned in the workshop of the Windover Press. The Windover Press is one of the nation's small company of distinguished hand presses, and it fords their excellence by the American Institute of Graphic Arts, whose prestigious contributions include all of the major publishers in the country.
Vanderbilt University offices and departments have been located in Old Capitol through the years, and it housed the office of the university president continuously from 1868 to 1970, when the president's office was relocated to make way for the restoration of Old Capitol as a historic site. Most of the rooms were restored to the 1860s and 1870s to represent the university years. Old Capitol was reopened in 1976 as a "living museum." Guided tours are conducted daily without charge.

OTHER SERVICES

Office of University Relations

The Office of University Relations (OUR) works to promote understanding of and participation in, and support of the University's mission and activities, both within the University community and among the general public. It seeks to maintain an effective communication program including both internal and external media. It coordinates the University administration on University publicity and serves as a liaison to facilitate communication between the central administration and appropriate University units, other colleges, and the public. The University Relations programs are implemented through the coordinated efforts of the department's University News Service (UNS) and the University Relations Publications. The University Relations Publications publish the University's newsletter for faculty and staff, various reports, and publications on University news, events, and current issues. The University Relations Publications are supported by the University's Office of Advancement and other special and general internal publications.

OUR also serves as the executive office of the Vanderbilt Alumni Association and has management responsibility for the University's Printing Service.

Publications [Printing Service]

The University's Printing Service is located in the Graphic Services Building in Nashville. The department operates 11 copiers centers located around the campus. Copiers are used for producing postcards, marketing materials, brochures and other promotional materials. In addition, the department also provides printing services for the University's mailing and advertising needs. The University's Printing Service is committed to providing quality service to the University community.
Evaluation and Examination Service

The Evaluation and Examination Service administers preregistration and exemption tests designed to assist entering students in course selection. 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, Graduate Management Admission Test (GMAT), Law School Admissions Test (LSAT), Test of English as a Foreign Language (TOEFL), and the National Teacher's Exam (NTE).

The Exam Service duplicates, scores, and analyzes classroom tests; assists in planning and processing course evaluations; conducts instrument research; prepares reports and technical bulletins pertaining to test development; grades, questionnaire design, and student policies; and provides consultation on questionnaire development and use.

Endowment 2000: A Covenant with Quality, to raise $150 million by the year 2000 to endow chairs for distinguished faculty, fellowships for exceptional postdoctoral and professional students, and a center for advanced study.

University of Iowa Press

The University of Iowa Press was established to publish significant results of original scholarly research and outstanding creative work in the arts. The press is controlled by the University Editorial Advisory Board, composed of faculty, members and students appointed by the vice president for educational development and research.
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**Dean:** George L. Leserberg  
**Associate Dean for Academic Programs:** James B. Lockberg  
**Associate Dean for Development and Research:** William E. Cooper  
**Associate Dean for Faculty:** Sarah Haney  
**Director of Business Office:** F. Less
The educational programs offered in the College of Liberal Arts provide the necessary foundation for the specialized education or training that many occupations and professions require. They provide the prerequisites for professional study in medicine, dentistry, pharmacy, and in business, law, and education, and they form the basis for graduate work. These programs also provide a general education, which by itself prepares students for a broad range of occupations.

Liberal education is general in the breadth of intellectual development that it infuses, but it is not superficial. The College of Liberal Arts offers 34 specific degree programs, each requiring extensive study in a particular academic discipline or in 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 exposes all students to work in mathematics, in logic or quantitative reasoning, and in a foreign language, and to a course in reading, speaking, and writing. 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 society they may inherit. The discoveries of scholars and the contributions of artists and writers in this century have greatly expanded our understanding of natural and social phenomena, our aesthetic sensibilities. The complexity of the modern world is matched by our increased need to understand it. That understanding, however, depends more than ever on acquiring a general education. It is the mission of the College of Liberal Arts to make that general education available and to guide students through the many options and requirements it presents. A liberal education prepares students for the requirements in the price of specialization. It develops the capacity to use 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 multifaceted character. The college is composed of units of various ranks: divisions, schools, departments, programs, and nondepartmental units. There are three divisions in the college. The Division of Fine Arts includes the Schools of Art and Art History, the School of Music, the Department of Communication Studies, and the Department of Theatre Arts. The departments of Computer Science, Mathematics, and Statistics and Actuarial Science compose the Division of Mathematical Sciences. The Division of Physical Education includes the departments of Dance, Exercise Science, Leisure Studies, and Physical Education and Sports Studies. Within the college there are six schools in addition to the School of Art and Art History and the School of Music; there are schools of Journalism and Mass Communication, Library and Information Science, Religious Studies, and Social Work.

Deans and programs provide instruction in the college and offer majors leading to one or more degrees, minors, or certificates in a particular field. The College of Liberal Arts is closely linked with the professional colleges of the University. Some departments in other colleges offer degrees and minors in liberal arts; similarly, other colleges may award minors for work done in liberal arts. For example, students admitted to the teacher education program of the College of Education are degree candidates in the College of Liberal Arts. The College of Liberal Arts also provides instruction for undergraduate enrollment in the colleges of Business Administration, Engineering, Nursing, and Pharmacy.

Degrees, minors, and certificates awarded by the college, as well as available programs, are described in full under separate entries in the Catalog.

Liberal Arts Office of Academic Programs

The Liberal Arts Office of Academic Programs is an integral part of the Office of the Dean. Located in 116 Satellite Hall, it serves students who wish to declare majors, change majors, etc. The second-grade-only option, or, second-semester permission for a student's signature for administrative actions such as late registration, late adding 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. Coordinate the advising of candidates for the Bachelor of General Studies (B.G.S.) degree; conduct interviews with students on academic probation; conduct reviews of students on academic probation and take dismissal actions, and request for reinstatement after dismissal.

The Office of Academic Programs also considers evidence and recommends appropriate disciplinary action for student plagiarism, cheating, forgery, and other academic misconduct. Students requesting 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 level, each department offers honors seminars, independent research, and the opportunity to pursue a senior project under the guidance of a faculty member. Successful completion of a senior honors project leads to a baccalaureate degree "with honors" in the major (see "Graduation with Honors" in this section of the Catalog).

The Stuart Hall Honors Center is a meeting place and study center for students in the honors program. It houses a reference library, study lounges, and computer terminals. Each year the Associated Illinois Honors Students plan a variety of activities—recreational, social, cultural, and academic. Entering students with strong academic records are invited to join the honors program; any student whose grade-point average meets the required minimum (3.50) may join at any time. For further information, contact the College of Liberal Arts Honors Program, Stuart Hall Honors Center.

Degrees Offered

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

Major Fields

The college confers degrees in the following major fields. The B.G.S. and B.L.S. degrees are granted with no major designations.

Asian studies—B.A.

Ancient civilization—B.A.

Anthropology—B.A.

Art—B.A., B.F.A.

Astronomy—B.A.

Biochemistry—B.A., B.S.

Biology—B.A., B.S.

Botany—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.
Home economics—B.A., B.S.
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.
Mathematical sciences—B.A., B.S.
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.A., B.S.
Social studies—B.A.
Social work—B.A.
Sociology—B.A., B.S.
Spanish—B.A.
Speech are hearing science—B.A., B.S.
Statistics—B.A.
Theatre arts—B.A.

Majors in Education and the Teacher Education Programs

Students may indicate a major in one of the fields of education at the time of admission or may change their major to one of these fields any time after enrolling. In order to be allowed to enroll in the foundation (major) courses in education, the student must be admitted to the Teacher Education Program (TEP).

To be admitted to the TEP, a student must have attained sophomore standing (28 semester hours) and must have earned a total cumulative grade-point average of at least 2.50. Transfer students who meet these standards may be admitted to the TEP upon admission to the University. In order to remain in the TEP, a student must maintain a 2.50 total cumulative grade-point average.

Application forms for admission to the TEP may be obtained in the Office of Student Services in the College of Education. Students admitted will be notified in writing. (For more information, see the “College of Education” section of the Catalog.)

Double Majors

Students may meet the major requirements in more than one department, and, if the departments award the same degree, the student may earn a double major’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 further information, see “Double Majors” below.

Requirements for the Major:

Specializations within Degree Programs

Many degree-granting units in the college offer internal specialization. Students may select one of the following areas of specialization within degree programs. For example, broadcasting and film is offered in the Department of Communication Studies, and nutrition is offered in the Department of Home Economics. Specializations in Chinese, French, Japanese, or Spanish are available to students seeking a degree in the Department of Language and Literature. The School of Art and Art History and the School of Music have many different tracks leading to bachelor’s degrees. studio art emphasis, art history emphasis, and art education emphasis, 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 through combinations of courses taken from several areas—for example, a specialization in public relations and advertising with courses taken in the Department of Communication Studies and the School of Journalism and Mass Communication; photography and graphic design specialization with courses taken in the School of Art and Art History and the School of Journalism and Mass Communication; or a specialization in management with courses taken in various social sciences departments.

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

Minors and Certificates

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 15 semester hours of course work.

The College of Liberal Arts also offers certificates in five programs: African Studies, Aging Studies, Global Studies, International Business, and Latin American Studies. Certificates require from 15 to 27 semester hours of prescribed course work. Specific requirements are listed elsewhere in the Catalog.

Interdisciplinary Opportunities

A number of interdisciplinary programs in the College of Liberal Arts offer majors, specializations within degrees, minors, or certificates. These programs include African Studies (certificate); Anti-American Studies (minor or specialization within the B.A. in American Studies); Aging Studies (minor or certificate); American Studies (major or minor); Ancient Civilization (major or minor); Comparative Literature (major or minor); Cultural Studies (minor, certificate, or honors interdisciplinary major); International Business (certificate); Latin American Studies (minor or certificate); Literature, Science, and the Arts (major); Science Education (major); and Women’s Studies (minor). Students pursuing the Bachelor of General Studies (B.G.S.) may plan their own interdisciplinary programs of study.

Specific requirements for these interdisciplinary degree programs, specializations, 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 from 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 program consists of 36 semester hours of credit, including 6 semester hours of departmental honors registration and the completion of an honors project. It leads to the degree of Bachelor of Arts with interdisciplinary honors. Students must submit a plan of study for approval during their senior 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.
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 or to any accredited medical or dental school in the United States that offers advanced degrees.

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

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

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

Students who plan to accept early admission to a medical or dental school and who wish to receive the 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 College of Liberal Arts.

Combined Degree Program: Engineering and Liberal Arts

Students may earn two University of Iowa baccalaureate degrees in a combined program in the colleges of Engineering and Liberal Arts. Students 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), B.G.S. (Bachelor of General Studies), or B.M. (Bachelor of Music) by the College of Liberal Arts.

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

To enter the combined degree program, students must be eligible for admission to the College of Engineering. Interested students should schedule an appointment with the advisement to the dean of the College of Engineering. Students must be approved for candidacy in the combined degree program by the College of Engineering and must be admitted to both the College of Engineering and the College of Liberal Arts.

Students who enter the program are required to complete the General Education Requirements and 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 course of study to facilitate the completion of their program. The specific engineering courses taken by students varies according to the engineering major selected. Since courses are taught in natural sciences, mathematics, humanities, and social sciences are accepted regularly for credit by both colleges, in many cases students satisfy the requirements of both colleges by taking a particular course.

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

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 baccalaureate programs in medical technology, nuclear medicine technology, or physician assistant.

Students who enter the combined degree program must meet requirements specified by both colleges. Candidates in the combined program usually are able to meet the baccalaureate degree requirements of both colleges in about five academic years. The exact length of time necessary to complete the program is determined by the major areas of study selected in each college. Students who enter the combined degree program are assigned two faculty 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. The program comprises an overall total of 154 semester hours of credit, including at least 30 semester hours of courses offered by the College of Medicine and additional semester hours of courses offered by the College of Liberal Arts.

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

Two or More Bachelor's Degrees

Students who already have been awarded a bachelor's degree from the College of Liberal Arts and who wish to earn an additional, different bachelor's degree must be readmitted to the college and 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 University of Iowa; nor may they earn a second B.S. if they already have a B.S. from Iowa. (See also "Students Returning for a Second Major" under "Double Major" in this section of the Catalog.)

Candidates for the B.A. and B.S. degrees 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 who must satisfy the collegiate residence requirement.

Requirements for Graduation (B.A., B.S., B.F.A., B.G.S., B.L.S., and B.M. Degrees)

Total Hours Earned

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

Satisfactory Grade-Point Average

The general requirements for graduation include the criterion of 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 college qualitative requirements 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.

B.G.S. students satisfy the qualitative 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.S. degree must earn a grade-point average of at least 2.00 in all course work applied toward the degree, all 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 enrolling in two consecutive semester hours in residence, i.e., 45 of the last 60 semester hours in residence; or an overall total of 90 semester hours in residence.

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

B.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 program in the colleges of Engineering and Liberal Arts are not subject to the residence requirement as stated above. Instead, they must complete at least 39 semester hours of courses offered by the College of Engineering and at least 39 semester hours of courses offered by the College of Liberal Arts.

General Education Requirements

Students must complete the following General Education Requirements by the B.A., B.S., B.F.A., B.L.S., and B.M. degrees.

Students who enroll(d) at The University of Iowa in the first term after July 1995 must complete the following General Education Requirements for the B.G.S. degree.

Rhetoric one or two courses (4-8 s.h.)

Mathematics two years of high school algebra and one year of high school geometry, or satisfactory test scores on courses at The University of Iowa (3-9 s.h.)

Physical education: four courses (4 s.h.)

B.S. students are exempt from this requirement.

Foreign language: high school courses, college courses, or satisfactory test scores (0-16 s.h.)

Foreign civilization and culture: one approved course (3 s.h.)

Historical perspectives: two approved courses (6 s.h.)

Humanities: The Interpretation of Literature and two approved courses (6 s.h.)

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

Quantitative or formal reasoning: one approved course (3-4 s.h.)

Social sciences: two approved courses (6 s.h.)

The Unified Program

The Unified Program (UP) is a four-semester series of integrated general education courses 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.

Rhetoric

All students must register for their assigned rhetoric course at their first or second registration, as required, and continue to enroll in rhetoric courses until the requirement is completed. Once enrolled in a rhetoric course, a student may not drop the course. No more than 8 semester hours at credit earned in rhetoric courses may be counted toward a bachelor's degree.

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

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

* By passing 101.1 and 101.2 Rhetoric (8 semester hours)
* By passing 103.3 Rhetoric (4 semester hours)
* By passing the speech test and 104.4 Rhetoric (2 semester hours)
* By passing the theme test and 360.35 Principles of Speech Communication (2 semester hours), or
* By passing both the speech and theme tests within one year.

Proficiency Examinations

Placement and exemption tests are given during the first week of classes for students registered in rhetoric courses. Exemption from part of all or part of the requirement may be awarded on the basis of these tests. Academic credit is not given. Further information can be found in the current Schedule of Classes.

Students with Documented Learning Disabilities

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

Mathematics

The General Education Requirement in mathematics may be satisfied through high school courses, satisfactory test scores, courses at The University of Iowa, or transfer courses, as specified below. This requirement should be met by the end of the student's first year in residence or during the first 30 semester hours at The University of Iowa.

High School Courses

Successful completion of two years of high school algebra and one year of high school geometry (or the equivalent in college preparatory mathematics) satisfies the mathematics requirement.

Satisfactory Test Scores

ACT: A score of 26 or above on the ACT mathematics test satisfies the mathematics requirement.

MPT: Achievement of a specific minimum score on The University of Iowa Mathematics Placement Test Level I (MPT I) satisfies the mathematics requirement.

Scores from the MPT I also are used to recommend placement in mathematics courses at Iowa. Academic credit is not awarded for passing the test.

Courses at The University of Iowa

Successful completion of the required mathematics course(s) at The University of Iowa satisfies the mathematics requirement.

These courses include:

22M:1 Basic Algebra I 3 s.h.
22M:2 Basic Algebra II 3 s.h.
22M:3 Basic Geometry 3 s.h.

Based on the student's date of first enrollment at The University of Iowa, grades received in these courses are computed in the grade-point averages, but the hours awarded are not included in hours earned toward graduation.

The following schedule specifies which courses students may be required to complete and whether or not credit earned in these courses counts toward graduation.

Date of first enrollment at The University of Iowa:

Before Fall 1985: 22M:1; credit counts toward graduation.

Fall 1989: 22M:1; credit does not count toward graduation.

Fall 1986: 22M:1, 22M:2; credit does not count toward graduation.

Fall 1987 and after: 22M:1, 22M:2, 22M:3; credit does not count toward graduation.

Students may be required to complete one, two, or three courses, depending upon their high school mathematics background and scores on the MPT I.
The mathematics requirement also may be satisfied by successful completion of Division of Mathematical Sciences courses more advanced than 22M:2 and 22M:3.

Transfer Courses
Transfer students who have not otherwise fulfilled the mathematics requirement will have met that requirement if they have passed a semester of college-level mathematics courses at other schools that are comparable to the courses used for this purpose at Iowa. Acceptance of courses is based on an evaluation of their content and level of difficulty. Transfer credit earned in courses equivalent to 22M:1, 22M:2, and 22M:3 does not count toward graduation according to the following schedule:

Courses equivalent to 22M:1 taken after summer 1985;
Courses equivalent to 22M:2 taken after summer 1986;
Courses equivalent to 22M:3 taken after summer 1987.

Transfer students who receive A.A. degrees from Iowa Area Community College participating in the 1981 Iowa Community College/Regents Articulation Agreement are considered to have fulfilled the mathematics requirement if certain conditions are met. See "Transfer Students with A.A. Degrees" under "General Education Requirements and Transfer Students" in this section of the Catalog.

Students with Documented Learning Disabilities
Students who have undergone formal assessment by the Office of Services for Persons with Disabilities and who are found to be learning disabled in mathematics may substitute other approved courses to satisfy the mathematics requirement. Credit earned in these courses does not count toward graduation. Such substitutions must be approved by the OAS.

Physical Education
Students satisfy the physical education requirement by completing four one-semester-hour courses in physical education skills under the satisfactory/fail grading option. B.S. students are exempt from this requirement.

Only courses 10:41 and 10:42, offered by the physical education skills program, may be used to satisfy the requirement. Sections under these numbers have activity or sports titles and levels of proficiency; 10:41 designates sections that meet for the first eight weeks of a semester or for the eight-week summer session; 10:42 designates those that meet for the second eight weeks of a semester.

If students register for the same course or take a more elementary one, the registrar awards a penalty for duplication or regression. In removing incompletes or taking for second-grade only options, students must complete or reize the same activity or sport at the same level.

Proficiency Examinations
Exemption from part or all of the requirement may be awarded for successful completion of comprehensive tests in specific physical education activities or sports. Academic credit is not awarded. Further information can be found in the current Schedule of Courses.

Transfer Students
Transfer students may satisfy this requirement by transferring 4 semester hours of college physical education course work (skills, sports, and activities), or by achieving junior standing (36 semester hours) before admission to The University of Iowa, or by transferring fewer than 4 semester hours of college physical education and by earning enough credits in physical education to meet the requirement. B.S. students are exempt from this requirement.

Older Students
Students who have passed their twenty-first birthday before their first enrollment at the University, as well as those who will have passed their twenty-eighth birthday before the day of their graduation, are excused from the physical education requirement.

Veterans
Veterans may be exempted from this requirement by presenting to the registrar official evidence of having completed a bachelor's degree training program in the branch of the armed forces.

Foreign Language
The foreign language requirement may be satisfied by high school courses, college courses, combination of high school and college courses, or by satisfactory performance on a proficiency examination. Students must meet standard A or standard B, depending on the kind and level of first enrollment and the degree they seek.

Standard A (four-semester requirement): Students seeking the B.A. degree must satisfy standard A regardless of their date of first enrollment at The University of Iowa. Students who entered at The University of Iowa for the first time in fall semester 1959 and after must satisfy standard A for all liberal arts degrees (B.A., B.B.A., B.G.S., B.L.S., and B.M.)

Standard B (two-semester requirement): Students seeking the B.S., B.T.A., B.G.S., and B.M. degrees who entered at The University of Iowa for the first time before fall semester 1996 and who graduate by August 1994 may satisfy either standard A or standard B.

B.S. candidates who entered at The University of Iowa for the first time before fall semester 1996 and who graduate by August 1997 are exempted from the foreign language requirement.
French: 9 - 1.2 or 9:100 followed by 9:11 - 9:12, or 9:105 - 9:12, or 9:105 - 9:36, or 9:105 - 9:16
Greek: 14:1 - 14:2 or 14:11 - 14:12
Hindi: 39:31 - 39:32 or 39:33 or 39:34
Italian: 18:1 - 18:2 or 18:11 or 18:12 or 18:103 - 18:11 or 18:12
Russian: 41:1 - 41:2 - 41:3 - 41:4
Spanish: 35:1 - 35:2 or 35:3 followed by 35:11 - 35:12 or 35:13 (35:8 may be taken in place of either 35:1 or 35:2)

Standard B
Chinese: 30:1 - 30:2 or 38:8
Danish: 131:11 - 131:12
French: 9 - 9.2 or 9:100 followed by 9:11 - 9:12 or 9:105 - 9:12, or 9:105 - 9:36, or 9:105 - 9:16
Greek: 14:1 - 14:2
Hindi: 39:1 - 39:2 or 39:8
Latin: 20:1 - 20:2 or 20:15 or 20:17
Portuguese: 38:1 - 38:2 or 38:100
Russian: 41:1 - 41:2 or 41:3 - 41:4
Spanish: 35:1 - 35:2 or 35:3 followed by 35:11 - 35:12 or 35:13 (35:8 may be taken in place of either 35:1 or 35:2)

Foreign Civilization and
Culture
Students must complete at least 3 semester hours from the courses listed below. Some courses used to satisfy this requirement also may be approved to satisfy, in part, the historical perspectives, humanism, or social sciences requirement.

195 Western Art and Culture before 1499
196 Western Art and Culture after 1499
113 Islamic Art and Civilization
114 Introduction to Asian Art
79:101 Education, Politics, and Culture of Mainland Southeast Asia
62:14 Artistic Cultures of the African peoples
194 French and Francophone Literature and Culture
197 French Civilization and Culture
13:17 German Heroic and Erotic Literature of the Middle Ages
13:19 Introduction to Modern German Literature
13:20 Introduction to Modern German Literature
13:21 German Cultural History
13:15 Contemporary German Civilization
13:18 The Third Reich and Literature
14:13 The Classical Views
16:1 Western Civilization to 1792
16:2 Western Civilization Since 1792
16:3 Western Civilizations of Asia
16:4 Civilizations of Asia
16:5 Survey of Ancient Near East and Greece
16:7 The Byzantine World and Rome
16:8 Medieval Civilization
16:11 Classical Latin America
16:12 Introduction to Modern Latin America
16:13 The Mexican Revolution
16:113 Economic and Social History of Medieval Europe
16:117 History of the Medieval Church
16:123 Society and Culture in the Italian Renaissance, 1250-1550
16:124 European Religious Reformations, 1520-1570
16:125 France from Renaissance to Revolution
16:126 Sixteenth-Century Europe
16:145 French Revolution and Napoleonic
16:146 France from Louis XIV to the Present
16:155 Germany, 1786-1914
16:156 Nationalism, Society, and Culture in Germany since 1814
16:157 Germany since 1914
16:171 Christian and Jewish Europe from Central Asia to Civil East Europe
1859-1959
16:172 The History of Central Europe, 1914-Present
16:173 Societies and Culture in India
16:174 History of Ancient and Traditional India
16:210 Imperial and Modern India
16:175 Traditional China
16:176 Modern China, 1800 to the Present
16:177 P recreational
16:188 Modern Japan
16:193 World Development Support
16:205 World Music I
16:212 Introduction to Soviet Government and Politics
16:214 Government and Politics of the Soviet Union and Eastern Europe
16:216 Modern China, 1800 to the Present
16:177 Japanese Modernist
16:188 Modern Japan
16:193 World Development Support
16:205 World Music I
16:212 Introduction to Soviet Government and Politics
16:214 Government and Politics of the Soviet Union and Eastern Europe
Natural Sciences

Students must complete at least 7 semester hours from the courses listed below. At least one course taken to fulfill this requirement must include a laboratory component. Courses with laboratory components are indicated by "(Lab)".

- 21 Introduction to Botany (Lab) 2 s.h.
- 45 Technology and Society 3 s.h.
- 45 Technology and Society (Lab) 3 s.h.
- 47 General Chemistry I 4 s.h.
- 48 General Chemistry II 3 s.h.
- 12 Principles of Chemistry I 3 s.h.
- 14 Principles of Chemistry II 3 s.h.
- 14 Principles of Chemistry Lab I (Lab) 2 s.h.
- 112 Human Biology 3 s.h.
- 112 Human Biology (Lab) 4 s.h.
- 112 Ecology and Evolution 3 s.h.
- 12 Evolution and the History of Life (Lab) 4 s.h.
- 125 Introduction to Geology (Lab) 4 s.h.
- 126 Evolution of the Earth (Lab) 4 s.h.
- 124 Lectures in Evolution and the History of Life 2 s.h.
- 122 Earth History and Resources (Lab) 4 s.h.
- 124 Introduction to Environmental Geology (Lab) 3-4 s.h.
- 293 Chemistry and Physics of the Environment 4 s.h.
- 298 Basic Physics 3 s.h.
- 298 Basic Physics (Lab) 4 s.h.
- 291 College Physics (Lab) 4 s.h.
- 292 College Physics (Lab) 4 s.h.
- 291 Introductory Physics II (Lab) 4 s.h.
- 298 Introductory Physics II (Lab) 4 s.h.
- 296 Modern Astronomy 3 s.h.
- 296 Modern Astronomy (Lab) 3 s.h.
- 296 General Astronomy (Lab) 4 s.h.
- 31 Introduction to Animal Biology (Lab) 4 s.h.
- 31 Principles of Animal Biology (Lab) 5 s.h.
- 370 Biology of the Brain 3 s.h.
- 370 Human Genetics 3 s.h.
- 370 Genetics and Evolution 3 s.h.
- 443 Introduction to Physical Geography (Lab) 4 s.h.
- 113 Human Origins 3 s.h.

Transfer Credit in Natural Sciences

Seven or more semester hours of acceptable academic work at another college or university satisfies the requirement. Students who transfer fewer than 7 semester hours of course work in natural sciences must complete one of the approved laboratory courses listed above if they transfer work does not include one.

Credit by Examination in Natural Sciences

Students who earn 8 semester hours on the CLP natural science general examinations have satisfied the requirement. Students who earn 3 or 4 semester hours by APP or CLEP applicable to the natural science area must complete a course with a laboratory component.

Quantitative or Formal Reasoning

The requirement may be satisfied by completing one of the courses listed below, or by completing a more advanced course that has one of the listed courses as a prerequisite.

- 171 Elementary Statistics and Intercourse 3 s.h.
- 212 Finite Mathematics 4 s.h.
- 211 Introduction to Calculus with Applications 4 s.h.
- 215 Mathematics for the Biological Sciences 4 s.h.
- 216 Calculus for the Biological Sciences 3 s.h.
- 217 Quantitative Methods I 4 s.h.
- 219 Elementary Function 3 s.h.
- 220 Calculus I 4 s.h.
- 220 Engineering Calculus I 4 s.h.
- 220 Accelerated Calculus I 4 s.h.
- 225-226 Quantitative Methods II 3 s.h.
- 225-226 Elementary Statistics and Intercourse 3 s.h.
- 225-226 Principles of Reasoning 3 s.h.
- 320-320 Theory and Practice of Semantology 5 s.h.
- 101 Language and Formal Reasoning 3 s.h.

This requirement must be met by the end of the student's second year in residence or during the first 80 semester hours of study at The University of Iowa. Students usually should have satisfied the mathematics requirement before beginning to meet this one.

Social Sciences

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

- 691 Principles of Microeconomics 9 s.h.
- 692 Principles of Macroeconomics 9 s.h.
- 710 Introduction to the Politics of Education 3 s.h.
- 167 Social Science Perspectives on Contemporary Africa 3 s.h.
- 160 Introduction to Afro-American Society 3 s.h.
- 160 Social Scientific Foundations of Communication 3 s.h.
- 355 Introduction to American Politics 3 s.h.
- 355 Introduction to Afri-American Politics 3 s.h.
- 350 Introduction to Political Thought and Political Action 3 s.h.
- 350 Introduction to Comparative Politics 3 s.h.
- 350 Introduction to Political Behavior 3 s.h.
- 350 Selection to World Politics 3 s.h.
- 350 African Development 3 s.h.
- 351 Elementary Psychology 3 s.h.
- 353 General Psychology (either 3 s.h. or 3.5 or 3.5 may be used) 4 s.h.
- 353 Introduction to Clinical Psychology 3 s.h.
- 351 Introduction to Child Psychology 3 s.h.
- 351 Introduction to Mentally Processes 3 s.h.
- 351 Introduction to Comparative Psychology 3 s.h.
- 351 Introduction to Sociology: Principles 3 s.h.
- 351 Introduction to Sociology: Problems 3 s.h.
- 351-351 Mass Media and Mass Society 3 s.h.
- 356 Communication Theory in Everyday Life 4 s.h.
- 411 Introduction to Human Geography 3 s.h.
- 411 Introduction to Social Geography 4 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
- 441-441 Environmental Science 3 s.h.
Departmental waivers of general education requirements: Each department in the college may waive up to 6 semester hours of General Education Requirements for its B.A. students and up to 7 semester hours for its B.S., B.F.A., and B.M. students in the area closest to or most relevant to its program. Approvals waivers are listed in the current Schedule of Courses.

Placement and Exemption Examinations for General Education
Satisfactory performance on tests administered at The University of Iowa may lead to full or partial exemption from the rhetoric, mathematics, physical education, or foreign language requirements. Academic credit is not awarded.
Exemption and/or academic credit may be awarded for satisfactory scores on examinations administered by the Advanced Placement Program (AP) and the College-Level Examination Program (CLEP) in the following General Education Requirement areas: rhetoric, foreign language, historical perspectives, humanities, natural sciences, quantitative or formal reasoning, and social sciences. Specific information about the application of credit for AP and CLEP is available from the Evaluation and Examination Service.

General Education Requirements and Transfer Students
Transfer Students without Degrees
Transfer students who have taken courses elsewhere that are similar to those approved for general education of Iowa may count these courses toward the General Education Requirements. Acceptance of these courses is shown on the student's advisement graduation program report. Transfer students bring to Iowa fewer than enough hours to meet a General Education requirement, they may use only approved courses to complete the remaining hours.
Transfer Students with A.A. Degrees
Transfer students who receive A.A. degrees from Iowa Area Community College in the 1981 Iowa Community College/Regents Articulation Agreement before the first enrollment at The University of Iowa are considered to have met all the General Education Requirements except foreign language; however, the program of study for which the A.A. degree was awarded must include the following:
A minimum of 60 semester hours (90 quarter hours) of credit acceptable for transfer. Mathematics courses, comparable to 22M:1 Basic Algebra I, 22M:2 Basic Algebra II, and 22M:3 Basic Geometry are not acceptable for transfer.
Completion of the agreed-upon group of courses at the community college.
Representatives from the community colleges and the Regents universities meet annually to evaluate the articulation agreement.

Students Returning to the UI with A.A. Degrees
Further students returning to The University of Iowa with A.A. degrees from Iowa Area Community Colleges participating in the 1981 Iowa Community College/Regents Articulation Agreement are considered to have met all the General Education Requirements except foreign language if the A.A. degree includes the requirements listed above for transfer students with A.A. degrees, and if either of the following conditions is met:
A minimum of 30 semester hours (45 quarter hours) of credit acceptable for transfer was completed at the community college before transferring to the University.
A period of at least three years has elapsed since the student was enrolled at The University of Iowa and a minimum of 15 semester hours (22 quarter hours) of variable credit was completed at the community college granting the degree.

Office of Community College Affiliates
Further information about the acceptability of transfer credit from Iowa Area Community Colleges is available in the Office of Community College Affiliates, N491 Lindysh Center.

Restrictions and Limits on Semester Hours Applied Toward a Degree
A maximum of 6 semester hours of credit with a grade of D (pass/fail) and 16 with a grade of S (satisfactory) is accepted toward the 124 semester hours required for graduation.
For students who enrolled at The University of Iowa for the first time before summer session 1987, a maximum of 16 semester hours of credit through the second-grade-only option is accepted for graduation. Students who entered the University of Iowa for the first time after spring semester 1987 may apply the second-grade-only option to a maximum of three courses.
A maximum of 20 semester hours of credit by correspondence from all approved sources is accepted toward the 124 semester hours required for graduation.
A maximum of 32 semester hours of credit by examination from all approved sources is accepted toward the 124 semester hours required for graduation.
A maximum of 30 semester hours of credit earned in other colleges at the University where the student is enrolled is accepted toward the 124 semester hours required for graduation. Undergraduate courses in the College of Education are exempt from this rule.
After a student has earned 62 semester hours of college credit from all sources, no more credit is accepted by transfer from a two-year college toward meeting the 124 semester hours required for graduation. If a student has earned more than 62 semester hours of credit from a two-year college, that credit and grade is used in computing the grade-point average and may be used to satisfy course requirements, but the credit does not count toward the total hours needed for graduation.
A maximum of 50 semester hours of credit from one academic department is accepted toward a B.A. or B.S., 62 toward the B.F.A., and 49 toward the B.G.S.
For B.S.G candidates, no more than 18 semester hours of advanced course work from any one department counts toward the 35-semester-hour advanced course requirement. Under the old B.S.G. requirements, no more than 20 semester hours of upper-level course work were included from any one department counting toward the 45-semester-hour upper-level course requirement.

Requirements for the Major
Specific requirements for majors offered in the College of Liberal Arts are detailed in the departmental sections of the Catalog. Students should confer with their advisors in outlining plans for a major.
Course work in the major department is not available on a pass/fail basis, except by departmental action for courses that are not to be applied toward the major. Courses required for the major in cognate areas and courses for the minor and/or major in a foreign language (icularly if applicable) may be taken pass/fail, if available, at the discretion of the department (though the major and/or double majors are described below.
A maximum of 16 semester hours of credit by examination may be awarded in the major.

Double Major
Students may meet the major requirements in more than one department and, if the departments award the same degree, may earn a single bachelor's degree with two or more majors. Double majors may not be awarded a second major or second program in the College of Liberal Arts.

Students who have fulfilled the requirements for a double major are exempt from the restriction that no course from the student’s major department may be used to satisfy the General Education Requirements. When a single department offers a degree in more than one subject area (such as physics and astronomy in Spanish and Portuguese), students may earn a double major, a minor, and a minor involving 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, mathematical sciences, 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 Second Major

Students who already have earned a B.A. or B.S. degree from The University of Iowa and who have not entered a graduate or professional program may complete the requirements for a second major. These students must complete the application and register as seniors (AM). Students who return to the University to complete a second major must meet only the requirements of that second major; they need not meet the residence requirement. It is the student’s responsibility to apply to the graduation analysis section of the Registrar’s Office upon completing the requirements for the second major so that a notation can be placed on the permanent record.

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

Minors

Liberal Arts Minors

Students graduating from the College of Liberal Arts may earn a minor in any degree-granting program in the college outside of their major field or in another college of the University. The minor may relate to the student’s major or be an area in which the student wishes to know an entirely different and separate interest from the major.

Requirements

The requirements outlined below are the minimum requirements for a minor in the College of Liberal Arts. Departmental requirements may be more specific and may include recommended courses, a greater number of semester hours, and prerequisites. 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 area.

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 transfer credit by examination is accepted toward the 12 semester hours of advanced work. Students should check with the minor department to identify acceptable courses.

Students must have a grade-point average of at least 2.0 in all work attempted in the minor department. No course accepted toward the minor may be taken pass/no-pass.

Guidelines

Students inform the Registrar’s Office 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 will be placed on the permanent record.

Each academic unit determines which of its approved courses are acceptable for a minor. Students seeking information about acceptable courses should contact the minor departmental office.

Some programs in degree programs that do not offer a bachelor’s degree offer minors. For example, minors are offered in aging studies, African-American studies, global studies, Latin-American studies, and women’s studies.

Students who already have earned a bachelor’s degree from The University of Iowa and who have not entered a graduate or professional program may complete the requirements for a minor and apply to the registrar to have a notation regarding the minor placed on the permanent record.

Restrictions

Students in the Bachelor of General Studies or Bachelor of Liberal Studies degree programs are not eligible to earn minors, since these are programs without departmental majors.

The following degree-granting programs do not offer minors: dental hygiene; elementary education, health occupations education; literature, science, and the arts; science education; and social studies.

Students who earn a bachelor’s degree in interdepartmental programs—such as ancient civilization or literature, science, and the arts—may not earn minors in areas that fall within the major degree field.

Courses from a student’s major department may not be applied toward a minor in an interdepartmental program. Exception: students earning minors in Latin American studies may count up to 6 semester hours from a major department toward the minor.

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 not use courses required in the engineering curriculum to satisfy the minor requirements in these three fields. (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.

A computer programming course

Business calculus (228H, 229H, 229M, 229M-1, 229M-3) 3 s.h.

Statistics (235H, 235M, 235ML, 229S, 229M) 3 s.h.

E6I Principles of Microeconomics 3 s.h.

E6I Principles of Macroeconomics 3 s.h.

E6I Introduction to Financial Accounting 3 s.h.

E6A Introduction to Managerial Cost Accounting 3 s.h.

E6G Introduction to Law 3 s.h.

*GM 100 Introduction to Marketing 3 s.h.

*GM 100 Introductory Financial Management 3 s.h.

*GM 100 Administrative Management 3 s.h.

*Must be taken in junior or senior year.

At least 15 semester hours of courses taken for the minor must be completed at The University of Iowa. A grade-point average of at least 2.0 is required in all courses taken for the minor and in all of these courses taken at Iowa.

Accelerated Professional Track

For superior students in the College of Liberal Arts who plan to continue at The University of Iowa for a Master of Business Administration (M.B.A.) degree, the accelerated professional track offers an alternative to the business minor. Students pursue an undergraduate degree in a field other than business while taking M.B.A. foundation courses. Upon receiving the bachelor’s degree, students enter the Graduate College to complete the M.B.A. degree. Further information is available from the Academic Programs Office.
Minor’s 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 final three weeks of the fall and spring semesters are the designated periods for registration. Students register according to a rotation based on the last three digits of their identification number and on the number of semester hours earned. The first four to five days of the rotation are reserved for students who have earned 25 or more semester hours; students with fewer than 25 semester hours are scheduled during the remainder of the period.

Late Registration

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

Classification of Students

<table>
<thead>
<tr>
<th>Rank</th>
<th>Semester hours earned</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>0-25</td>
<td>A1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>26-55</td>
<td>A2</td>
</tr>
<tr>
<td>Junior</td>
<td>56-89</td>
<td>A3</td>
</tr>
<tr>
<td>Senior</td>
<td>90 or more</td>
<td>A4</td>
</tr>
<tr>
<td>Special (nondegree) student</td>
<td>0-24</td>
<td>A5</td>
</tr>
<tr>
<td>Extension student</td>
<td>0-24</td>
<td>AE</td>
</tr>
</tbody>
</table>

Changes in Registration Initiated by the Student

Adding and Dropping Courses

During the registration period, students need only an adviser’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 approval of both the adviser and instructor. Courses may be dropped at any time during the first ten weeks of the semester or first five weeks of the summer session with the approval of the adviser and instructor.

Other than the beginning and end of the semester, and as are listed in the Schedule of Courses, may be added with the necessary signatures at any time during the first one-half of the course’s duration and dropped at any time during the first two-thirds of the course’s duration. Similar proportional deadlines operate during the usual eight-week summer session and for other special session courses.

Instructor’s Option to Drop for Nonattendance

To provide vacations in crowded classes, instructors may drop students who have not attended any class session during the first eight calendar days of the semester (first four days of the summer session); unless the students have offered reasons acceptable to the instructor, before the eighth calendar day of the course, for beginning the course late. This provision is for the benefit of students who otherwise would be unable to enroll in certain crowded classes. It should not be used where these circumstances do not exist. Such drop actions are made without the assignment of a mark of W.

Students are not dropped automatically from courses for nonattendance.

Auditing Courses

Students in the College of Liberal Arts may register as auditors if approval is granted by the instructor of the course and the adviser. Besides obtaining the signatures of the instructor and adviser, students must regis tat for zero credit in the course to be audited. Instructors assign the mark of R (required) if the student’s attendance and performance are satisfactory; if they are unsatisfactory, the mark of W (withdrawn) is assigned. Courses offered only for zero credit are graded W/R. Courses offered for zero credit as well as for credit hours, when taken for zero credit, are graded W/R. Course work with a mark of W/R does not meet college requirements and carry no credit toward graduation.

To register as an auditor for a course offered for credit, a student lists the course on the registration card and enters “Z” on the semester hours column. The instructor signs the special permission section on the back of the registration card. The adviser approves the audit registration by signing the registration card.

To add a course for audit after the opening of the semester, a student registers for zero credit on a Change of Registration form. Any change from credit to audit or from audit to credit must be made within the first three weeks of the semester (one and one-half weeks of the summer session), using a Change of Registration form and obtaining necessary signatures.

Maximum Schedule

The typical schedule is 14-16 semester hours in a regular semester, 6-8 semester hours in a summer session. The maximum permitted enrollment is 20 semester hours in a regular semester, 10 semester hours in a summer session.

Student Responsibility

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

Variable and Arranged Credit

Students who have registered for courses offered for variable or arranged credit may change the number of semester hours with the signatures of the instructor, adviser, and dean, as required, before the end of the tenth week of the semester (fifth week of the summer session).

Withdrawal of Registration

Students may withdraw registration at any time prior to the end of the twelfth week of the semester or sixth week of the summer session. No credit is given for the semester or session. Students who withdraw may not be reinstated after the deadline for that session. Withdrawal cards may be obtained in the Office of the Registrar.

Student Responsibility

Students must make changes in registration, obtain the proper signatures on the proper forms, and deliver the forms to the Registration Center before the deadlines. The confirmation that changes have been made is a revised computer printout generated at the Registration Center.
Grading System

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

<table>
<thead>
<tr>
<th>Grade (definition)</th>
<th>Grade points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A +</td>
<td>4.33</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A -</td>
<td>3.87</td>
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<td>B +</td>
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<td>B</td>
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<td>B -</td>
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<td>C +</td>
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<tr>
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<tr>
<td>C -</td>
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<tr>
<td>D +</td>
<td>1.33</td>
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<tr>
<td>D</td>
<td>1.00</td>
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<tr>
<td>D -</td>
<td>0.67</td>
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</tbody>
</table>

F (failing) 0

* I = incomplete
* P = pass
* N = no report
* S = satisfactory
* W = withdrawn

Not used in computing grade-point average.

Policies for Plus-Minus Grading

The marking system was expanded to include plus and minus grades effective with grades reported for the summer session 1998. The following policies govern the use of plus-minus grading in the College of Liberal Arts.

The use of plus and minus is optional. Departments and individual instructors are free to use the old system (with the grades of A, B, C, D, F) or the new system (which permits the assignment of plus and minus). Within either system, instructors may use any or all of the points on the grading scale.

The grading system used by an instructor must be applied to all students in a given class.

The grading system must be the same in all sections of a multiple-course sequence.

Instructors should announce at the beginning of the semester or at the first session the grading system to be used in the class.

Grade-Point Average (GPA)

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

(a) multiplying the number of semester hours in each course by the appropriate grade points;
(b) totaling the grade points earned to date; and
(c) dividing the sum in (b) by the number of hours undertaken, excluding courses in which grades of I, N, P, R, S, W, or F have been given.

Grades of F are included in hours attempted and are used in computing the GPA. Although grades of A + have a value of 4.03 in calculating a student’s GPA, the summary GPA displayed at the bottom of the permanent record are truncated so as not to exceed 4.00.

Incomplete (I)

Instructors may report a grade of I (incomplete) only if the unfulfilled part of the student’s work, in a course other than in research, thesis, or independent study, is substantial. The work is unsatisfactory for anyone acceptable to the instructor; and the student’s standing in the course is satisfactory. Courses may not be repeated in order to remove incompletes. Incomplete grades must be removed by completing the unfulfilled part of the work.

The work must be complete and submitted to the course instructor three and one-half weeks before the close of the examination period of the next session for which the student is registered, except that students with incompletes from the spring session of the preceding school year should complete the work during the succeeding summer session. Failure to remove the I by that date will result in an F being assigned for each incomplete.

No Report (O)

A mark of O is assigned by the Office of the Registrar when an instructor fails to report a grade.

The no-report designation appearing on a student’s transcript record must be changed to a valid grade according to the same rules that apply to incompletes. Failure to remove the O by 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 election courses on a Pass/Nonpass basis. The mark of P may be used in lieu of grades of A, A-, B+, B, B-, C+, C, and C- for students registered on a Pass/Nonpass basis who receive grades of D+, D, D-, or F. The grade of P will never count as hours earned for graduation.

Liberal Arts students taking courses in at least one of the following six areas of the University are subject to other rules concerning grades in those colleges:

Students from other colleges taking courses in the College of Liberal Arts are subject to Liberal Arts grading policies.

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

Restrictions
Students on academic probation may not use the FN grading option.

FN grading may be used in elective courses only. Courses used to satisfy the General Education Requirements may not be taken FN. Course work in the major department is not available on the FN basis, except by departmental action for courses that are not to be applied toward the major. Courses required for the major in cognate or related areas may be taken FN if available, at the discretion of the major department. No course accepted toward the minor may be taken FN.

A maximum of 15 semester hours of P grades from all cognates will be accepted toward the bachelor's degree. Transfer students admitted to the University with fewer than 36 semester hours of credit may earn the maximum of 15 semester hours of P grades. Those admitted with 36 or more semester hours are limited to eight semester hours.

A maximum of two FN courses may be taken in any semester.

Satisfactory/Fail Grading (SF)
Certain courses in the College of Liberal Arts are offered on a SF basis and are so designated in the Schedule of Courses. All students registered for such courses are given either an S or an F.

The grade of S is not used in computing the grade-point averages, but the grade of F is used. Credit with the grade of S may be applied toward the General Education Requirements or toward requirements in the major or minor. The grade of F does not count toward hours earned toward graduation. Special forms are not necessary to register for SF courses, since all students are automatically registered for 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, unless otherwise noted, if they have not satisfied the academic standards. Under the provisions of this option, the Office of the Registrar marks the permanent record to show that a particular course has been repeated. Both grades remain on the permanent record, but only the second grade is used in calculating the grade-point averages and hours earned.

Students who wish to use this option must first make an appointment with their advisor to discuss the possibility of repeating the course. If the course was taken for a grade, the student must decide, in consultation with their advisor, to retake the course or repeat the course. If the course was taken pass/no-pass, the student must decide whether to retake the course or repeat the course.

The second-grade-only option may be used only once per course.

The second-grade-only option may not be used if a student has repeated a course or if the student has repeated a course in which a grade of D, C-, or C was awarded.

The second-grade-only option may not be used if the second grade was assigned as a result of disciplinary action.

Students who enrol at The University of Iowa for the first time before summer semester 1978 are not eligible for this provision to a maximum of 16 semester hours. Students who enrol (or who have enrolled) at The University of Iowa for the first time after summer semester 1978 may apply this provision to a maximum of 16 semester hours.

Mid-Semester Reports
At mid-semester, instructors are asked to record grades for students whose work is below C. The Office of the Registrar advises students who are having difficulty and to individual students, but confidential grades are not recorded on the permanent record.

Grading Grievances
Grading grievances should be resolved with the instructor who assigned the disputed grade. If the student and instructor cannot resolve the grading grievance, the student may discuss it further with the departmental or college advisor, who may either recommend grading grievances to the Academic Senate and/or the Office of Academic Programs. The Office of Academic Programs publishes a handbook on grading grievances, which describes the procedures and restrictions.

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

Probation
Students must achieve the following minimum University of Iowa total cumulative grade-point averages or they will be placed (or continued) on probation.

- Freshmen (Fall semester hours): 1.00
- Sophomores (26-55 semester hours): 1.75
- Juniors (56-89 semester hours): 1.50
- Seniors (90 or more semester hours): 2.00

Students on probation are required to attend either their University of Iowa fall or total cumulative grade-point average equal or exceed the grade-point average designated above. Changes in academic status usually are made at the end of a semester or session.

The pass/no-pass (SF) grading option may not be used by students on academic probation.

Students on probation must attend a meeting of the Academic Senate, at which the student will be asked to sign an undertaking to attend a course in which they are enrolled.

Dismissal
Freshmen admitted on probation are subject to dismissal from the college for unsatisfactory scholarship after two semesters on probation. Freshmen admitted unconditionally (not on probation) are not subject to dismissal or probation. Continuing students are subject to dismissal or probation if they fail to meet the minimum standards for admission (see "Academic Requirements").

Dismissal
Students dismissed for unsatisfactory scholarship for the first time are not permitted to register again for a period of one year. Students dismissed a second time are not permitted to register for at least one year. Requests for reinstatement may be made in writing or in person and should be addressed to the assistant director of the Office of Academic Programs, 116 Schaeffer Hall. Reinstatement interviews are required.

Students who are permitted to register after the specified interval following a dismissal are registered on probation and usually are allowed two semesters to achieve good standing. Very poor academic work in the first semester of a reinstatement, however,
Right to Appeal

Students have the right to appeal a dismissal. Students dismissed in January must appeal in writing no later than 4:30 p.m. on the second day of spring semester classes. Students dismissed in June must appeal no later than July 1. Detailed information on the appeal procedure is available in the Office of Academic Programs. Appeals should be addressed to the Student Appeals Committee, Office of Academic Programs, 216 Schaefer Hall. The decision of the committee is final. Appeals are considered for revocation of dismissal for the fall or spring semesters only; no appeal is considered for revocation of dismissal for the summer session.

Notification and Records

Students placed on probation, continued on probation, or dismissed from the college may notice in writing to the associate dean for academic programs. The notation "academic probation" is placed on the permanent record of those students who have been placed or continued on probation. Students admitted on probation have the notation "admitted on probation" entered in their permanent record. "Not enrolled to register" is entered on the records of those students who have been dismissed from the college. When permission for reenrollment has been granted, the notation "permitted to register" is entered on their records.

Class Attendance, Final Examinations, and Student Conduct

Class Attendance

Individual instructors, course chairs, or department chairs are responsible for the policy regarding class attendance. Students are required to observe the regulations as announced for the course. However, University policy requires that students be permitted to make up examinations missed because of illness, mandatory religious seclusion, or other unavoidable circumstances or University activities.

Excused Absences

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

Student who are absent for medical or personal reasons are expected to present evidence to verify their reason. Students report absences from class of five days or less by completing a "Temporary Statement of Absence from Class" form, available at the Registration Center, and by presenting the form to their instructor. Students who are absent for more than five days may request in writing to the Registration Center to send notification of the absence to each instructor.

Final Examinations

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

For a more complete discussion of policies governing final examinations, see the college's Classroom Manual.

Student Conduct

Plagiarism and Cheating

Cases of plagiarism and cheating in the College are reported to the Office of Academic Programs. The instructor and departmental executive officer must examine the facts and make a written report of the facts to the dean and the action taken by the instructor and may submit a recommendation for additional disciplinary action.

The associate dean for academic programs or the Committee on Student Academic Conduct may impose, as the offense may warrant, the following or other penalties: disciplinary probation, suspension from the college, or recommendation of expulsion from the University to the president.

Forgery

University policy prohibits forgery. The Office of Academic Programs investigates incidents reported of forgery and provides the final action based on the investigation and the recommendation of the administrator.

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 may refer a student to the dean of student services for 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 on 12 or more semester hours of graded work and who have no hours of "incomplete" or "S" (tax report) are recognized by inclusion on the Dean's List for that semester.

Graduation Honors

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

To be eligible for either form of recognition, students must complete the final 60 semester hours in residence in the College of Liberal Arts at the University of Iowa, of which at least 45 semester hours must be completed prior to the student's final registration.

Graduation with Distinction

The Office of the Registrar certifies to the dean of the college the names of students eligible to graduate with distinction. The college awards degrees "with highest distinction" to students in the highest two percent of the graduating class, "with high distinction" to students in the next highest three percent, and "with distinction" to the next highest five percent. Ranking is based on students' grade-point averages for all college/freshman studies 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 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

To qualify for admission to the College of Liberal Arts, applicants must meet the college requirements outlined below and any special requirements for the programs of their choice.
The University of Iowa requires all freshmen and undergraduates regularly students to complete all or the American College Test (ACT) or the Scholastic Aptitude Test (SAT) and to submit their scores to the University before they register for classes. These examinations are used as a criterion for admission, for placement purposes, for advising, and for awarding University-administered scholarships.

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

Unit Requirements
Effective fall semester 1995, all entering freshmen and transfer students will be required to have completed the following set of high school courses or their equivalents in addition to other requirements described in the "Admission Requirements" section:

Four years of English/language arts, with emphasis on writing, speaking, and reading as well as understanding and appreciation of literature.

Three years of mathematics (two years of algebra and one year of geometry required).

Two years of a single foreign language.

Three years of natural science (two years must be chosen from among biology, chemistry, and physics).

Three years of the visual arts, performing arts, and/or humanities (choral, dance, drama, music, photography, studio arts, theatre, visual arts, and survey courses in the arts and humanities).

A fourth year of mathematics (analytic geometry, trigonometry, or calculus). A fourth year of a single foreign language.

Applicants who do not meet these requirements will be offered conditional admission and will be required to make up deficiencies in credit toward graduation before matriculation at The University of Iowa.

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

Entering Freshmen
Applicants seeking admission as entering freshmen must have the high school record 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 immediately upon the completion of the junior year in high school, but admission is not final until receipt of the final transcript and certification of high school graduation.

Residents of Iowa
Graduates of approved Iowa high schools who are in the upper one-half of their graduating class who present an ACT composite score of 24 or above (or an SAT combined score of 1080 or above) are generally admitted after certification of graduation. Applicants who do not meet these standards may be considered for admission based on other characteristics that indicate definite promise of success. At the discretion of the admission officer, such applicants may be admitted unconditionally, on probation, required to enroll for a trial period during a preceding summer session, or denied admission.

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

Nonresidents
Graduates of accredited high schools in other states who are in the upper 20 percent of their graduating class or who present an ACT composite score of 25 or above (or an SAT composite score of 1120 or above) generally are admitted after certification of graduation. Applicants who do not meet these standards may be considered for admission based on other characteristics that indicate definite promise of success. At the discretion of the admission officer, such applicants may be admitted unconditionally, on probation, required to enroll for a trial period during a preceding summer session, or denied admission.

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

Admission without High School Graduation
Applicants who are not high school graduates must submit all data required above, take examinations to demonstrate general competence to do college work, and must take examinations that demonstrate their general 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 Credit Given by Interinstitutional Institutions published by the American Association of Collegiate Registrars and Admissions 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 letters of the College Liberal Arts may require to support their applications for admission.

Transfer applicants who have a minimum of 24 semester hours of grade credit from a regionally accredited college or university and who have maintained a grade-point average of 2.50 (based on a 4-point system) on all college work previously attempted, will be admitted.

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

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

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

Transfer Students from Nonaccredited Colleges
The College of Liberal Arts is in the process of recognizing credit from nonaccredited colleges. Applicants are considered on a conditional basis and provide a means for the validation of some part of the credit. The validation period is not less than one semester and ordinarily is 4 full academic years. The college reserves to the student the terms of the redistribution process as the time of conditional admission. Students from nonaccredited colleges are considered on their own merits, and admissions or rejections are at the discretion of the admissions officer.

Non-native Speakers of English
Every student whose native language is not English must have a command of oral and written English adequate for University work. All applicants to the University...
whose native language is not English must present scores on the Test of English as a Foreign Language (TOEFL) and, along with their applications for admission and supporting academic credentials, meet the requirements from this policy are granted for persons who have obtained a baccalaureate or equivalent degree from a university in the United States, the United Kingdom, Canada (excluding French Quebec), Africa (English-speaking), Australia, or New Zealand.

Applicants who present TOEFL scores below 550 are considered for admission to the College of Liberal Arts. Admitted applicants whose TOEFL scores are 500 or above 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 evaluated using on-campus testing if such evaluation warrants. Applicants are required to enroll either in credit-bearing courses in English as a Foreign Language offered through the Department of Linguistics or in the Iowa Summer English Program until their language proficiency reaches the appropriate level. Once such proficiency has been established, students are allowed to take a full academic course load, exclusive of English as a Foreign Language courses. Such students may begin their academic course work along with their written recommendation of the coordinator of English as a Foreign Language for non-native speakers of English are described in this section of the Catalog.

Special (Nondegree) Students

Students may be admitted to the college as nondegree candidates. These students are classified as special students (AS) and may enroll in courses for personal enrichment. In order to prepare for admission to professional or graduate college, or to complete a specified program, students enrolled in courses as special students are subject to the rules of the college for academic privacy and dismissal. Courses taken as a special student may not be used to satisfy the core curriculum requirement for the baccalaureate degree from the College of Liberal Arts.

Credit for Military Service

The admissions officer is authorized to send transcripts from the military services according to the recommendations contained in the American Council on Education’s Guide to the Evaluation of Experiences in the Armed Forces, with the understanding that students are not required to follow such recommendations and that 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.

Credit by Examination

A maximum of 30 semester hours of credit for examination may be awarded toward the 124 semester hours required for graduation. Credit by examination may be granted in elective credit or it may be applied toward the General Education Requirements or requirements in the major or minor.

Placement and Exemption Examinations for General Education

Full or partial exemption from the requirements in rhetoric, mathematics, physical education, or foreign language may be awarded for satisfactory performance on tests administered at the University of Iowa. In addition, exemption and academic credit may be awarded in most general education areas for satisfactory scores on examinations administered by the Advanced Placement Program (AP) 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 15 semester hours. Credit toward graduation is awarded to foreign language majors only for passing examinations covering the third- and fourth-semester level (or above).

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

Advanced Placement Program (APP)

Students who pursue college-level experience while still in high school may use the AP testing program to demonstrate their level of achievement. This program was developed 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 if either course credit or advanced placement is warranted. Credit awarded through APP may be applied to the General Education Requirements, requirements in the major or minor, or to elective credit.

Specific credit policies and further information can be obtained from the Evaluation and Examination Service.

College-Level Examination Program (CLEP)

CLEP is an achievement testing program offered by the College Board that allows students to demonstrate college-level competence they may have achieved outside of formal college instructional programs. General examinations cover broad content areas such as the humanities, natural science, and social science, subject examinations cover more narrow ranges of content as typically taught 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 Requirement in the area(s) covered by the examination(s). 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 their first enrollment so that test results can be used to plan their first semester at the university.

Specific credit policies and further information can be obtained from the Evaluation and Examination Service.

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 credit earned at nonaccredited programs and the department concerned should be consulted on approval to take the appropriate examinations.

Nondepartmental Courses

Courses numbered 10 and 11 are nondepartmental courses principally to satisfy the General Education Requirements.

1.6 b.

1.6 c.

3.8 a.

3.8 b.

4.6 a.

4.6 b.

4.6 c.

4.6 d.

4.6 e.

4.6 f.

4.6 g.

4.6 h.
AEROSPACE MILITARY STUDIES

Head: Lt. Col. Gary L. Speary
Professor: Lt. Col. Gary L. Speary
Assistant Professor: Capt. Thomas Bachman
Capt. W. Keith Haxby

The Department of Aerospace Military Studies offers courses that prepare students for commissioning as Second Lieutenants in the United States Air Force.

APROTC is an elective course, open to all cadets, at the Department of Aerospace Military Studies. The amount of credit earned for APROTC is equal to the credit earned for each hour spent on aircrew training.

APROTC cadets must complete all APROTC requirements for a course as well as certain courses specified by the U.S. Air Force.

Prior to commissioning, all APROTC cadets must complete a course in computer science.

All scholarships are merit-based and are awarded by the AAFES Scholarship Board. Cadets are eligible for both objective and subjective criteria. Students are directed to the proper source of aid at the Aeronautics Department.

Professional Officer Course

The professional officer course (POC) consists of three 3-semester-hour APROTC courses and 31A900W Leadership Laboratory. Cadets accepted into the POC must commit to serve a minimum of four years as a U.S. Air Force officer.

Leadership Laboratory

Leadership laboratory is designed to develop leadership skills that will be required in the Air Force. This course is designed to prepare leadership training experiences that will improve cadets' ability to perform as U.S. Air Force officers.

Field Training

All POC cadets must successfully complete field training at the U.S. Air Force Base during summer, normally between the sophomore and junior years. There are two types of field training: a four-week course for cadets in the fourth and fifth years of training at the U.S. Air Force Academy, and a ten-week course for second-year program appraisals.

Field training consists of aircraft, simulator, career, and survival training. Cadets are evaluated in terms of their performance in these areas. Cadets who do not meet the standards may be returned to their regular training.

Special Activities

The Cadet Corps sponsors many social events, including informal parties, formal dances, and a military ball.

Financial Assistance

All scholarships are merit-based and are awarded by the AAFES Scholarship Board. Cadets are eligible for both objective and subjective criteria. Students are directed to the proper source of aid at the Aeronautics Department.
undergraduate program also offers courses examining the African heritages and present relationships of African-Americans to Africans in other lands. Because a thorough understanding of African-American culture cannot be achieved through study restricted to the perspective of a specific discipline, all students in this program are required to pursue courses in both humanities and social sciences. Although the program at present emphasizes history and literature, the African-American World Studies Program continually expands program perspectives by developing courses that broaden the knowledge drawn from many disciplines in the humanities and social sciences.

The program originated in 1969 through courses intended to facilitate awareness of the role of African-Americans in the development of the United States and designed to promote understanding of the present conditions and concerns of Black Americans. Since then, these courses have been organized into a curriculum that includes a program leading to an undergraduate minor in African-American studies, a Master of Arts degree in African-American studies, and concentrations of African-American studies in programs leading to a B.A., M.A., or Ph.D. in Afro-American Studies. Students seeking Ph.D. degrees in English or history also can organize courses in Afro-American literature or Afro-American history into a special field or cognate area.

Originally called the African Studies Program, the African-American Studies Program was named in 1982 to more clearly define the program's purpose and scope. The program aims to teach the philosophy and breadth of the program.

Although most of the students in the Ph.D. program are preparing to work in colleges or universities, those employed by the B.A. and M.A. programs provide valuable backgrounds for many other students who are training for careers in community work, public school teaching, religious, government, and political science. In short, the African-American World Studies Program is training important to any individual whose career will require understanding and knowledge of Blacks.

Undergraduate Program


Minor

The African-American World Studies Program offers a minor in Afro-American studies to undergraduate students. The requirements conform to the general requirements for minors in the College of Liberal Arts. In consultation with their advisor, students select 15 semester hours (five courses) in African-American world studies courses. Four of these courses must be numbered 129:160 or above and must be taken at The University of Iowa. Course lists are available in the office of African-American World Studies (303 English-Philosophy Building), in the Liberal Arts Office of Academic Programs, and in the offices of most departments.

Advisers in the program recommend that students seeking a minor in Afro-American studies select an introductory course from the following: 129:011, 129:030, 129:031, 129:061. Advisers also recommend 129:116 or 129:117, and 129:160 or 129:166 or 129:168 as two of the upper-level courses.

Graduate Programs

Master of Arts

The interdisciplinary curriculum leading to a Master of Arts degree in African-American studies provides an intensive, organized, graduate-level examination of African-American culture and experience. Such a program especially benefits individuals preparing for community work, 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 30 postbaccalaureate semester hours. Requirements include: 129:241 Introduction to Research in Afro-American Culture (3 s.h.), 129:312 Advanced Research in Afro-American Culture (thesis-project, 4 s.h.), and 12 semester hours of required courses in African-American studies.

Most students will be required to earn 6 semester hours in literature/history by taking 129:116-117 African-American Literature I and II or two of the following: 129:160 African-American History 1600-1800, 129:166 African-American History 1800-1914, 129:168 African-American History 1914-Present. Students who have earned undergraduate or graduate credit for a year-long survey of either Afro-American literature or Afro-American history will satisfy the literature/history requirement by studying the area in which they have no credit.

Students who have earned neither undergraduate nor graduate credit in Afro-American literature and Afro-American history may be required to complete both 129:116-117 Afro-American Literature I and II and two of the following: 129:160 African-American History 1600-1800, 129:166 African-American History 1800-1914, 129:168 African-American History 1914-Present. All 129:168 Afro-American History 1914-Present, with the only 6 semester hours of credit allowed toward the M.A. degree. A student who has completed year-long undergraduate or graduate surveys in both Afro-American literature and Afro-American history will be permitted to satisfy the literature/history requirement by selecting 6 semester hours of Afro-American studies electives approved by the adviser.

To complete the curriculum, students select 15 semester hours of electives in consultation with their advisees. Recommended are courses in Afro-American music, Afro-American art, or Afro-American art. All 15 semester hours of electives may be selected from the courses numbered above 129:100 in the course list below. Students should consult an adviser in the program to determine which courses numbered above 129:100 will be approved for the M.A. degree. But since 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 selected: doctoral education and development (African-American world studies, possible field work), social work, anthropology, education, English, geography, history, and sociology. Students are encouraged to select at least one of the courses in the M.A. curriculum from this list.

Language/Tool Requirements

No foreign language or tool is required for the Master of Arts program in Afro-American studies, but students considering doctoral study in another field are encouraged to complete one language requirement for that 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 faculty committee of members who teach courses in the African-American World Studies Program. A component of the comprehensive examination is based on a reading list provided and approved by the African-American world studies faculty. An oral examination may be required as a follow-up to the written one.

Thesis/Project Requirements

A thesis is not required, but it is urged, for a Master of Arts degree in
Afro-American studies. If a student elects to write a thesis, they must explore a topic of Afro-American culture and/or experience as in-depth research more than one discipline. The maximum credit for a thesis is 6 semester hours. Students who do not prepare a thesis are required to develop, in consultation with an advisor, a project related to Afro-American culture and/or experience. When completed, this project might be presented and defended before an appropriate committee in Afro-American studies. Credit for the "thesis or project quality is earned through registration in 120.312 Advanced Research in Afro-American Culture.

Admission
In addition to the general requirements of the Graduate College, unconditional graduate admission to the African-American World Studies Program requires that a student 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 2.70 in previous college courses in Afro-American studies. Applicants may be asked to take, without credit toward the master's degree, courses needed to remedy deficiencies in undergraduate preparation. Applicants for admission are expected to provide evidence of recommendations 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 within M.A. Program in American Studies
A student concentrating in African-American Studies within a Master of Arts program in American Studies usually is preparing for a career as a research scholar or a college/university teacher, and proposes to undertake doctoral work in American Studies. As part of the program, students should consult with both the chair of African-American world studies and the chair of American studies.

For other requirements, see "American Studies" in this section of the Catalog.

Concentration within Ph.D. Program in American Studies
Generally, a student seeking a Ph.D. in American studies is preparing to be a teacher or research scholar at the college or university level. Ordinarily, students seeking a concentration in African-American studies must take a minimum of 36 semester hours of graduate study in African-American world studies. They must explore a topic of interest, make readings in previous literature, and undertake research in a topic of African-American culture. An African-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 the American world studies and the chair of American studies for more information.

Cognate Areas, Special Fields
It is possible for students to take concentrations in African-American studies courses as cognate areas or special fields in Ph.D. programs in history, English, and other disciplines. For further details, consult an advisor in African-American world studies.

Cocurricular Activities
Black Kaleidoscope
The African-American World Studies Program promotes knowledge and appreciation of Black culture by sponsoring Black Kaleidoscope, a series of lectures and discussions by scholars and artists distinguished in Black culture.

Institute in Afro-American Culture
From 1968 through 1976, the University of Iowa served as a national center for the Institute in African-American World Studies for college and university teachers. The institute, which brought renowned artists and scholars to the campus, focused on topics such as the Harlem Renaissance, Richard Wright, W.E.B. DuBois, 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 as a 3-semester-hour course offered at the same time as the institute and on the current year's topic. The program plans to offer institutes in future summers.

Black Action Theater
Academically sponsored through the African-American World Studies Program, Black Action Theater gives participate 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 educational and cultural artifacts and exhibits of Black culture, providing cultural enrichment for Black people of the Iowa City community and a cultural meeting place for Black students. It also attempts to provide a knowledge of Black culture that will promote interracial understanding among all members of the University community. See "Cultural Centers" in the "Student Life at Iowa" section of the Catalog.

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

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

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

Anthropology 112.51 Sociology of the Third World 3 s.h.
Art and Art History 1H.190 Themes in Art History: African Cultures 3 s.h.
1H.202 Survival: Problems in African Art 2-3 s.h.
Business Administration 3J.202 Collective Bargaining 3 s.h.
Comparative Literature 49.50 Non-Western Literary Traditions 3 s.h.
49.50 Cultural Identity in Caribbean Literature 3 s.h.
Economics 61.137 Problems in Urban Economics 3 s.h.
61.285 Development Policy and Planning in Third World Countries 3 s.h.
Education 7F.204 Education in the Third World 3-3.5 s.h.
7F.230 Educational Sociology 3-3.5 s.h.
AFRICAN STUDIES

Coordinator: John Else (Social Work)
Committee members: Elizabeth Avius (International Education and Services), Joseph Acosta (Journalism and Mass Communication), Joel Barber (Public Affairs), Seraphine Barik (College of Arts and Humanities Program), Jacqueline Bassenger (French and Italian), Pamela Browne (Nursing), Jacques Gablin (History), John Howell (University Librarian), Michael Nwachukwu (Geography), Peter Nathan (History), Gilbert-African-American World Studies), Caroline Seaver (Art and Art History), Mark Squire (Geography), Jonathan Wallis (History).

As Africa affects more attention is world affairs and its importance to the world's economy increases, America is seeing increased familiarity with the historical and contemporary forces that shape the continent. The African Studies Program helps students gain a broader understanding of traditional and contemporary life in Africa and provides an environment 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 Studio 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 tiny contemporary African writers who participate in the International Writing Program strengthen African studies, as do African scholars who come to campus through the program's foreign development programming. The University of Iowa's African Studies Program has resulted in development of an exchange with the University of Louvain, and the University of Louvain has established in Louvain with funds from the United States Information Service grants.

Certificate Program

The African Studies Program provides undergraduate students with an interdisciplinary background in the study of Africa that complements a departmental major and serves as a step toward possible graduate study of Africa.

The curriculum for our undergraduate certificate in African studies includes 21 semester hours of course work. These are divided into three levels of study: introductory, intermediate, and advanced. Undergraduate students pursuing the certificate take 4.5 Contemporary Africa as an introduction to the continent and its history, art, literature, politics, and peoples, as an introductory introduction to the Africanized faculty at Iowa. This is followed by 1.5 semester hours of intensive (300-level) lecture courses, with at least one course from each of four areas of study: literature, art, history, and social science. Savior

students complete the center of study with a seminar or an advanced course on Africa.

Course Requirements

Full descriptions of all 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 Africa. Languages currently taught at The University of Iowa that meet this requirement are French, Portuguese, and Spanish.

Introductory Course

4.5 Contemporary Africa 3 s.h.

Intermediate Courses

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

LITERATURE

RG 114/124 The Literature of the African People 3 s.h.
129A 103 African Drama 3 s.h.
128H 110/111 African Literature 3 s.h.
128H 129/130 Modern African Novel 3 s.h.
128E 129/135 Francophone Literature of the African Diaspora 3 s.h.

ART

147 126/137 109 Art of West Africa 3 s.h.
148 136/138 110 Art of Central Africa 3 s.h.
191 150 African Art History: African Art 3 s.h.
162 160 Summer: Problems in African Art 3 s.h.

IDEOLOGY

129 135 History of Pre-Colombian 3 s.h.
162 129/130 134 History of Colonial Africa 3 s.h.
164 129/130 170 Modern African History 3 s.h.

SOCIAL SCIENCES

30 146/146 161 African Development 3 s.h.
31 150 The Politics of Southern Africa 3 s.h.

ELECTIVES

Three semester hours in any of the four 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:

471 110 African News and Culture
102 102 Seminar: Problems in African Art
129 255/257 223 Three African Writers
AGING STUDIES
Coordinator: Winifred McLean
Advisory committee: Lorraine Doehman (Human Development), Harold W. Brown (Sociology), Charles Fitch (Medicine), Atwood (Geriatric Education), Alan Weiss (Sociology), James Jackson (Graduate College), Diane Leslie (Geriatric Science), James Living (Human Affairs, Human Development), Carol Lam (Law), Richard Nyflin (Sociology), Bernard Grob (Medicine), Winnifred Mars (Medicine), I. A. LoPresti (Sociology), Jerome B. Taylor (Hospital and Health Administration), Gerald Rubin (Hospital Administration), Richard J. Simon (Psychology), Bernard Schwartz (Pharmacy), Martin Traney (Social Work), Thomas H. W. Furst (Social Work)

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

Program Requirements

The Aging Studies Program involves all approved semester hours of course work related to aging at the 100 level or above and leads to a certificate in Aging Studies. This course work is defined as courses within the University that focus principally on older persons, the aging process, and its methods, rather than the technologif of whose target is the elderly or aging.

Students are required to take an introductory course in Aging Studies and complete either a research project or a practicum course with the approval of their major department. Students may do only course work in their major or professional program of study. Six 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 first 9 semester hours of the program are completed.

Eligibility

The program is open to all interested graduate, upper-level undergraduate (must have completed 6 semester hours), and special status students whose career interests and needs are served by completing the program. Students are good standing at the above-mentioned levels may establish plans of study with the Aging Studies Program coordinator, who works with them and their advisors to choose a plan of study that is appropriate for their academic program and career interest.

Students should contact the aging studies coordinator to develop an appropriate study plan. The program includes required courses and those 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 fulfilling the requirements for the aging studies Program, the coordinator notifies the registrar, who records completion of the program on the student’s transcript.

Minor

Undergraduate students at the colleges of Liberal Arts, Business Administration, Nursing, Engineering, or Education may complete a minor in aging studies by taking 15 semester hours in courses outside of their major program or college that are approved by the program. The minor must be approved by the student’s college or department. At least 12 of the 15 semester hours must be taken in advanced courses (100 level or above) at The University of Iowa.

Courses

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

Introductory Courses

All students must take at least one and no more than two introductory courses. The introductory courses accepted in the program include:

17:180 Basic Aspects of Aging
34:130 Aging and Society
42:08 Multidisciplinary Perspectives on Aging
96:29 Introduction to Gerontology

Practicum and Research Courses

At least 3 and no more than 6 semester hours of credit for a practicum or research course is accepted for the Aging Studies Program. Practicum and research courses include:

17:000 Cooperative Education Internship
17:195 Home Economics Internship
42:190 Field Work in Gerontology
96:133 Nursing Practice in Chronic Illness
96:145 Leadership, Management, and Research in Nursing Practice

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

Elective Courses

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

Anthropology

113:136 Aging A Cross-Cultural Perspective

Biology

3P:271 Seminar: Cell Physiology

Communication

70:201 Topics Seminar in Communication Education

Dentistry

112:145 Introduction to Geriatric Dentistry

Health and Hospital Administration

80:208 Long-Term Care Administration

Home Economics

17:211 Individual and Family Development: Life Span (partial credit)
17:219 Seminar Family or Consumer Studies: Aging and the Family

Internal Medicine

78:905 Geriatrics Seminars

Nursing

96:114 Loss and Death in Clinical Nursing Practice
96:136 Nurturative and Psychopathological Aspects of Aging
96:201 Gerontological Nursing II

Physical Education

27:121 Physical Activity and Aging

Recreation Education

104:146 Contemporary Issues in Recreation and Leisure
104:152 Aging and Leisure

Religion

22:123 Introduction to Biomedical Ethics (partial credit)
32:193 Suffering, Death, and Faith

Sociology

34:136 Social Psychology of Aging
34:250 Sociology of the Family (partial credit)
34:253 Aging and Human Development

Social Work

42:114 Aging and Social Work
42:185 Social Policy and the Elderly
42:190 Selected Aspects of Social Work and Social Welfare
42:252 Social Policy Issues in Health Care (partial credit)
42:280 Human Behavior: Selected Aspects

Further information on the Aging Studies Program is available from the Center for International and Comparative Studies, 405 Jefferson Building, The University of Iowa, Iowa City, Iowa 52242.
American Studies

Bachelor of Arts

The B.A. degree in American studies provides broad training in cultural analysis and criticism. Although the program requires no explicitly vocational training, the program provides preparation for a career in business, education, government, journalism, or social service, and advanced studies in the humanities, the social sciences, theology, or business 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, consisting courses in American history or American studies. American history or American studies courses in programs with American studies programs may be counted toward the requirements.

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:

- American Studies core courses (12 courses, including 45-1 and 45-5) 12 s.h.
- American Studies seminars (2 courses) 6 s.h.
- American Studies electives (6 courses in American studies or other departments) 18 s.h.
- Total 36 s.h.

The master's thesis program offers students the opportunity to pursue special interests in individual, independent research. Hours earned in American Studies must be earned in the College of Liberal Arts Honor's Program.

Under the guidance of the undergraduate honors advisor, the honors candidate directs a research project using primary sources. Project descriptions should be submitted, with the approval of the honors advisor, by the end of the student's junior year. Each candidate directs the project under the guidance of a supervising faculty member and may enroll for up to 6 semester hours in 45-100 Project Honor. Results of the research projects 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. The candidate is responsible for the final submission. The candidate may select the third faculty member. The committee's decision may result in an oral defense of the final project, usually in the twelfth week of the student's last semester.

Minor

Students interested in a minor in American studies should consult members of the minor. The minor requires a minimum of 15 semester hours of credit in American studies. At least 12 of the 15 semester hours must be taken at The University of Iowa in courses numbered 45-100 and above. At least 45-56 can also count toward this requirement.

A joint program leading to the M.A. degree in American studies and the Ph.D. degree from the College of Law provides a broad cultural context for the study and practice of law. Tauber programs in American students and students in professional fields, including social work and journalism.

Doctor of Philosophy

The Ph.D. program in American studies requires a minimum of 67 semester hours of course work, preparing the candidate in four areas: a core of American studies courses in interdisciplinary or professional programs, and substantial course work in three major fields. Requirements include:

- Theory and Practice in American Studies (445:200-201) 6 s.h.
- First field (4 courses) 16 s.h.
- Second field (4 courses) 16 s.h.
- Third field (4 courses) 16 s.h.

Although permitted considerable flexibility in planning a program, the American studies student must meet certain basic requirements. One is that through course work and basic electives students address the cultural diversity of American life. Since race and gender issues will be specifically explored on the real portion of the comprehensive examination, some course work is required in African-American world studies and women's studies. Students also must pass a comprehensive exam that requires a particular period of American cultural history. Hence, history is taken either at home or in the other center of all doctoral programs. Finally, students must complete significant course work in American studies itself. Graduate students normally must pass 45-380-390 Thesis and Practice in American Studies courses consecutively during the first year of graduate study. Three additional graduate
Courses in American studies are required.

These courses provide background for a position paper that is required for the Ph.D. comprehensive examination.

Admission to Ph.D. Candidacy

A student's plan of study and evaluation by instructors should be submitted to the American studies faculty by the end of the second year. The Ph.D. candidacy is to be granted in the third year.

Comprehensive Examinations

Each student must take at least 6 courses (18 semester hours), including tutorials. In addition to these, students should consider covering one only a body of material, a full period, interpretive theory, comparative literature, or a theme and courses in women's studies and African-American women's studies, but also a foreign language, media production skills (e.g., photography, video), and internships. Comprehensive examination of two of the fields is through a two-hour written examination. The third is by the comprehensive examination on the position paper, the two written examinations, and the annotated bibliography.

Thesis

The final requirement for the Ph.D. in American studies is a presentation of an acceptable thesis on a topic whose investigation involves more than one field or discipline. The candidate may petition to present a creative thesis, such as fiction, autobiography, poetry, or critical composition, given a critical analysis of the cultural experiences the thesis relates to. That thesis, therefore, must be granted only by the American-studies-studies committee.

Internships

Qualified graduate students in American studies can arrange internships with the State Historical Society of Iowa, the Iowa State University Museum, the National Geographic, the Metropolitan Museum of Art, the Library of Congress, the Chicago Historical Society, the Chicago Cultural Center, the National Endowment for the Arts, and the National Endowment for the Humanities.

For Undergraduates and Graduates

14.51 American Studies

3.0

14.52 Social History and the American Scene

3.0

14.53 American Society

3.0

14.54 American Studies: An Overview

3.0

14.55 Urban Culture and America Before 1865

4.0

The term "American" is an ambiguous concept, which may refer to the United States, the English-speaking world, or to the history of America. This course is designed to answer many questions, but is primarily directed to problems of national culture and social structure, and to the psychology of civilization. Same as 4.51.
ANTHROPOLOGY

Undergraduate Program

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

The major requires at least 30 semester hours of course work in anthropology, plus:

- 133 Introduction to the Study of Culture and Society 3 s.h.
- 133 Introduction to Prehistory 3 s.h.
- 133 Human Origins 3 s.h.
- 133 Language and Human Behavior 3 s.h.

In addition, students must take one course in ethnology, one course in social science, and one social science course in social institutions. The remaining semester hours should be selected in consultation with the advisor.

Anthropologists acquire a wide range of choices, including courses dealing with language and culture, social problems of underdeveloped areas, economic anthropology, religious activity in folk and tribal settings, primitive art, physical anthropology, environment and cultures, and prehistory. Specialization is encouraged in the undergraduate program, which is intended to give students the broadest possible cross-cultural background necessary for professional work in such related areas as sociology, linguistics, geography, history, psychology, zoology, and statistics. Students also are encouraged to participate in archaeological field and laboratory research and in physical anthropology research.

Honors

The honors program in anthropology is open to students with minimum cumulative grade-point averages of 3.20 overall and 3.20 in anthropology. In addition to the register requirements for a major in anthropology, honors candidates complete the senior or graduate-level course in the anthropology or as a related department at the honors research project. For additional information, consult the honors advisor in the Department of Anthropology.

Field Research

Opportunities are available for students to participate in archaeological field research in central Mexico or various sites in the Midwest. Under the direction of University anthropologists, participating students acquire skills in data recovery and interpretive techniques.

Graduate Programs

Master of Arts

The M.A. program is general in nature, designed to prepare students to deal with any aspect of anthropology at an introductory level.

The department offers the M.A. degree with or without thesis. The program without thesis precedes consideration for admission to the Ph.D. program.

The number of semester hours credit required for the M.A. with thesis may vary from 30 to 36, depending on the student's previous academic background.

The department also offers a 36-semester-hour M.A. degree without thesis in anthropology with a concentration in museum training. The following are the core areas:

- 134 Seminar: Social Anthropology
- 134 Seminar: Anthropological Theory

These four courses:

135.171 Ethnological Linguistics
135.108 Seminar: Ethnological Theory and Method
135.102 Anthropological Data Analysis

Courses from the following subject areas:

- Social institutions: social institutions, linguistics (including courses in the Department of Linguistics), and archaeology.
- No more than 9 semester hours of courses outside of anthropology and no more than 3 semester hours of independent-study may be applied toward the M.A. degree requirements in anthropology.

In addition, students currently may select specializations in any of the above fields.

M.A. Program in Anthropology with a 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. Details of exhibit preparation and the general operational procedures of small science museums form part of the student's training. Further information on this program may be obtained from the Department of Anthropology or the Museum of Natural History.

Doctor of Philosophy

Graduate training in anthropology at the Ph.D. level is designed to lead to professional competence in scholarly research and teaching. The Ph.D. degree represents a balance between general competence in all the subfields of anthropology and the advanced level and specialization.

Graduate training is a specialization guided by a Ph.D. committee composed of members of the faculty who are competent in the particular areas and topics chosen by the student. Those areas include:

- At least 27 semester-hours of graduate courses;
- Demonstration of a reading knowledge of one foreign language; and
- Ethnographic or archaeological specialization in a major topical area (for example, North America, Southeast Asia, the Caribbean, Europe), approved by the student's Ph.D. advisory committee.

Specialization in a major and minor topical area:

A written comprehensive examination in the student's area of specialization; and
- Preparation and 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 major or minor areas in sociocultural or linguistic anthropology include kinship or social organization, ethnology; economic anthropology; language and culture, religious culture, and urban anthropology.

Examples
Assistantships
Most graduate students receive financial aid in the form of teaching and research assistantships. Application for an award should be made directly to the Department of Anthropology chair.

Facilities
The Department of Anthropology has access to the Inner Archaeological Collections through the Office of the State Archaeologist. Thomas H. Martin maintains a field laboratory in Mexico and is associated with the Tuscaloosa Archaeological Research Facility. The University is a charter member of the Human Relations Area Files (HRAF), an extensively annotated set of source materials on the peoples of the world—including their environments, behavioral patterns, social lives, and cultures. The HRAF and other library resources give anthropology students access to source materials on more than 400 different cultures. A well-equipped laboratory for the study of physical anthropology has recently been added to the departmental facilities.

Faculty
Members of the anthropology faculty have lived and worked in the Pacific Islands, Asia, Indonesia, Great Britain, the Caribbean, Mesoamerica, South America, and the Subsaharan region. Recent field research has been conducted in Mexico, Central America, Peru, the Yucatan Peninsula, Mesoamerica, Indonesia, Great Britain, the eastern Caribbean, China, India, Burma, Vietnam, and the Canadian Arctic.

Work currently in progress by department faculty members includes research on the precontact state systems and the historical archaeology of the Valley of Mexico; comparative syntactic and semantic aspects of language development; Peruvian undervelopment and its consequences for women in the subsistence systems; political and economic development of indigenous nations; and economic decision making among rural peoples in the Peruvian Amazon, various social models; alcohol and drug studies; ethnosociology, ecology, and social organization of Indian peoples of the American Subsaharan West Indian migrants in London; and political economy of the eastern Caribbean.

Courses
For Undergraduates Only
1130 Introduction to Culture and Society 3 h.
1131 Introduction to the Study of Culture and Society 2 h.
1150 Anthropology and Contemporary World Problems 3 h.
1321 World Problems: Principles from an anthropological perspective, considering current and emerging issues with special focus by diverse human groups in recent times and their impact.

Advanced Courses
General Anthropology
1310 General Anthropology 3 h.
1320 Anthropological Data Analysis: Quantitative procedures for studying field notes and laboratory materials, elementary statistics and qualitative analysis.
1330 Introduction to Archaeology 3 h.
1331 Historical Archaeology: American and European history and social change. Focuses on human behavior in prehistoric, historic, and early historic contexts.
1332 Environmental Anthropology 3 h.
1333 Cultural Anthropology: Historical and contemporary issues in cultural behavior. Focuses on human behavior in prehistoric, historic, and early historic contexts.
1334 Research Methods 3 h.
1335 Research Methods 3 h.
1336 Research Methods 3 h.
1337 Research Methods 3 h.
1338 Research Methods 3 h.
1339 Research Methods 3 h.
1340 Research Methods 3 h.
1341 Research Methods 3 h.
1342 Research Methods 3 h.
1343 Research Methods 3 h.
1344 Research Methods 3 h.
1345 Research Methods 3 h.
1346 Research Methods 3 h.
1347 Research Methods 3 h.
1348 Research Methods 3 h.
1349 Research Methods 3 h.
1350 Research Methods 3 h.
1351 Research Methods 3 h.
1352 Research Methods 3 h.
1353 Research Methods 3 h.
1354 Research Methods 3 h.
1355 Research Methods 3 h.
1356 Research Methods 3 h.
1357 Research Methods 3 h.
1358 Research Methods 3 h.
1359 Research Methods 3 h.
ART AND ART HISTORY

DISPOSSESSED
Wallace J. Thomas


ASSOCIATE PROFESSORS: Peter Blumstein, Sue Herrmannsberger, Robert Bonga, Otis Bodnar, James Bedar, Norman Ocker, George Walker

ASSISTANT PROFESSORS: David Forney, Robert Glanville, Ab Gratzman, Dorothy Hummel, John Roberts, Consa Retzbach, Joy Spelling, Margaret股东

UNDERGRADUATE DEGREES OFFERED: B.A., B.F.A. in Art

GRADUATE DEGREES OFFERED: M.A., M.F.A. in Art History

The University of Iowa School of Art and Art History pioneered the artist-teaching concept, appointing its teachers on the basis of their quality of work rather than the number of their degrees. It was one of the first university-based art schools to bring established professional artists to its permanent faculty.

It was also among the first schools of art 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 perspective facilitated by personal experience with the creative process.

Emphasis on the creative productivity of its faculty reflected an educational philosophy that made Iowa one of the first universities to accept creative work for academic credit.

The school established a tradition of, and achieved national recognition for, presenting large exhibitions of contemporary American painting and sculpture.

Art natural image and position are emphasized not only through The University of Iowa Museum of Art, but its program of exhibitions and its growing collection of art works of all periods and nations, but also through its continuing program of providing visiting artists and scholars of art and international prominence.

The flexibility 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. The employment of visiting lecturers, in addition to the permanent faculty, for short-term workshops continues 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 creators, theater designers, and teachers. Regardless of employment department, 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 design of academic programs is arranged to meet the individual student's needs, permitting the development of specific as well as general programs in studio art and history. The major requirements of the undergraduate program are broad and flexible.

Graduate students are supervised by a program major and a studio major. The studio major requires development of a specialization in art history in at least one area of studio art. The aim of the joint curriculum is to give students a basic understanding of art and aesthetics, but it does not focus on particular thematic styles or fashions.

UNDERGRADUATE PROGRAMS

BACHELOR OF ARTS

The B.A. candidates in art or art history must each achieve at least 75 semester hours of credit in major requirements, but may apply no more than 36 non-art general education hours toward the total of 124 semester hours necessary for the degree. The B.A. candidate may waive 3 semester hours of the General Education Requirement in history; however, courses originating in the School of Art and Art History may not be counted toward the general liberal arts core and semester hour requirements.

STUDIO EMPHASIS

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

Arts History: Two courses selected from among I 11, I 15, I 14, and I 16 6 s.h.

Two additional courses exclusive of those courses listed above 6 s.h.

I 12-2 Colloquium 2 s.h.

I 12 Basic Drawing 2 s.h.

I 14 Basic Design 2 s.h.

Two of any of the following courses 4 s.h.

I 12 Ceramic I 2 s.h.

I 12 Introduction to Metalworking and Jewelry 2 s.h.

I 12-1 Multicultural 2 s.h.

I 15 Undergraduate Sculpture I 2 s.h.

Two beginning courses; one selected from two different studio art areas not taken to satisfy the requirements above 4 s.h.

BEGINNING COURSES

In areas not listed above are:

Design:

I 12-1 Problems in Design I and II 4 s.h.

I 12-2 Problems in Design I and II 4 s.h.

I 12-5 Lettering I 3 s.h.

I 12-6 Graphic Design I 3 s.h.

Drawing:

I 12-7 Life Drawing I 4 s.h.

I 12-8 Painting I 4 s.h.

I 12-10 Painting I 4 s.h.

I 12-12 Photography I 4 s.h.

I 12-13 Printmaking I 4 s.h.

I 12-14 Ceramic I 4 s.h.

I 12-15 Undergraduate Printmaking I 4 s.h.

I 12-16 Fiber Art I 4 s.h.

I 12-17 Painting and Drawing I 4 s.h.

Electives: selected only from courses that originate in the School of Art and Art History; must bring the total number of credits in history of art, studio, or art education courses to a minimum of 36 semester hours and may raise the total to a maximum of 50 semester hours. No more than 50 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 12 semester hours in studio. In addition to the studio credit courses required above and including at least two different studio areas.

Undergraduate transfer students majoring in studio must, at their first registration, have a portfolio to a faculty review committee, which will determine the student's placement in, or exemption from, the sequence of basic studio courses.

ART HISTORY EMPHASIS

Major requirements for the B.A. degree with an emphasis in art history are 8-12 semester hours of studio courses, as above, and 6 semester hours (two...
courses) from among 11.15, 11.16, 11.16 and 11.16. Plan 15 semester hours of Intermediate and advanced art history.

Electives, selected only from courses that originate in the School of Art and Art History, may bring the total number of credits in art, art studio, or art education combined to a minimum of 36 semester hours and may raise the total to a maximum of 35 semester hours. No more than 30 semester hours of credit in the combined art history, education courses may be counted toward the total of 124 semester hours required for the degree.

Foreign students in art history must maintain a minimum grade-point average in art history of 3.10, and must complete 6 semester hours beyond the 38 semester hours of intermediate and advanced art history, a seminar and a written thesis, for 3 semester hours of credit each.

Non-art credits must include two or more semesters of a second foreign language, and at least 12 semester hours in at least three disciplines, including two of the following: anthropology, classics, drama, history, language, literature, music, philosophy, religion, or sociology.

Transfer students planning to major in art history should meet with the professor in charge of art history to discuss the student’s required minimum registration for courses in art history and studio.

Art Education

Students seeking the B.A. degree in art education may choose either the visual or the media emphasis. For the major, bring the total combined credits in history of art, studio, or art education to the required minimum of 36 semester hours or the maximum 50 semester hours must be selected from courses that originate in the School of Art and Art History. In addition to the general requirements for teacher education and the “College of Education” section of the Catalog, students must satisfy some specific requirements:

11.19 Concepts in Art Education 3 s.h.
11.199 Art Education Studio 3 s.h.
11.246 Methods. Art 3 s.h.
11.245 Advanced Methods: Art 3 s.h.
11.238 Seminar-Curriculum and Student Teaching 3 s.h.
TE.302 Special Area Student Teaching 3 s.h.
21.191 Observation and Practice in Secondary School 6 s.h.

The following course is not elective:
IE.139 Art Education and the Museum 3 s.h.

Bachelor of Fine Arts in Studio

Prospective B.F.A. students must apply to 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 62 semester hours of credit in Art and Art History courses. In addition to the General Education Requirements (see the “College of Liberal Arts” section of the Catalog) and major requirements listed above, the “B.A. degree with studio emphasis, the B.F.A. candidate must complete three courses in a studio area of concentration beyond the fundamental courses, and must complete at least the second semester of coursework in each of two additional studio areas. Art education majors in the B.F.A. program must meet the same teacher certification requirements as set forth in the B.A. program. The B.F.A. candidate may waive 6 semester hours of the General Education Requirement in historical perspectives.

Master of Fine Arts in Studio

Students seeking the M.F.A. degree in studio art are expected to acquire a broad general knowledge of art history as an academic discipline, become familiar with major periods and movements of world art, and gain proficiency in techniques of research within selected areas.

Specific requirements include:

A.B.A. or B.F.A. degree, with at least 18 semester hours of undergraduate work in art history.

A minimum of 38 semester hours of graduate-level coursework, 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 grade of B or better at least one one-semester course at a level equivalent to University of Iowa course numbered 100 or above, taken after receiving the B.A., at each of five of the following areas of art history:

- Ancient (100-300 B.C.)
- Medieval (300-1500)
- Renaissance to Baroque (1500-1750)
- Nineteenth-century to modern
- Asian
- African, Oceanic, and Pre-Columbian

The following may be substituted for the above course distribution:

A comprehensive written examination (totaling approximately four hours in length) covering the entire field of art history. The examination usually is given three times per year, at the beginning of each semester and the summer session. Students must take this examination at least once during the summer or the winter session of the semester in which they complete 20 semester hours of graduate work. The comprehensive examination may be taken only once.

Course distribution for the M.F.A. in art history is as follows:

11.245 Seminar: Methodology of Art History and Criticism 3 s.h.
* Two other art history seminars (with different instructors) 4-6 s.h.
Additional art history courses 14-16 s.h.
Studio 0-8 s.h.
Courses outside the school 0-9 s.h.

*These seminars can be applied toward distribution if the student has had prior coursework in the same area.

All students are required to have a total of 20 semester hours of studio training either in the undergraduate or graduate level. Students with 6 semester hours or more of undergraduate studio training are exempt from the studio art requirement. Students preparing to teach in both the art history and studio areas will take 12-18 semester hours of studio course work, with a minimum of 2 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.

A.B.A. or B.F.A. degree majors in art history are encouraged to take courses outside the major.

Within the first 20 semester hours of graduate work, the M.F.A. candidate is expected to demonstrate the ability to read art historical writings in an appropriate foreign language—particularly German or French, though other languages, including Oriental languages, may be acceptable. This requirement may be fulfilled by satisfactory completion of a minimum of 3-5 semester of a B.S. degree language reading course (at least a 3.00 grade-point average) of the fourth semester of a college or university language course.

The student must prepare either a written thesis, for which 3 semester hours of credit may be allowed, or a substantial research paper (approximately 20-40 pages).

Master of Arts in Studio

The school offers the M.A. degree in studio with a major in ceramics, design, drawing, metalurgy, painting, printmaking, and video art, writing, photography, printmaking, or sculpture. The degree requires:

The B.A. or B.F.A. in art equivalent to that semester of work in the studio area of concentration (undergraduate deficiencies, if any, may be made up concurrently, but are in addition to, graduate requirements).
Master of Fine Arts in Studio

The School offers the M.F.A. degree with a major in ceramics, design, drawing, digital/interactive, fine art, media, photography, printmaking, or sculpture. The M.F.A. candidate must have an M.A. degree in art education or an M.F.A. in art education at that offered at The University of Iowa, a minimum of 36 semester hours of graduate work, including at least 12 semester hours in a major studio area, at least 6 semester hours in a minor studio area, 9 semester hours in art history and theory of art, and 5 semester hours in courses exploring outside the school for M.F.A. candidacy by faculty review; and studio and written thesis. Thesis credits earned in an M.A. program are not applicable toward the M.F.A. credit requirement.

Doctor of Philosophy in Art History

The Ph.D. student is expected to have a broad general knowledge of art history and to acquire detailed knowledge of monuments, an understanding of artistic development, and a knowledge of research methods within certain specialized areas of world art to be selected by the student in consultation with appropriate faculty members in the school.

The Ph.D. degree in art history is intended only for students who can effectively demonstrate scholarly potential in the field. Students may apply for a rapid track to the Ph.D., bypassing the M.A. (see "Direct Entry into Ph.D. Program," below). Specific requirements for the Ph.D. degree include the following:

- An oral and 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 written thesis in the field's methodological, artistic, and psychological approach) and, as in the M.A. degree program, an M.F.A. candidacy by faculty review.

Art education majors who elect to take a studio track and who have a major in drawing at The University of Iowa are required to take at least 24 semester hours of studio courses, selected from the School's regularly scheduled drawing courses, prior to the fall of their first year in residence.

Art education majors who elect to take an art history course may elect a satisfactory-unsatisfactory basis.

The student must complete a minimum of 72 semester hours of graduate level coursework toward this total, a maximum of 38 semester hours of work taken for the M.A. degree may be applied.

Students must demonstrate, within the first 21 semester hours of graduate work beyond the M.A. degree, ability to read art history written in two appropriate 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 meet, at the graduate level, the distribution requirement of the M.A. or complete the UI 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 residence requirement for the degree must be met by enrollment at this university as a full-time student in each of two semesters beyond the first 24 semester hours of graduate work.

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

- Two art history seminars (with two different instructors) 46 s.h.
- Additional art history courses 16 s.h.
- Courses outside the school 412 s.h.

Students must successfully complete a comprehensive examination in one major field (6 hours) and two minor fields (3 hours each) selected by the student in consultation with the adviser and approved by the art history faculty. At least one minor must be concerned with an art historical period or area, remote from the major field. One minor field may be related to the major; this field may be in a discipline or disciplines outside the school—for example, religion, history, literature, or philosophy.

The student must prepare a written dissertation containing an original scholarly contribution to the field. The school will allow up to 9 semester hours of credit toward the art history course work for the dissertation. The topic of the dissertation must be presented to the faculty for approval. The student is given a final oral examination on the dissertation.

Direct Entry into Ph.D. Program

A graduate student may at any time, apply directly to enter the Ph.D. program without first completing the M.A. program. Students who want to exercise this option must submit a significant research paper that meets the fourth-year-fourth-course requirement of the graduate art history faculty. Students may apply for this option only twice, if the second application fails, they must complete the M.A. degree requirements as specified for admission into the Ph.D. program. All other requirements, including M.A. dissertation, seminars, and foreign language, remain the same.

Doctor of Philosophy in Art Education

The doctorate in philosophy in art education gives college teachers and researchers in art education and art supervisors in state departments of education and school systems an opportunity to continue their inquiry and creative work in art history and studio art.

The program is administered by the College of Education in cooperation with the School of Art and Art History. Students...
must apply for admission to the College of Education.

Admission

Students must meet the general requirements for doctoral students in the Graduate College and have an M.A. degree in art education. The University of Iowa or an equivalent degree from a accredited college or university. Students who have course work deficiencies must register for pertinent courses. On 1 year of successful teaching experience in an elementary or secondary school is required prior to admission or the completion of the doctoral program.

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

Degree Requirements

Students must complete 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 Art History, 15 semester hours in art education graduate written, 15 semester hours in a related area (e.g., aesthetics, anthropology, history education, psychology, etc)., and 15 semester hours in a major and tool courses (Te 305 or Te 106) 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 of the date specified in the examination on the project is held. The research project is assigned by the examining committee and the written portion of the examination is not intended to test directly to the student's dissertation proposal.

Students also must complete a written dissertation for at least 12 semester hours and 24 hours to complete a dissertation proposal and defend it before the dissertation committee. An oral examination on the dissertation in the 3rd, final examination.

Graduate Admission: Studio

Admission procedures for graduate studio programs include a committee review of applications and are all of the applicant's supporting material. The school should be consulted for meeting dates.

Ceramics, design, drawing, metalworking or jewelry, multimedia in video art, or painting majors must submit slides and/or photostats of their work in their major field; only applicants who will be residence at the University may submit original work in these areas. Printmaking majors must submit from 6 to 20 original prints or engravings. Photography majors must submit a selection of original photographs. Sculpture majors should send 10 block-and-white photos—side views, if color is important—of their work. Studio applicants also must submit two slides of the work in their area, and three three sheets of recommendations.

Newly admitted students who do not register within two semesters of their admission must resign. 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. Applicants to the graduate program in art education must submit a term paper or other example of ability to write in the field, and a selection of slides or photographs of their creative work in two studio areas.

All applicants must submit three letters of recommendation.

Deadline for receipt of completed art history and art education applications is June 15 for the fall semester, November 15 for the spring semester, and April 15 for summer semester.

Newly admitted students who do not register within two semesters of their admission must resign. 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

Assistantships paying approximately $8,000 per academic year for 20 hours of departmental duties weekly are awarded to graduate students on a competitive basis. One-quarter-time assistantships are also available. The award of an assistantship entitles the recipient to the Iowa resident tuition rate. Scholarships paying partial or full tuition and continuing to departmental duties require at least a 3.0 cumulative grade-point average.

These financial aid usually are awarded to students who have been in residence for at least one semester, to that faculty members have had an opportunity to observe their performance and potential.

Facilities

School facilities include an art library containing 70,000 volumes, a visual materials center containing 250,000 slides, 30,000 photographs, and a videodisc facility; a printshop containing intaglio, lithography, screen printing and photomechanical equipment; and large-scale iron and miter casting/apparatus as well as facilities for welding and fabrication of steel sculpture; a well equipped darkroom; extensive kiln facilities including provision for construction of various types of temporary and specialized kilns, a large shop for woodworking, metalworking, and industrial design; electrophotographic equipment; a papemaking shop; typography studio; and video equipment.

Courses

Art History

Primarily for Undergraduates

111 Understanding the Visual Arts 3 3.0
Examination of the artistic and symbolic aspects of art required for an understanding of the work the viewer • and interpret the human condition.

211 Art of the Other Continents 3 3.0

311 Art of the Americas 3 3.0

315 Art and Cultural Symbolism 3 3.0

320 Museum Studies 3 3.0

321 Departmental Studies 2 3.0

325 Ancient Civilizations 3 3.0

345 Art and Culture of Africa 3 3.0

355 Art and Culture of Asia 3 3.0

365 Art and Culture of the Americas 3 3.0

380 History of Art 3 3.0

392 Art History Seminar 1 3.0

415 Romanesque and Gothic Architecture 3 3.0

417 sculpture and architecture, 10th century: 4 3.0

430 Renaissance Art and Architecture 3 3.0

434 art history of 17th and 18th century Europe 3 3.0

443 Modern and Contemporary Art 3 3.0

455 Modern Art and Architecture 3 3.0

460 Art and Architecture in Europe 1300 to 1500 3 3.0

465 Art and Architecture in France 1800 to 1900 3 3.0

471 Art and Architecture in England 1200 to 1700 3 3.0

473 Art and Architecture in Spain 1200 to 1700 3 3.0

475 Art and Architecture in Italy 1200 to 1700 3 3.0

477 Art and Architecture in Iberia 1200 to 1700 3 3.0

495 History of Art 9 3.0
Undergraduate Programs

The Department of Asian Languages and Literature offers two programs leading to the Bachelor of Arts degree, one primarily for students interested in studying the culture and civilization of traditional and modern Asia, and the other intended for those who want to concentrate on developing competence in one of the Asian languages offered.

Graduates of both programs find careers in education, government, business, and commerce in America and Asia. The programs also provide an excellent background for advanced study in literature, history, art, religion, political science, geography, anthropology, and sociology. The department urges its undergraduate majors to study in Asia as early in their careers as possible, and every effort is made to facilitate travel credit with universities in Asia.

Major in Asian Studies

This major introduces students to East or South Asian cultures, both modern and traditional, and to the contemporary politics and societies of Asia. Courses are taught by Asian specialists in many departments. Students are encouraged to take courses in a number of disciplines to get a broad understanding of Asian culture and civilization.

Students seeking a B.A. degree in Asian studies may waive 3 semester hours of the General Education Requirement in foreign civilization and culture.

Students completing an Asian studies major must complete 30 semester hours of courses on Asia, distributed as follows:

- 10-12 semester hours in a single East or South Asian area.
- 6-8 semester hours in another East or South Asian area.
- At least one course on the history of the area whose language they are studying.

- 30-13 History of Ancient and Traditional India
- 30-24 Literature and Modern India
- 30-12 Traditional China
- 30-15 Modern China: 1890 to Present
- 30-15 Japanese
- 30-15 Korean
- 30-15 Other selected East or South Asian areas

Major in Chinese, Hindi, Japanese, or Sanskrit

This major is intended for students who want to achieve an ability to speak, understand, read, and write Chinese, Hindi, or Sanskrit, or Japanese, and to gain knowledge of the literature of China, Japan, or South Asia. Students seeking a B.A. degree in an Asian language may waive 3 semester hours of the General Education Requirement in foreign civilization and culture. Majors are required to complete advanced courses, distributed as follows.

For students of Chinese:
- 10-11 Second-Year Chinese
- 10-16-11 Third-Year Chinese
- 10-14-11 Chinese literature: Poetry
- 10-12 Chinese Literature: Prose

For students of Hindi:
- 10-15-14 Second-Year Hindi
- 10-14-15 Third-Year Hindi
- 10-13-15 Hindi literature
- 10-17-17 Indian Devotional Literature in Translation

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

For students of Japanese:
- 10-11 Second-Year Japanese
- 10-10-11 Third-Year Japanese
- 10-14-11 Traditional Japanese literature in Translation
- 10-14-14 Modern Japanese fiction in Translation

For students of Sanskrit:
- 10-15-24 Second-Year Sanskrit
- 10-14-15 Third-Year Sanskrit
- 10-14-15 Sanskrit literature
- 10-14-15 Indian religious texts

"With the approval of the major advisor, students may substitute 6 semester hours of 100-level courses in South Asian studies for third-year Sanskrit.

Students are urged to fulfill the General Education Requirement in historical perspectives by completing H&F civilizations of Asia.

Minors

Minors in the languages offered by the department and in Asian studies also are available. See the departmental office for more information.

Honors

Students with a grade-point average of 3.20 or above are encouraged to enroll in the Liberal Arts Honors Program. With the permission of the departmental chair and a faculty sponsor selected from among Asian specialists in any department, students may register for 20-121 Honors Tutorial and 30-195 Senior Honors Thesis. To receive a B.A. with honors, students must complete an acceptable thesis based on original research in an appropriate area of Asian Studies.

Graduate Programs

Certificate in International Business

Students of Chinese, Japanese, and Hindi may participate in a program leading to a Certificate in International Business, offered jointly by the College of Liberal Arts and the College of Business Administration. The wide range of electives in the program permits students to tailor it to their individual interests and to complement majors in the colleges of liberal arts and business administration.

Master of Arts in Asian Civilizations

The graduate program in Asian civilizations provides preparation for doctoral study in a variety of disciplines. It is also of interest to students with nontraditional career plans who graduate-level work in an Asian language and culture would be useful. Students in professional programs are encouraged to consider working toward a concurrent degree in Asian civilizations.

The Master of Arts in Asian Civilizations requires a minimum of 30 semester hours of approved course work, 24 of which must be taken in residence at the University of Iowa. By the end of the first semester in residence, students propose a plan of study developed in consultation with the advisor. The course of study must satisfy all of the following ten specialized master's programs: Chinese literature, Chinese linguistics, Chinese language teaching, interdisciplinary studies in Chinese, Japanese, and Korean language and literature, Hindi, Sanskrit language and literature, Japanese language and literature, and South 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 fall semester in residence, students are expected to demonstrate, either by departmental examination of the successful completion of courses at the appropriate level, adequate competence in Chinese, Japanese, Korean, or Sanskrit, defined generally as a score of 5.0 or better on the fourth-year level of language course work in Chinese or Japanese and the third-year level in Hindi and Sanskrit.

Admission

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

Both foreign and nonforeign graduate applications requesting financial support for the following academic year are due on February 1. Applications for admission without support are accepted until July 15 for the fall semester or December 1 for the spring semester. Candidates should take the Graduate Record Examination (GRE) and the Graduate Record Examination with Advanced Test of English (GRE) and the Caltech Review Examination (GRE) in order to receive financial support.

Financial Aid

The Department of Asian Languages and Literature has available two kinds of support for graduates 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 enrolled undergraduate and graduate students are eligible to compete for special awards for students in Asian languages and literature. The Studden of Iowa Foundation Support Organization supports the Studden of Iowa Foundation Support Organization. Scholarships consist of a $3,000 stipend selected to participate in the Iowa Language Program. In addition to the Iowa Language Program, 10 special awards are available each year, and recipients for study to non-Western European Countries are especially encouraged. Special Scholarships for International Research and Study (SRES) stipends of up to $800 (to support summer study projects and activities away from The University of Iowa campus. Graduate students who continue work in modern Asian languages at an advanced level with interdisciplinary or professional study are encouraged to apply for Graduate Fellowships in Foreign Language Study awarded by the Center for International and Comparative Studies. The fellowship consists of a stipend and a semester study stipend as well as full or partial tuition support. They may be held only by American citizens.

Special Programs and Activities

The Iowa Critical Languages Program (ICLP) 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 minor in the language and Iowa certification at the secondary level. Applicants must be U.S. citizens or permanent residents of the United States. They may already hold a bachelor's degree and teaching certification.

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 minor in the language and Iowa certification at the secondary level. Applicants must be U.S. citizens or permanent residents of the United States. They may already hold a bachelor's degree and teaching certification.

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 minor in the language and Iowa certification at the secondary level. Applicants must be U.S. citizens or permanent residents of the United States. They may already hold a bachelor's degree and teaching certification.

Through a grant from the Ford Foundation, participating students receive full funding for a year of study abroad and two summers of intensive language study, and a stipend for a final year of advanced study at Iowa. 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, 110 Jessup Hall.

Summer and Study-Abroad Programs

The department strongly urges its students to seek opportunities for summer language study and study abroad in order to accelerate the process of language acquisition. Many of the financial aid programs described above are designed to help make such learning experiences possible. Both the department and the Office of International Education and Services maintain extensive files of information about study-abroad opportunities.

The University's membership in the American Institute of Chinese Studies and the China Cooperative Language and Study Program consortium facilitate study abroad for Iowa students. The China programs provide opportunities to study language and culture in universities in Beijing, Shanghai, and Nanjing. The emphasis is on Chinese business practice and language and arrange short-term internships in Chinese and foreign enterprises.

The UI-NSF English and Japanese programs allow students to pay tuition costs while attending the Center for Japanese Studies at Kansai University in Nagoya, Japan. The center offers both intensive Japanese language instruction at all levels and courses in a wide variety of disciplines in Japanese studies taught in English. Home stays may be arranged for students who wish to experience life in a Japanese family.

Internships

Students are encouraged to enrich their studies through internships designed to combine work experience in Asia or the United States with study or research projects. The internship programs of the Office of Cooperative Education include a joint program with the Chicago office of the Japan Expert Trade Organization to place Iowa students in Japanese businesses and other organizations.

The Japanese Language House and the Japanese Student Association

The Foreign Language House in Hillcrest Residence Hall includes a Japanese house that is a focal point for activities among both resident and nonresident students and the Japanese Students Association, including weekly dinners. The Japanese Student Association is composed of American students of Japanese and members of the Japanese community at the University. It organizes social events, film showings, and other cultural programs.

Library Facilities

Since 1960 the Main Library has routinely acquired most American titles in Asian studies and selected overseas scholarly publications in English and other Western languages. The library's Asian collection includes approximately 40,000 volumes in Japanese languages and about 120,000 Western-language volumes on Asian subjects. The University is a member of the Library of Congress Foreign Currency Exchange Program for Soviet and East European periodicals. The library's microform collection includes a growing number of Asian feature films. A Chinese-Japanese-Korean computer terminal gives students and faculty access to the growing Research Libraries Information Network Database in Asian languages.

Courses

Undergraduate Language

28000 Chinese Language 3 ch.
281 Chinese 1 4 ch.
282 Chinese 2 3 ch.
283 Chinese 3 3 ch.
284 Chinese 4 3 ch.
285 Chinese 5 3 ch.
286 Chinese 6 3 ch.
287 Chinese 7 3 ch.
288 Chinese 8 3 ch.
289 Chinese 9 3 ch.
290 Chinese 10 3 ch.
291 Chinese 11 3 ch.
292 Chinese 12 3 ch.
293 Chinese 13 3 ch.
294 Chinese 14 3 ch.
295 Chinese 15 3 ch.
296 Chinese 16 3 ch.
297 Chinese 17 3 ch.
298 Chinese 18 3 ch.
299 Chinese 19 3 ch.
300 Chinese 20 3 ch.
301 Chinese 21 3 ch.
302 Chinese 22 3 ch.
303 Chinese 23 3 ch.
304 Chinese 24 3 ch.
305 Chinese 25 3 ch.
306 Chinese 26 3 ch.
307 Chinese 27 3 ch.
308 Chinese 28 3 ch.
309 Chinese 29 3 ch.
310 Chinese 30 3 ch.
311 Chinese 31 3 ch.
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344 Chinese 64 3 ch.
### Language Courses for Graduates

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### Literature Courses

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<td>Advanced Chinese Literature</td>
<td>Fall 2022</td>
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<td>331117</td>
<td>Chinese Literature: A Comprehensive Introduction to the Chinese Language</td>
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<td>331118</td>
<td>Chinese Literature: Advanced Reading and Writing</td>
<td>Fall 2022</td>
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<td>331119</td>
<td>Chinese Literature: Advanced Composition</td>
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<td>331120</td>
<td>Chinese Literature: Advanced Grammar and Syntax</td>
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<td>331121</td>
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### Convocation Courses

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<td>331126</td>
<td>Chinese Literature: Advanced Reading and Writing for Convocation Students</td>
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### Translation Courses

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<td>331134</td>
<td>Chinese Translation: Advanced Reading and Writing</td>
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### Convocation Literature Courses

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</table>
Biology • Liberal Arts

Undergraduate Programs

Bachelor of Science in Biotechnology

The Bachelor of Science in biotechnology prepares students for graduate or professional school or for employment in health sciences. The curriculum is designed to provide a strong foundation in the life sciences and to prepare students for careers in the biotechnology industry.

General Education Requirements:
- 12 hours of Liberal Arts electives
- 6 hours of Physical Education

Biotechnology Courses:
- BIOL 101: Introduction to Biotechnology
- BIOL 102: Environmental Biotechnology
- BIOL 103: Cellular and Molecular Biology
- BIOL 104: Human Anatomy and Physiology
- BIOL 105: Biotechnology Ethics and Regulation

Advanced Options:
- BIOL 106: Advanced Biotechnology
- BIOL 107: Biotechnology Research Seminar

Graduate Programs:
- Master of Science in Biotechnology
- Doctor of Philosophy in Biotechnology

Combined Programs:
- Biotechnology and Environmental Science
- Biotechnology and Business Administration

Graduate Faculty:
- Robert J. Hernandez
- Mark A. Miller
- Sarah E. Johnson
- John D. Anderson

Graduate Programs:
- Master of Science in Biotechnology
- Doctor of Philosophy in Biotechnology

Undergraduate Programs:
- Bachelor of Science in Biotechnology
- Master of Science in Biotechnology
- Doctor of Philosophy in Biotechnology

Honors Program:
- Students who meet the criteria for admission to the Honors Program may apply for admission to the Biotechnology Honors Program. Students who are accepted into the program will be required to complete a research project that is presented at a special seminar held at the end of the semester.
Bachelor of Science

Required Courses in Biology

21 Introduction to Botany 4 s.h.
*12 Principles of Animal Biology 5 s.h.
*128 Fundamental Genetics 3 s.h.
*129 Fundamental Genetics Laboratory 2 s.h.
*130 Fundamental Genetics Laboratory/Molecular 2 s.h.
**133 Evolution 4 s.h.
135 Cell Physiology 4 s.h.
Electives in biology, botany, microbiology, or pathology (paleontology) 12 s.h.
Total 34-35 s.h.

*These courses are cross-listed in the botany department.

The 12 semester hours in biology must be in courses numbered 100 or above, but not in courses primarily intended for nonscience students. Also, the elective credit may not include more than 3 semester hours in biology and botany honors courses, 2151 Special Topics, and 37-09 Introduction to Research. The elective courses can include up to 4 semester hours of advanced course work in the physical sciences (physics, chemistry, geology), in specific courses in the basic science departments of the College of Medicine, or in mathematics courses that have first-semester calculus as prerequisite.

Other guides in choosing the electives are that they carry elementary course prerequisites, are meant primarily for science majors, and do not include the required courses in captive sciences listed below. Students should choose elective courses in consultation with their advisors.

Required Courses in Other Disciplines

15 Principles of Chemistry 6 s.h.
16 Principles of Chemistry 6 s.h.
12 Principles of Chemistry 2 s.h.
21 Principles of Chemistry I 3 s.h.
99 120 The Chemistry of Biological Materials 3 s.h.
29 11-12 College Physics I-II 8 s.h.
or
26 17-18 Introductory Physics I-II 8 s.h.
25 26 Calculus I 4 s.h.
25 26 Calculus II 4 s.h.
25 26 Calculus for the Biological Sciences 3 s.h.
or
25 25 Engineering Calculus I 4 s.h.
260 16 Expository Writing or (equivalent) 3 s.h.
Total 28-29 s.h.

Bachelor of Arts

The B.A. program provides more options among the required courses than does the B.S. program. Also, B.A. degrees in the College of Liberal Arts require four college semesters of a foreign language or the equivalent (four years) in high school.

Required Courses in Biology

21 Introduction to Botany 4 s.h.
37 Principles of Animal Biology 5 s.h.
*128 Fundamental Genetics 5 s.h.
**131 Evolution 4 s.h.
137 Adaptation and Natural Selection 4 s.h.
An investigative laboratory course: 126 Comparative Physiology Laboratory 2 s.h.
or
*129 Fundamental Genetics Laboratory 2 s.h.
or
**130 Fundamental Genetics Laboratory/Molecular Genetics of Yeast 3 s.h.
or
152 Introductory Laboratory 2 s.h.
or
**158 Techniques in Neurobiology 4 s.h.
or
25 Enzyme Purification and Characterization 4 s.h.
Electives in biology, botany, microbiology or paleontology 11 s.h.
Total 29 s.h.

*These courses are cross-listed in the botany department.

**Hours in investigative laboratory course requirement in science or two may be applied toward elective credit.

Of the 11 semester hours of elective credit, up to 6 semester hours may be earned in other sciences or mathematics. Up to 3 of these 6 semester hours in an 11 semester course in the sciences or 6 semester hours in the nineteenth and the fourteenth centuries. Other restrictions and limitations in entering to satisfy the elective credit requirement apply for the B.S. degree.

Required Courses in Other Disciplines

13 Principles of Chemistry I-II 6 s.h.
16 Principles of Chemistry 6 s.h.
25 25 Calculus I 2 s.h.
99 120 The Chemistry of Biological Materials 3 s.h.
25 26 Calculus I 4 s.h.
25 26 Calculus II 4 s.h.
25 26 Calculus for the Biological Sciences 3 s.h.
or
25 25 Engineering Calculus I 4 s.h.
260 16 Expository Writing or (equivalent) 3 s.h.
Total 28-29 s.h.

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

Rhetoric 2 s.h.
Chemistry (4.15) 3 s.h.
Botany (2.1) 3 s.h.
Mathematics 3 s.h.

Second Semester

Rhetoric or RCS Interpretation of Literature or General Education Requirement in the humanities 3 s.h.
Chemistry (4.14, 4.16) 5 s.h.
Foreign language 3 s.h.
Mathematics 3 s.h.

Students who seek the B.S. degree and who are sufficiently prepared in mathematics to take calculus in their first semester are encouraged to take 128 Principles of Animal Biology in their second semester.

Minor

Students majoring in other subcs-tions may earn a minor in biology. The biology minor requires 15 semester hours of credit in biology, botany, microbiology, and/or paleontology courses taken at The University of Iowa, including at least 12 semester hours in 100-level courses, and excluding those designated primarily for nonscience students. 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 to a small, active group of undergraduates with common interests. Honors students associate with the honors students of others' departments, gaining an introduction to the pursuits 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. Enrolling at least 2 semester hours in 37-106 Honors Laboratory Research of B 106 Honors Laboratory Research. At least 2 semester hours in 37-107 Honors Readings in Biology or 2107 Honors Readings in Biology; and at least 1 semester hour in 37-108 Honors Seminar in Biology or a graduate-level seminar. Honors students in biology must maintain at least a 3.26 grade-point average overall and at least a 32 average in the biological sciences. A final research paper prepared by the research experience is required.

Introduction to Research
The department offers 37-109 Introduction to Research to acquaint students majoring in Biology with the nature of practicing scientists' work—through association with under research scientists. Students participate in scientific research, by preparing written reports on their group's experiments, discussion of current research, study of specialized topics, and attendance at research lectures.

Graduate Programs
The graduate programs of the department are designed to train scientists who can participate in research, educational, or governmental environments, and who are experienced in the skills required for teaching biology. In the last two decades, about 250 graduates of this department have subsequently been engaged in college or university teaching, while most of the others are in research positions. A substantial number of students completing their training with an M.S. degree have obtained technical or professional positions. Other graduates are teaching at the secondary-school level or in continuing education.

Prior to registration in August, all new graduate students in Biology take a diagnostic examination covering topics in four areas of biology: developmental biology, genetics, physiology, and ecology. On the basis of the examination results, students may be excused from further work in one or all areas, or may be required to take specific courses to fill in their backgrounds in these areas. Students must make up any undergraduate deficiencies in algebra, calculus, or physics during the first year. A student with a bachelor's degree with an option of the biological sciences must request modification of certain area requirements; the student's degree committee will decide whether portions of the requirements may be waived.

All members of the biology faculty engage in research asking fundamental questions about major biological problems. Areas of departmental research include cell biology, developmental biology, genetics, molecular biology, neurobiology, ecology, behavior, physiology, and parasitology. If appropriate, projects can involve work in one or more of the following departments: graduate students sometimes are advised jointly by faculty in these departments.

On admission, each new graduate student is assigned a temporary advisor, chosen to complement the research interests of the student. The temporary advisor guides the student through the required requirements and acts as the student's advisor. For purposes of graduate student evaluation, research training is categorized under four designations: developmental biology, ecology and behavior, genetics, and physiology. The department offers new students the opportunity to do research in several laboratories, on a rotating basis, if desired; or students may pick one lab to work in.

A committee of faculty from the area represented by the temporary advisor evaluates students initially. After a time, students choose a permanent advisor (advisory and dissertation) and a dissertation (dissertation) committee. Afterwards, responsibility for evaluation is shared by the dissertation committee and the advisor's area committee.

Master of Science in Biology
Although the department emphasizes the Ph.D. degree, two M.S. programs are available.

M.S. with Thesis
The M.S. degree with thesis requires 39 semester hours of graduate credit and a thesis based on original research. Ordinarily, 6-semester hours are assigned to thesis research and writing. The remaining hours are selected in consultation with the student's advisory committee, the basic courses are tailored to student's background and career goals.

Students receive credit for courses they are required to take but not for courses required by the admissions committee to make up undergraduate deficiencies. After their thesis, accepted candidates must pass an oral examination based on the thesis and related subjects.

M.S. without Thesis
The M.S. degree without thesis requires 34 semester hours of graduate credit and a thesis research report for which no more than 4 semester hours of credit may be granted. Credit may be earned in graduate courses in biology or cognate sciences; these courses are determined in consultation with the student's thesis committee and are tailored to fit the student's background and career goals.

Credit received in courses at the 100 level or above—with the exception of courses in biology required to make up deficiencies revealed by the diagnostic examination (see above)—may be included in the 36-semester-hour minimum if approved by the advisory committee. On completion of the hours required and acceptance of the research report by the faculty sponsor, students must pass a written examination covering their graduate program in biology, including the area of their report.

Doctor of Philosophy
Each Ph.D. student's formal or proficiency requirements are determined by his or her dissertation committee on the basis of the student's background and current and prospective research interests. The dissertation committee also determines what portion of the normal course work or proficiency requirements students must complete before taking the comprehensive examination, which applies only to final candidacy for the Ph.D. degree. In this examination, students must demonstrate a knowledge of the major and related fields and the analytic and synthetic ability necessary to become a research-trained scientist.

The program culminates in student preparation of a dissertation based on original, independent research. Acceptance of the defense by the department just precedes the final examination, which covers the thesis and the specifications for the thesis represents.

Financial Aid
All graduate students making satisfactory progress in the department receive support from teaching assistantships, fellowships, or research assistantships provided by the University or by individual research grants administered by faculty members. Endowed and fellowships are also available through federally funded, interdisciplinary training programs in cell and molecular biology and genetics.

The department also participates in the University-sponsored program of teaching-research fellowships and University of Iowa Fellowships, students who apply for these departmental award may be to receive research assistantships.

Most assistantships and other appointments for the following academic year are filled by the end of April, but opportunities occasionally exist for appointments at other times, including the beginning of the fall semester. Requests for appointment should include clear statements of research interest.
BOTANY

Chair: Warren B. Carter
Professor: Robert C. Guerard, Jelly T. Wade
Associate professor: Frank D. Hoffman, Stephen D. Hoddinott
Assistant professors: Michael J. Smith, Amy L. Swanson
Graduate assistant professor: Suqin Chen

Undergraduate degrees offered: B.A., B.S. in Botany

Graduate degree offered: M.S., Ph.D. in Botany

Botany is a science that contributes to our understanding of plants, their significance in the earth's biosphere, their structure, function, reproduction, diversity, evolution, ecology, and relation to human affairs.

Careers for botanists include teaching and research positions in colleges, universities, governmental agencies, and industrial firms. Students majoring in botany often prepare to work in fields related to the plant sciences, such as agriculture, forestry, horticulture, plant breeding, microbiology, the chemistry of natural products, ecology, medicine, environmental law, and pharmacy.

Biology Degree Programs

Undergraduate and graduate degree programs in biology are administered jointly by the departments of Botany and Biology. Degree offerings include the Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Master of Science (M.S.), and the Doctor of Philosophy (Ph.D.). For information on degree and course requirements, see "Biology" in this section of the Catalog.

Undergraduate Programs

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 Botany Requirements

210 Introduction to Botany 4 s.h.
235 Principles of Animal Biology 5 s.h.
2218 Fundamental Genetics 3 s.h.
2313 Plant Anatomy 4 s.h.
290 Plant and Animal Ecology 4 s.h.
2901 Land Plants: An Evolutionary Survey 4 s.h.
2902 Algae and Fungi 4 s.h.

One course from each of the following four areas:

- 131 Biology of the Local Flora 3 s.h.
- 210 Plant Taxonomy 4 s.h.
- 2351 Summer Flora 3 s.h.
- 221 Plant Taxonomy 5 s.h.

- 210 Plant Physiology 4 s.h.
- 2231 Cellular Plant Physiology 4 s.h.
- 2232 Plant Physiology 4 s.h.
- 2351 Summer Flora 3 s.h.
- 210 Plant Taxonomy 5 s.h.

- 210 Plant Biology 4 s.h.
- 2111 Plant Cell Biology 4 s.h.
- 2112 Plant Biology 4 s.h.
- 2113 Plant Cell Biology 4 s.h.

- 2110 Plant Physiology 4 s.h.
- 2114 Cellular Plant Physiology 4 s.h.
- 2115 Plant Physiology 4 s.h.
- 2116 Field Ecology 4 s.h.

- 2111 Plant Ecology 4 s.h.
- 2115 Plant Physiology 4 s.h.
- 2116 Field Ecology 4 s.h.
- 2116 Field Ecology 4 s.h.

Biology of Nonvascular Plants

2102 Algae and Fungi 4 s.h.
2103 Physiology 4 s.h.
2106 Physiology-Lab 4 s.h.
2107 Physiology 4 s.h.
2112 Field Ecology 4 s.h.

Students also must take one additional 300-level course in botany or cognate sciences.

Chemistry Requirements

213 Principles of Chemistry I 3 s.h.
219 Principles of Chemistry II 3 s.h.
215 Principles of Chemistry Lab 3 s.h.
2113 Organic Chemistry I 3 s.h.
2114 Organic Chemistry II 3 s.h.
2115 Organic Chemistry Lab 3 s.h.
2112 Organic Chemistry I 3 s.h.
2114 Organic Chemistry II 3 s.h.
2115 Organic Chemistry Lab 3 s.h.
2116 Organic Chemistry I 3 s.h.
2114 Organic Chemistry II 3 s.h.
2115 Organic Chemistry Lab 3 s.h.

Mathematics Requirements

2201 Mathematics for the Biological Sciences 4 s.h.
2212 Introduction to Statistical Methods (or equivalent) 3 s.h.

Biology of Plants

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 Botany Requirements

210 Introduction to Botany 4 s.h.
235 Principles of Animal Biology 5 s.h.
2218 Fundamental Genetics 3 s.h.
2313 Plant Anatomy 4 s.h.

One course from each of the following four areas (17-21 semester hours)

- 2118 Plant Anatomy 4 s.h.
- 2119 Cell and Molecular Biology 4 s.h.
- 2120 Plant Physiology 4 s.h.
- 2121 Plant Physiology 4 s.h.

- 2125 Plant Physiology 3 s.h.
- 2131 Plant Physiology 4 s.h.

Vascular Plant Diversity

2100 Land Plants: An Evolutionary Survey 4 s.h.
2113 Biology of the Local Flora 3 s.h.
2101 Plant Taxonomy 4 s.h.
2115 Summer Flora 3 s.h.
2102 Paleobotany 4 s.h.
210 Plant Taxonomy 5 s.h.

Ecology and Evolution

2111 Plant Ecology 4 s.h.
2131 Evolution 4 s.h.
2116 Field Ecology 4 s.h.

Mathematics Requirements

2201 Mathematics for the Biological Sciences 4 s.h.
2212 Introduction to Statistical Methods (or equivalent) 3 s.h.
2205 Calculus I 4 s.h.

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 independent research projects guided by faculty members.

In addition to the regular requirements for the B.A. and B.S. degrees, honors students must:

- Maintain an overall grade-point average of 3.20;

- Complete 4.0 semester hours of honors course work with a minimum of 4.0 semester hours of 200-level Honors course work.

- Present a written research report (honors thesis), which has been approved by the student's research advisor, to the botany honors advisor. The honors thesis must be a genuine piece of research that has contributed to the student's research program. The honors committee consists of the student's research advisor, the student's supervisor, and a third faculty member chosen by the student and the honors advisor.

- Complete 4.0 semester hours of 200-level Honors course work.

- Complete 4.0 semester hours of 200-level Honors course work.
Botany • Liberal Arts

Minor
The botany minor requires 15 semester hours of credit in botany, at least 12 of which must be taken at The University of Iowa in courses numbered 2100 and above.

Graduate Programs
An advanced degree enhances career opportunities in botany. The department offers advanced degree work in anatomy, cytology, cell biology, ecology, genetics, plant molecular biology, development and morphogenesis, mycology, paleobotany, palynology, phytogeography, plant biochemistry, and taxonomy. Graduates receive training frequently required in botany and work toward the master's degree in major studies including course work in cognate departments. Each graduate student is assigned a faculty guidance committee to help him or her meet educational goals and plan the course requirements necessary to meet these.

Master of Science
The botany department offers two distinct M.A. degree programs, one with thesis and one without. The M.S. with thesis places greater emphasis on independent research and less on formal course work. It is intended primarily for candidates 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 of study should be prepared during the first semester of residence as a graduate student.
Complete a minimum of 24 semester hours of graduate course work in botany or supporting areas, as prescribed by the guidance committee. At least 12 of these semester hours must be in areas beyond the botany major or in areas beyond the botany major and in other areas of interest. The program of study may be counted toward the 36-semester-hour minimum.
Achieve a grade-point average of 3.00 on all courses—other than research—required to prepare the final examination.
Pass a written examination during the term in which he or she is to graduate. The examination covers the student's coursework 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; 9 semester hours of research and thesis (2222 and 2225) are required; additional research hours may be taken, but no more than 5 may be counted toward the 36-semester-hour degree requirement.
Achieve a grade-point average of 3.00 on all courses—other than research—required to prepare the final examination.
Pass a thesis on research conducted; defend the thesis in an examination during the term in which he or she is to graduate.

Doctor of Philosophy
The Ph.D. is primarily a research degree. It may be earned after the student has conducted original research of sufficient magnitude and value to allow a thesis to be written and successfully defended before the final examination committee. In addition, the student must complete 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 take up for background deficiencies (e.g., chemistry or general botany course work).
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 of residence as a Ph.D. candidate; the program must be approved by the guidance committee.
Fulfill all course work requirements of the program above; changes may be made only with the written (signed) approval of the guidance committee.
Complete an initial research proposal within two or three semesters after admission to the Ph.D. program (i.e., not post-M.S.), the proposal, which should outline the specific objectives, significance, and methodology of the chosen research project, should gain written acceptance from members of the guidance committee; subsequently, copies of the accepted proposal will be distributed to the candidate and all faculty members of the botany department.
Give an oral presentation of the proposed research work to members of the botany department within a short month following acceptance of the initial research proposal; the candidate thereby will be eligible for 1 semester hour credit under 2225 Seminar: Botany (see section on honorary 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 approval; defend the thesis in an examination before the final examination committee; and sign the final examination

Graduate Admission

University Requirements
An application for admission to the Graduate College must be completed and sent to the Director of Admissions, The University of Iowa, Iowa City, Iowa 52242. Official transcripts from each undergraduate and graduate institution attended and scores on the Graduate Record Examination (GRE) aptitude test (verbal and quantitative) 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 Aptitude Test score (verbal plus quantitative) of 1100 or greater, and
Three letters of recommendation.

Provisions
The numerical requirements are not absolute. For example, a student may compensate for a GRE Aptitude Test score slightly below 1100 and 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 bachelor's degrees in other areas will need to register as special students (A9) and take the equivalent of the department's bachelor's degree program prior to consideration for admission. In addition to the botany and ecology courses listed in the undergraduate program, special students will need to complete a computer and mathematics requirement to show equivalency. Graduate students should consult the department chairman or registrar to set up a program as special students.

Ph.D. Program
A grade-point average of at least 3.40 on graduate work;
A GRE Aptitude Test score of at least 1250;
Three letters of recommendation; and
A master's degree in botany or a biology, science,

Provisions
The numerical requirements are not absolute. For example, a student may compensate for a GRE Aptitude Test score
Financial Aid
New students wishing to apply for scholarships must submit an application and graduate school forms before August 1. The Graduate School requires that all applicants for financial assistance provide supporting documentation. These forms may be obtained from the Office of Admissions, Graduate School, The University of Iowa, natural science, 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. Accommodation for undergraduate students is available from the Office of Admissions, Graduate School, The University of Iowa, natural science.

Special Facilities and Activities
There is an excellent departmental library in the Chemistry-Botany Building. Students conducting research projects requiring the cultivation of plants have access to greenhouse facilities and a cultural control room with controlled environments. A plant physiology laboratory with associated greenhouses is available.

For Undergraduates and Graduates
A number of research laboratories are equipped with standard apparatus for research in growth regulation, photosynthesis, plant biochemistry, biochemical systems, and photochemistry. The laboratories have facilities for research in microorganisms, plant biochemistry, and biochemistry. The laboratories contain facilities for research in microorganisms, plant biochemistry, and biochemistry. The laboratories have facilities for research in microorganisms, plant biochemistry, and biochemistry.
Undergraduate Programs

Bachelor of Science

Present and projected demand for chemists with a B.S. degree is excellent in research and in control and process-development work. The B.S. program also provides all the prerequisites for graduate work in chemistry or biochemistry. These are the major requirements for the B.S. degree.

4.13-14 Principles of Chemistry I-II 6 s.h.
4.16 Principles of Chemistry Lab I 2 s.h.
4.17 Basic Methods of Chemistry 2 s.h.
4.111-112 Analytical Chemistry I-II 6 s.h.
4.121-122 Organic Chemistry I-II 6 s.h.
4.125 Inorganic Chemistry 2 s.h.
4.211-212 Physical Chemistry I-II 6 s.h.
4.141-142 Organic Chemistry Laboratory 3 s.h.
4.163 Analytical Measurements 3 s.h.
4.144 Physical Measurements 3 s.h.
4.153 Inorganic Chemistry Laboratory 3 s.h.
4.170 Advanced Inorganic Chemistry 3 s.h.
Integral calculus (22M:35-36 Calculus I-II or 22M:25-26 Calculus I-II) 8 s.h.
Introductory Physics (211-11-12 recommended, 231-11-12 College Physics accepted) 8 s.h.

Credit earned in advanced science elective courses plus credit earned in 4.162 Undergraduate Research must total at least 6 semester hours. Advanced science electives may be chosen in the areas of chemistry, mathematics, computer science, astronomy, physics, engineering, radiation biology, biochemistry, microbiology, pharmacology, pharmacy, botany, biology, geology, or psychology.

Bachelor of Arts

The B.A. curriculum in chemistry provides a general education with some concentration in fundamental chemistry, but with a wider choice of electives than the B.S. major. Students electing this program may qualify for high school teaching if they meet teaching certification requirements. By selecting appropriate electives, students can meet entrance requirements for medicine, dentistry, or other professional programs. The B.A. program meets the B.S. requirements in chemistry. These are the major requirements for the B.A. degree.

4.13-14 Principles of Chemistry I-II 6 s.h.
4.16 Principles of Chemistry Lab I 2 s.h.
4.17 Basic Methods of Chemistry 2 s.h.
4.111-112 Analytical Chemistry I-II 6 s.h.
4.121-122 Organic Chemistry I-II 6 s.h.
4.125 Inorganic Chemistry 2 s.h.
4.131-132 Physical Chemistry I-II 6 s.h.
4.141 Organic Chemistry Laboratory 3 s.h.
4.143 Analytical Measurements 3 s.h.
4.144 Physical Measurements 3 s.h.

Integral calculus (22M:35-36 Engineering Calculus I-II or 22M:25-26 Calculus I-II) 8 s.h.
Introductory Physics (211-11-12 recommended, 231-11-12 College Physics accepted) 8 s.h.

Advanced courses in chemistry, biology, mathematics, or other scientific areas are recommended.

Minor

The minimum requirements for a minor in chemistry are 15 semester hours, including 4.13-14 Principles of Chemistry I-II for 4.16 Prereqs of Chemistry Lab I, and 12 semester hours taken at the University of Iowa in advanced chemistry courses numbered 101 and above.

Teacher Certification

The chemistry courses required for the B.S. or B.A. degrees satisfy the major requirements for teaching in secondary schools. A minor in chemistry satisfies the requirements for a teaching emphasis in chemistry (see "Science Education" in the "College of Liberal Arts" section of the Catalog).

Graduate Programs

Master of Science

The department offers the M.S. degree, with or without thesis, in analytical, inorganic, organic, and physical chemistry and in chemical physics. Candidates for the M.S. must demonstrate minimal proficiency in analytical, inorganic, organic, and physical chemistry, by passing specific examinations or by enrolling in suitable core courses. This requirement must be completed by the end of the second year of enrollment. At least 30 semester hours of graduate work are required for the master's degree. A minimum grade-point average of 3.50 is required for admission to the master's examination.

Doctor of Philosophy

A program of study for the Ph.D. degree in the areas listed for the M.S. degree includes the minimal proficiency examinations, core courses as may be necessary, a minimum of 11 semester hours of advanced course work, and research. Students who have met the course requirements with a cumulative grade-point average of 3.00 are admitted to the oral comprehensive examination upon completion of the requirements and upon approval by the examining committee. This examination must be taken no later than the second year of enrollment.

Upon completion of the Ph.D. research, the student prepares the dissertation. The final examination consists of oral and defense of the thesis, at which time at least one member of the dissertation committee must be present.

Interdisciplinary Programs

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

Admission

Applicants for graduate admission should have a bachelor's degree in chemistry with a recommended grade-point average above 3.30. Most of the graduate students who are admitted receive financial support, and application forms may be obtained by writing to the Department of Chemistry.

Facilities

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

The department's excellent library facilities are supplemented by the special retention and collection work in chemical and chemical engineering journals, and subscriptions to a large number of current scientific journals.

Courses

Primarily for Undergraduates

Students planning to take more than one year of chemistry should take 4.13, 4.14, and 4.16. Students requiring only one year of chemistry may take 4.7, 4.8, and 4.16.

6000 Cooperative Education Internship 0 s.h.
65 Technology and Society 3 s.h.

4.7 General Chemistry I 3 s.h.
Introductory to basic concepts of chemistry for students with no high school chemistry background. This course is primarily an introduction to the language and methodology of general chemistry and its applications. Credit will not count as credit for the major.

4.8 General Chemistry II 3 s.h.
Introductory to organic chemistry and biochemistry for students with passing grade in 4.7. Credit will not count as credit for the major.

4.110 Principles of Chemistry I 3 s.h.
Introduction to the basic principles of chemical bonding and chemical reactions. Prerequisites: 4.5 or 4.6 with a score of 26 or a score of 30 as the basic math proficiency score.
Major in Classics (Greek and Latin)
The B.A. degree with a major in classics requires a minimum of 36 semester hours of major credit, 30 of which must be in Greek and Latin language courses. The following courses, or their equivalents, are required.

14:11-12 Elementary Greek I 6 s.h.
14:12-13 Second-Year Greek I 6 s.h.
14:12-13 Second-Year Greek II 6 s.h.
12:01-12-02 Second-Year Latin I 6 s.h.
12:01-12-02 Second-Year Latin II 6 s.h.
12:01-12-02 Roman History and Herodotus 6 s.h.
20:01 Age of Cicero 3 s.h.
20:02 Age of Augustine 3 s.h.
14:17-17 Elementary Latin Composition 3 s.h.
20:17-17 Elementary Latin Composition 3 s.h.

Honors
For exceptional seniors who attain a 3.50 grade-point average in their first three years of classwork, two courses are offered in honors program, one each semester of the senior year. For 3 semester hours each. The readings and discussions are on an academic major or a field in ancient history or literature chosen by students and the instructor. During the first semester students present an essay every other week, at the end of the second semester students present a long paper, which is examined by at least three faculty members of the department.

Minors
A minor in classics requires a minimum of 15 semester hours, at least 12 of which are 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 6 s.h.
All courses numbered 14:11-12 or higher.

Latin
20:16-17 Second-Year Latin I-II 6 s.h.
20:01 Age of Cicero 3 s.h.
20:02 Age of Augustine 3 s.h.
All courses numbered 20:16-17 or higher.

Classes
14:11-12 Second-Year Greek I 6 s.h.
20:01-20:17 Second-Year Latin I-II 6 s.h.
20:01 Age of Cicero 3 s.h.
20:02 Age of Augustine 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 14:11-12 Elementary Greek and 14:11-12 Second-Year Greek. Students who want to meet the requirement by studying Latin may elect 20:16-17 Accelerated Latin and 20:16-17 Second-Year Latin I-II.
Graduate Programs

For the general requirements of the Graduate College, including the comprehensive examination, 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 100-109.

Master of Arts

The department offers the M.A. degree in Latin, Greek, or classics. Candidates must earn a minimum of 30 semester hours of course credit in courses numbered 100 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 core-comprehensive course in Greek readings (3 s.h.)
A core-seminar course in Latin readings (3 s.h.)
Advanced Greek composition (3 s.h.) or equivalent
Advanced Latin composition (3 s.h.) or equivalent

Any two of the following three courses: 4 s.h. course in Indo-European philology 3 s.h. course in Greek paleography

Any 3 s.h. graduate-level art course
A total of 42 semester hours of specified courses is required. The minimum Graduate College requirement is 72 semester hours; the difference of 30 semester hours is to be made up in regular departmental offerings.

Required Ph.D. Examinations

Precomprehensive
French competence
German competence
Latin competence

One oral exam must be attempted by the end of the first year of graduate study.

Ph.D. Comprehensive

The comprehensive examination must be filed at least three weeks before the date of the examination. Candidates have the option of taking written examinations in any sequence.

Greek literature (including passages)–4 hours, written
Latin literature (including passages)–4 hours, written
Ancient history–4 hours, written
Special field or author–3 hours, written
One or written examination–1 hour

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's best-vetted collection of slides on classical subjects, and a small library.

Associated with the department, the classical museum contains a valuable collection of casts, vases, and incrustations in stone from Mycenae, Korinthis, and Herculaneum.

The University is a supporting foundation of the American School of Classical Studies at Athens, the American Academy in Rome, and the Vergilius Society, thereby making those facilities available to its faculty and graduates.

Courses

Greek for Undergraduates

161 Equinox Greek
Fundamentals of Attic Greek and basic concepts of Greek composition.

162 Elementary Greek
Books one, two Greek authors. Continuation of 161, which is prerequisite.

165 New Testament Greek
Reading knowledge of New Testament Greek. Prior knowledge of Greek is assumed, but is familiarity with any other foreign language is prerequisite.

166 Modern Greek Language and Culture I
A dual of 12 S.H. courses, combining modern Greek language training with cultural instruction.

167 Modern Greek Language and Culture II
Dual of 12 S.H. courses, combining modern Greek language training with cultural instruction.

168 Modern Greek Language and Culture III
Dual of 12 S.H. courses, combining modern Greek language training with cultural instruction.

169 Modern Greek Language and Culture IV
Dual of 12 S.H. courses, combining modern Greek language training with cultural instruction.

171 Second Year Greek I
Reading of selected texts of Greek prose and poetry. Prerequisite: 161 is a pre requisite.

172 Second Year Greek II
Continuation of 171, which is a prerequisite.

Greek for Undergraduates and Graduates

1631 Honor and Status
A dual of 12 S.H. courses, including courses in Greek literature, political and social thought, and Greek mythology.

1632 Homer
Books one and Homer. Continuation of 1631, which is a prerequisite.

1634 Greek and Persia
Courses leading to the Persian War, (4, and 5). In each, the dominant thematic emphasis will be an attempt to present a full understanding of the course readings in English, for 1634 Course on Herodotus.

1635 Fifth-Century Athens
A dual of 12 S.H. courses, including courses in Greek literature, political and social thought, and Greek mythology. 1635 is a prerequisite for 1636.

Latin for Undergraduates

2600 Comparative Education Internship
A dual of 12 S.H. courses, including courses in Latin literature and social studies in Latin society.

2601 Elementary Latin
Introduction to Latin morphology and syntax readings in Latin.

2602 Elementary Latin
Continuation of 261, which is a prerequisite.

2610 Advanced Latin
Courses leading to the ancient world, including courses in Latin literature and social studies in Latin society.

2615 Advanced Latin
Courses leading to the ancient world, including courses in Latin literature and social studies in Latin society.

2620 Literature Thea
A dual of 12 S.H. courses, including courses in Latin literature and social studies in Latin society.

Latin for Undergraduates

2600 Comparative Education Internship
A dual of 12 S.H. courses, including courses in Latin literature and social studies in Latin society.

2601 Elementary Latin
Introduction to Latin morphology and syntax readings in Latin.

2602 Elementary Latin
Continuation of 261, which is a prerequisite.

2610 Advanced Latin
Courses leading to the ancient world, including courses in Latin literature and social studies in Latin society.

2615 Advanced Latin
Courses leading to the ancient world, including courses in Latin literature and social studies in Latin society.
COMMUNICATION STUDIES

Chancellor: J.C. Graylock

Professor: Charles F. Ayres, Vincent Addonizio, Samuel L. Libresco, Interior Design.


Professor emeriti: Hugh V. Corder, Oxtoby, Hendrickson, Richard H. McCann, Hugh F. Shepard.

John Wani

Associate professor: Randy Minowawa, George Gillette, John-Loyn

Assistant professor: Robert Kemp, Legington, Purdy, Allen Morris, John Peters, Lauren Rahalla, Gregory Steffel.

Undergraduate degree offered: B.A. in Communication Studies

Graduate degrees offered: M.A., Ph.D. 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 develop themselves to their society, and to an essential process for the operation of society, especially a highly technological society. The department also is concerned with communication at artistic as well as functional expression. These concerns are manifested in studies of interpersonal, group, public, broadcast, and film communication.

The department has five major divisions, with whose emphases courses are described under the headings of broadcasting and film (B.A., M.A., Ph.D.), communication (B.A., M.A., Ph.D.), and rhetorical studies (M.A. and Ph.D.). The department is interested in the department should talk with advisors in the University Undergraduate Honors Program, Academic Counselor, Sophomore, Juniors, and are assigned departmental advisors. Anyone wishing to take courses other than those fulfilling General Education Requirements must have a 2.0 cumulative grade point average.

Undergraduate Programs

Once admitted to the department as undergraduate majors, students who wish to participate in the Bachelor of Arts degree must earn a minimum of 30 semester hours as described under "Broadcasting and Film," Communication," below. Students who seek teacher certification must earn 33 semester hours as described under "Communications Education," below. In all three of these undergraduate programs, all majors must at least four foundation courses in four core subject areas: broadcasting, communication, film, and rhetoric. Foundations courses in the four core areas are as follows:

Broadcasting: 36H-25 Mass Media and Mass Society

Communication: 30C-50 Communication Theory in Everyday Life

Film: 36H-40 Introduction to Film Analysis

36H-51 Survey of Films

Rhetoric:

"30C - Persuasion in Society or

36C Communication and Contemporary Culture"

Admission:

To be considered for admission to the department B.A. programs, applicants must:

Complete by the end of the semester in which application is made at least 30 semester hours of approved undergraduate credit.

Have at least a 2.50 grade-point average on at least three foundation courses representing three different core areas.

Have at least a 2.50 cumulative grade-point average.

Submit a statement indicating why they want to major in the department, mentioning special talents, interests, or abilities that suggest exceptional promise.

These and other factors are considered by the undergraduate admissions committee. They are minimum criteria; meeting them does not guarantee admission. The number of students admitted each year varies with available instructional resources. This means that majors require the highest quality education possible. Students who do not meet these 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 regular semesters and the fourth week of summer school.

Each admission requires take effect for all students, regardless of when they were admitted to the University, on the first day of regular registration for the 1986-87 fall semester. The degree requirements (30 or 33 semester hours, depending on a course of program) apply to students who first enroll in the University for the 1987-88 fall semester. Students who entered before Fall 1983 and who will graduate before Fall 1982 may choose to complete the major under the old requirements, which are listed in the 1960-64 University of Illinois General Catalog. No B.A. degrees 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 3.0 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, must be approved under the supervision of a faculty member who has experience in the area selected. Students registering for the thesis, selected candidates first must choose a faculty member to supervise the project, and then a prospectus for the project approved by that faculty member and the departmental honors adviser. The completed thesis is to be defended by a committee consisting of the faculty adviser and the departmental honors adviser, and one other faculty member.

Students who enroll in the honors program also are eligible to take any communication studies course with an honors designation by completing an agreement with the course instructor for special work in that course. Forms providing examination may be obtained from the honors adviser.

Graduate Programs

Master of Arts

A student can earn a general M.A. degree in the department or a more specialized degree either in one of the divisions or in an accord combination of divisions.

Departmental requirements for the Master of Arts degree are:

A minimum of 30 semester hours, including 3000 Introduction to Research or equivalent, and at least two courses in research methodology.

A research thesis or, for the nonthesis degree, a combination of a paper and presentation, a paper including significant original research.

Successful completion of a six-hour written examination, the scope of which is determined by the candidate's division and graduate committee.

At least a 3.0 cumulative grade-point average for all courses in the plan of study.

February 1 is the application deadline for the following summer session or fall semester. Applicants who meet this deadline are given the first chance of admission. The minimum cumulative undergraduate grade-point average required for admission in good standing is 3.0.

Educational Specialist (for Junior College Teaching)

Departmental requirements for the educational specialist degree are:

A minimum of 60 semester hours, including 3000 Introduction to Research, a course in teaching, communications as an approved seminar, and at least 15 semester hours completed in the College of Education graduate program in higher education.
Successful completion of a research report:
A seminar in an assigned teaching position;
Satisfactory performance on a final examination covering areas of learning agreed upon by the student and his or her graduate committee;
Successful completion of such additional requirements as are specified by the departmental division in which the student's work is concentrated.

Doctor of Philosophy

Departmental requirements for the Doctor of Philosophy degree are:
A minimum of 30 semester hours of graduate credit, exclusive of dissertation, and including 15 hours in a dissertation course, in an approved research area;
A minimum of 10 semester hours of dissertation credit;
3600 Introductory to Research or its equivalent;
At least two courses in Theory taken within the department, and other areas as determined by the student's advisor and graduate committee, in consultation with the student;
Successful completion of a qualifying and a dissertation examination in the student's major research areas;
A satisfactory scholarly dissertation;
A 3.0 minimum cumulative grade point average for all courses in the plan of study.

February 1 is the application deadline for the following summer session or fall semester. Applicants who miss this deadline have the best chance of admission. Applicants are selected based on composite consideration of the applicant's undergraduate achievements, letters of reference and other evidence of scholarly potential or achievement, such as Graduate Record Examination (GRE) Qualitative Test results and samples of scholarly work.

Facilities

The Communication Studies Building, one of the newest facilities on campus, has been designed specifically to meet both research and technical needs. Included are two television studios, a state-of-the-art television postproduction facility, a 150-screen stage, a scene shop, areas for animation and graphics production, a radio studio, and an advanced 24-track audio studio. This serves the needs of the departments throughout the program. A large pool of equipment is available to support student work in both studio and location settings. Students and teachers 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 in the land in higher education.

Interdivisional Courses

3600 Introduction to Communication Studies
A 3-credit course
3610 Workshop in Communication Studies
A 3-credit course
3615 Communication as a Profession
A 3-credit course
3620 Workshop in Teaching
A 3-credit course
3630 Introductory to Communication Studies
A 3-credit course
3640 Workshop in Evaluation
A 3-credit course
3660 Research in Communication Studies
A 3-credit course
3665 Introductory to Research
A 3-credit course
3670 Sign Language Interpretation
A 3-credit course
3675 B.S. in Social Studies
A 3-credit course
3680 J.D. in Social Studies
A 3-credit course

Communication Education

Professor in charge: David W. Fosky

The communication training major requires a minimum of 36 semester hours of course work in the Department of Communication Studies. Students must take four foundation courses across four core areas, four state required communication courses, two theater arts courses, and any other communication courses, with the approval of a communication education adviser.

To strengthen both their major and their employment opportunities, students are advised to complete a minor in Public Relations, English, Journalism, and Theatre, and to accumulate a record of achievement in forensics, broadcasting, and film, theater, and television.

Teaching Minor Certification in Communication Studies

Completion of 21 semester hours of coursework in communication and theater arts is required. These hours must be approved by the student.

Communication

Professor in charge: Ranny Hison

Within a liberal arts philosophy, communication majors study oral, written, "visual," and electronic messages and media, in their environments, from theoretical, critical, historical, and social-scientific perspectives. Students also improve their thinking skills, interpreting research experiences, and skills in critical thinking skills in critique. Combined with a broad education in language, social studies, social sciences, environmental science, journalism, and business (especially marketing and administration), this major prepares students for careers in business, national and international organizations, mass media, and government. Other uses the major in advanced studies in teaching, law, business, and the ministry, and for graduate study in law, business, and the ministry. To graduate with a B.A. in communication, students must complete 30 semester hours of course work in the department, including:

Four foundation courses across four core areas, at least four advanced courses in communication studies, including at least two additional courses in communication studies, at least two additional courses in communication studies, and at least two additional courses in communication studies.

Courses

3407 Introduction to Communication Major
3.b. 3 hours
3410 Workshop in Communication Studies
A 3-credit course
3415 Communication as a Profession
A 3-credit course
3420 Workshop in Teaching
A 3-credit course
3430 Introductory to Communication Studies
A 3-credit course
3440 Workshop in Evaluation
A 3-credit course
3460 Research in Communication Studies
A 3-credit course
3465 Introductory to Research
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Courses

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3.b. 3 hours
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A 3-credit course
3415 Communication as a Profession
A 3-credit course
3420 Workshop in Teaching
A 3-credit course
3430 Introductory to Communication Studies
A 3-credit course
3440 Workshop in Evaluation
A 3-credit course
3460 Research in Communication Studies
A 3-credit course
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Communication

Professor in charge: Ranny Hison

Within a liberal arts philosophy, communication majors study oral, written, "visual," and electronic messages and media, in their environments, from theoretical, critical, historical, and social-scientific perspectives. Students also improve their thinking skills, interpreting research experiences, and skills in critical thinking skills in critique. Combined with a broad education in language, social studies, social sciences, environmental science, journalism, and business (especially marketing and administration), this major prepares students for careers in business, national and international organizations, mass media, and government. Other uses the major in advanced studies in teaching, law, business, and the ministry, and for graduate study in law, business, and the ministry. To graduate with a B.A. in communication, students must complete 30 semester hours of course work in the department, including:

Four foundation courses across four core areas, at least four advanced courses in communication studies, including at least two additional courses in communication studies, at least two additional courses in communication studies, and at least two additional courses in communication studies.

Courses

3407 Introduction to Communication Major
3.b. 3 hours
3410 Workshop in Communication Studies
A 3-credit course
3415 Communication as a Profession
A 3-credit course
3420 Workshop in Teaching
A 3-credit course
3430 Introductory to Communication Studies
A 3-credit course
3440 Workshop in Evaluation
A 3-credit course
3460 Research in Communication Studies
A 3-credit course
3465 Introductory to Research
A 3-credit course
3470 Sign Language Interpretation
A 3-credit course
3475 B.S. in Social Studies
A 3-credit course
3480 J.D. in Social Studies
A 3-credit course

Communication Education

Professor in charge: David W. Fosky

The communication training major requires a minimum of 36 semester hours of course work in the Department of Communication Studies. Students must take four foundation courses across four core areas, four state required communication courses, two theater arts courses, and any other communication courses, with the approval of a communication education adviser.

To strengthen both their major and their employment opportunities, students are advised to complete a minor in Public Relations, English, Journalism, and Theatre, and to accumulate a record of achievement in forensics, broadcasting, and film, theater, and television.

Teaching Minor Certification in Communication Studies

Completion of 21 semester hours of courses, work in communication and theater arts is required. These hours must be approved by the student.
improves speech, activities in the state, and as members of competitive intercollegiate debate and intramural events. Total enroled scholarships are available.

Courses
A 3.00 cumulative grade-point average is required for enrollment in all courses except 366.23, 366.40, and 366.60.

Additional prerequisites are based on course descriptions.

362C Principles of Speech Communication 3.00
Up to 3 credits of speech communication courses may be taken in 362.23, 362.30, or 362.35.

362D Communicating in Public
Up to 3 credits of speech communication courses may be taken in 362.23, 362.30, or 362.35.

362E Communicating in Public
Up to 3 credits of speech communication courses may be taken in 362.23, 362.30, or 362.35.

362F Group Communication
Practise and metpro role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362G Intercultural Communication
Introduction to basic concepts and receiving and interpreting informal social interaction; whether one is interested in the field of communication.

362H Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362I Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362J Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362K Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362L Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362M Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362N Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362O Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362P Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362Q Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362R Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362S Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362T Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362U Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362V Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362W Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362X Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362Y Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

362Z Practical Role Application of Group Communication
Practice in group communication, role application of group-communication techniques, leadership, and group participation, projects in oral decision and action.

363A Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363B Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363C Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363D Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363E Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363F Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363G Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363H Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363I Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363J Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363K Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363L Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363M Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363N Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363O Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363P Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363Q Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363R Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363S Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363T Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363U Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363V Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363W Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363X Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363Y Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

363Z Persuasion in Society
Examination of theories of persuasive communication and the ways in which these theories are applied in everyday communication.

364A Communication and Computer Culture
Examination of the role of communication in society, including the effects of mass media on society.
Rhetorical Studies

Professor in Charge: Michael Calcagno McGee

The program in rhetorical studies broadens the study of rhetoric beyond the 10-year-old discipline. It is built upon foundations courses in the history of rhetorical practices, the criticism of rhetorical discourse, and theoretical relationships between rhetorical activities and other dimensions of society. Some foundation courses in history and criticism are offered at the 100-level and are listed under "Communication" in this section of the Catalog; the others begin at the 200 level. Foundation courses in rhetorical theory, devoted to survey bodies of academic writing about rhetoric, are offered at the 300 level. Advanced courses in special areas of historical theory are offered at the 400 level. Prospective majors (200 level) and seniors (300 level) allow students to develop expertise in various historical, critical, and rhetorical approaches to rhetoric and communication.

Master of Arts

The MA program in rhetorical studies reassess basic knowledge of rhetorical theory, criticism, and theory. That goal is met by work in the division and its five other parts of the department and University. The degree is intended to build a strong foundation for teaching in high schools and junior colleges or for proceeding to the doctorate. Efforts are made to tailor individual programs of study to students' needs and career goals. Minimal requirement for the M.A. in rhetorical studies is the MA requirements:

- 26010 Introduction to Rhetoric
- At least 15 semester hours in courses in major field of specialization (any course number 300 or above)
- At least 6 semester hours of courses in all other divisions of 305 of related courses, etc.

A comprehensive examination across these areas of study determined by students and advisors.

Doctor of Philosophy

The program leading to the Ph.D. in rhetorical studies is designed to give candidates a master's level of advanced course work and to provide a research competence essential to a life of productive scholarship. In the related departments—politics, science, history, sociology, English, communication, literature, American studies, and journalism—complements rhetorical studies course offerings. Many doctoral students also do work in the related fields of law, broadcasting, film, or communication systems and technology. Opportunities and their research skills.

Prospective, or information on basic requirements should write to the department. Teaching and research assistantships are available, evaluation of these applications begins mid-February each year.

Courses

- 242020 Historical Criticism
- 242220 Symbolic Analysis
- 242320 Introduction
- 242520 American Public Affairs
- 242720 Victorian Literature
- 242820 American Politics
- 242920 American Studies
- 243120 Classical Studies
- 243220 Modern Studies
- 243320 Literary Theory
- 243420 Contemporary Studies
- 243520 Medieval Studies
- 243620 Renaissance Studies
- 243720 Modern Studies
- 243820 Contemporary Studies
- 243920 Medieval Studies
- 244020 Medieval Studies
- 244120 Renaissance Studies
- 244220 Modern Studies
- 244320 Contemporary Studies
- 244420 Medieval Studies
- 244520 Renaissance Studies
- 244620 Modern Studies
- 244720 Contemporary Studies
- 244820 Medieval Studies
- 244920 Renaissance Studies
- 245020 Modern Studies
- 245120 Contemporary Studies
- 245220 Medieval Studies
- 245320 Renaissance Studies
- 245420 Modern Studies
- 245520 Contemporary Studies
- 245620 Medieval Studies
- 245720 Renaissance Studies
- 245820 Modern Studies
- 245920 Contemporary Studies
- 246020 Medieval Studies
- 246120 Renaissance Studies
- 246220 Modern Studies
- 246320 Contemporary Studies
- 246420 Medieval Studies
- 246520 Renaissance Studies
- 246620 Modern Studies
- 246720 Contemporary Studies
- 246820 Medieval Studies
- 246920 Renaissance Studies
- 247020 Modern Studies
- 247120 Contemporary Studies
- 247220 Medieval Studies
- 247320 Renaissance Studies
- 247420 Modern Studies
- 247520 Contemporary Studies
- 247620 Medieval Studies
- 247720 Renaissance Studies
- 247820 Modern Studies
- 247920 Contemporary Studies
- 248020 Medieval Studies
- 248120 Renaissance Studies
- 248220 Modern Studies
- 248320 Contemporary Studies
- 248420 Medieval Studies
- 248520 Renaissance Studies
- 248620 Modern Studies
- 248720 Contemporary Studies
- 248820 Medieval Studies
- 248920 Renaissance Studies
- 249020 Modern Studies
- 249120 Contemporary Studies
- 249220 Medieval Studies
- 249320 Renaissance Studies
- 249420 Modern Studies
- 249520 Contemporary Studies
- 249620 Medieval Studies
- 249720 Renaissance Studies
- 249820 Modern Studies
- 249920 Contemporary Studies

Graduate Programs

These programs lead to the Master of Arts degree in communication studies, and film studies, and production studies. Candidates in graduate studies and film studies emphasize critical,
Master of Fine Arts in Translation

The M.F.A. in translation promotes creative performance and scholarship in foreign languages, literature, criticism, and cultural history. The aim of the program is to encourage the practice of literary translation and to foster greater awareness of the tasks, contributions, and possibilities of the Iowa Translation Workshop in the overall course in the program. Admission to the program is made on the basis of a submitted portfolio, including translations into and original writing in English, as well as supporting evidence of competence. Degree requirements include a thesis, usually a book-length collection of poems or stories, or a short novel, translated out of the original language into English and accompanied by an introductory critical analysis. A total of 48 semester hours of graduate study is required, 24 of which must be taken at The University of Iowa. Besides workshop hours, course work includes study of foreign literature, creative writing, stylistics, 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 their comparative literature.

Doctor of Philosophy

Students seeking the doctorate in comparative literature study at least three literatures, one in historical depth and two others in limited areas of specialization. Students are encouraged to include an interdisciplinary area of concentration. All candidates devote a portion of their programs to comparative study, bringing the areas into focus. Specific areas and interdisciplinary areas are determined by the student in consultation with appropriate faculty members. Some typical critical and interdisciplinary areas are (1) European Renaissance, romanticism, and poststructuralism, (2) narrative theory in literature and film, (3) mythology and folklore, (4) women in literature, (5) oral literature in antiquity and today, and (6) religion, rhetoric, and the theory of social interaction. The Ph.D. dissertation should demonstrate the candidate's ability to write a substantial piece of scholarship or criticism. A translation of a work of sufficient significance and linguistic complexity preceded by a critical introduction, may serve as an acceptable dissertation. The final oral examination consists of the dissertation and 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; knowledge of at least two foreign languages is a prerequisite for doctoral study. Further information is available in the predoctoral guide for graduate students, in comparative literature, available from the program office.

Courses

4408 Cooperative Education Internship 5 h.
4930 Major Topics in World Literature I 3 h.
4935 Non-Western Literary Traditions 5 h.
4936 Undergraduate Seminar 3 h.
4960 Introduction to Critical Problems 3 h.
5460 Elective comparative literature course work at the 500 level 6 h.

Foreign Literature

Students should take 36 semester hours of courses in one foreign language (read in the original language) beyond those courses taken to satisfy the General Education Requirement in foreign language (one course in composition and conversation may count toward the major).

Related Areas

Students should take 6 semester hours of courses in a related area (e.g., English and American literature, film, linguistics, anthropology, philosophy, history) or courses in a second foreign language.

Minor

Students majoring in other disciplines may acquire a minor by successfully completing 7.5 semester hours of work in comparative literature, at least 12 semester hours of which must be in courses at The University of Iowa numbered 4800 and above. There is no specific foreign language requirement for the minor.

Graduate Programs

Master of Arts

The Master of Arts degree in comparative literature requires 36 semester hours of study of literature in an international context, concentrating on two or more national literatures and on the theory and study of literature in general. In consultation with faculty advisors, students combine courses in comparative literature and related disciplines to design a coherent program of study. Formal degree requirements may be satisfied by a written examination on reading list agreed upon by students and their advisors, or by a written thesis and an oral examination on the thesis and its relation to other courses and interests in comparative literature. The M.A. also may be awarded after 36 semester hours of graduate study with a grade-point average of 3.25, and following successful completion of the comprehensive examination for the Ph.D.

Doctor of Philosophy

Students seeking the doctorate in comparative literature study at least three literatures, one in historical depth and two others in limited areas of specialization. Students are encouraged to include an interdisciplinary area of concentration. All candidates devote a portion of their programs to comparative study, bringing the areas into focus. Specific areas and interdisciplinary areas are determined by the student in consultation with appropriate faculty members. Some typical critical and interdisciplinary areas are (1) European Renaissance, romanticism, and poststructuralism, (2) narrative theory in literature and film, (3) mythology and folklore, (4) women in literature, (5) oral literature in antiquity and today, and (6) religion, rhetoric, and the theory of social interaction. The Ph.D. dissertation should demonstrate the candidate's ability to write a substantial piece of scholarship or criticism. A translation of a work of sufficient significance and linguistic complexity preceded by a critical introduction, may serve as an acceptable dissertation. The final oral examination consists of the dissertation and its background.
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. have similar major requirements, but their college requirements differ. The B.B.A. program is designed to prepare students for a career in business, economics or an allied field. The B.A. program is designed to prepare students for graduate work in economics related to business and technical fields. The B.B.A. program is designed for students seeking a fine technical liberal arts background.

Students seeking a B.A. or B.B.A. degree in economics may waive 3 semester hours of the General Education Requirement in social sciences.

Bachelor of Arts

These are the requirements for the B.A. degree with a major in economics:
222:25 Elementary Statistics and Inference or any of the following:
222:17 Quantitative Methods I and 222:9 Quantitative Methods II
6E:05 Economic Statistics or 6E:71 Statistical Analysis

Twenty-seven semester hours of credit in 100-level economics courses, including 6E:110 Microeconomics and 6E:105 Macroeconomics

Most 100-level courses in economics have as prerequisites both 6E:1 Principles of Microeconomics and 6E:2 Principles of Macroeconomics. Some of the 100-level courses in economics may have additional course requirements. The credit earned in 6E:100 Price, Employment, and Production Theory cannot be counted toward the 20 semester hours of 100-level economics course credit required for the B.A. degree.

Bachelor of Science

The B.S. program in economics requires these courses and electives:
209:05-20 Calculus I-IV
222:120 Probability and Statistics

Twenty-seven semester hours of credit in 100-level economics courses, including 6E:110 Microeconomics, 6E:105 Macroeconomics, and 6E:134 Methods of Quantitative Economics

Credit earned in 6E:100 Price, Employment, and Production Theory cannot be counted toward the 20 semester hours of 100-level course credit.

Minor

The minor in economics requires at least 15 semester hours of credit in economics. Twelve of these semester hours must be taken at The University of Iowa in courses numbered 6E:100 and above.

Honors

Students working toward the B.A. or B.B.A. degrees with an economics major are encouraged to take part in the honors program in economics. The honors program offers high-achieving students an opportunity to pursue special research interests.

To enter this program, students should have completed both 6E:110 Microeconomics and 6E:105 Macroeconomics, and must have an overall grade-point average of at least 3.60. Honors students enroll in 6E:110 Honors Seminar and complete an honors thesis, supervised by an instructor, and an oral examination on their honors work. To graduate with honors, students must maintain a 3.30 grade-point average. Interested students should consult the departmental honors advisor before the second semester of their junior year.

Bachelor of Business Administration

The program for the B.B.A. degree is described in the "College of Business Administration" section of the Catalog.

Course Work for Nonmajors

For nonmajors, departmental course 6E:1 Principles of Microeconomics and 6E:2 Principles of Macroeconomics satisfy the College of Liberal Arts General Education Requirement in social sciences and provide an introduction to specialized topics of upper-division courses. Students with limited exposure to business or economics may examine the economic factors of current public policy issues in 6E:7 Contemporary Economic Problems and Policy.

Course work in economics can be related to majors in many other fields—for example, history majors might take 6E:111 American Economic History and 6E:105 Macroeconomics, political science majors might take 6E:119 Economics of the Government Sector and 6E:111 Economics of American Industry.

A number of students combine related interests by pursuing double majors in economics and in fields such as computer science, geography, history, mathematics, political science, sociology, or statistics.

Graduate Program

The department offers the Masters of Arts (M.A.) and the Doctor of Philosophy (Ph.D.) degrees. The doctoral program has a theory and quantitative core enhanced by a set of field courses and is designed to provide students with rigorous training in microeconomic theory, macroeconomic theory, mathematical economics, and econometrics. In addition to taking the core areas, students select a major area for intensive study and specialization. The usual time required to complete the Ph.D. program is four years.

The Master of Arts is awarded to students working toward the Ph.D. degree or to those who earn, through the College of Business Administration, a joint M.A. with geography or a joint M.A.-J.D. with law.

See the "College of Business Administration" section of the Catalog for details on the Ph.D. and joint M.A. program requirements.

Special Seminar

Each year the department offers a seminar program that brings eminent economists from other universities and government to The University of Iowa campus. Presentations by faculty and student representatives of the department are also featured.

Courses

Primarily for Undergraduates

Note: 6E:1 and 6E:2 may be taken in either order or they may be taken simultaneously; they satisfy the College of Liberal Arts General Education Requirement in social sciences for nonmajors.

6E:09 Cooperative Education Internship 3-6 hrs.

6E:1 Principles of Microeconomics 3-6 hrs.

6E:2 Principles of Macroeconomics 3-6 hrs.

6E:105 Macroeconomics 3-6 hrs.

6E:110 Microeconomics 3-6 hrs.

6E:111 American Economic History 3-6 hrs.

6E:112 International Economics 3-6 hrs.

6E:113 Money and Banking 3-6 hrs.

6E:115 Money and Financial Markets 3-6 hrs.

6E:117 Money and Inflation 3-6 hrs.

6E:119 Economics of the Government Sector 3-6 hrs.

6E:120 Money and Finance 3-6 hrs.

6E:121 Introduction to Public Finance 3-6 hrs.

6E:122 Principles of Managerial Accounting 3-6 hrs.

6E:123 Principles of Managerial Accounting 3-6 hrs.

6E:124 Principles of Managerial Accounting 3-6 hrs.

6E:125 Principles of Managerial Accounting 3-6 hrs.

6E:126 Principles of Managerial Accounting 3-6 hrs.

6E:127 Principles of Managerial Accounting 3-6 hrs.

6E:128 Principles of Managerial Accounting 3-6 hrs.

6E:129 Principles of Managerial Accounting 3-6 hrs.

6E:130 Principles of Managerial Accounting 3-6 hrs.

6E:131 Principles of Managerial Accounting 3-6 hrs.

6E:132 Principles of Managerial Accounting 3-6 hrs.

6E:133 Principles of Managerial Accounting 3-6 hrs.

6E:134 Methods of Quantitative Economics 3-6 hrs.

6E:135 Methods of Quantitative Economics 3-6 hrs.

6E:136 Methods of Quantitative Economics 3-6 hrs.

6E:137 Methods of Quantitative Economics 3-6 hrs.

6E:138 Methods of Quantitative Economics 3-6 hrs.

6E:139 Methods of Quantitative Economics 3-6 hrs.

6E:140 Theory of the Firm 3-6 hrs.

6E:141 Theory of the Firm 3-6 hrs.

6E:142 Theory of the Firm 3-6 hrs.

6E:143 Theory of the Firm 3-6 hrs.

6E:144 Theory of the Firm 3-6 hrs.

6E:145 Theory of the Firm 3-6 hrs.

6E:146 Theory of the Firm 3-6 hrs.

6E:147 Theory of the Firm 3-6 hrs.

6E:148 Theory of the Firm 3-6 hrs.

6E:149 Theory of the Firm 3-6 hrs.

6E:150 Theory of the Firm 3-6 hrs.

6E:151 Theory of the Firm 3-6 hrs.
Primarily for Graduates

With consent of the department chair, qualified undergraduate students may enroll in courses listed for graduate students.

2.032 Theory

Economics of consumer theory, theory of supply and demand, general equilibrium and welfare economics.

2.033 Microeconomics

1.0 credit, prelim. on measurement and analysis of short and long-run aggregate supply and demand variables, production and cost analysis, theory of comparative advantage and international trade, and welfare economics. Offered Fall semester. Prerequisite: consent of instructor.

2.034 Macroeconomics

1.0 credit, an introduction to Keynesian macroeconomics, the monetarist perspective, and the growth and instability of the economy. Offered Fall semester. Prerequisite: consent of instructor.

2.035 Microeconomics II

Cohesive treatment of the neoclassical paradigm, the nature of its axioms and its causalistic, non-algorithmic, non-deterministic, and non-methodological nature. Offered Fall and Spring semester. Prerequisite: ECON 2.033 or consent of instructor.

2.036 Macroeconomics II

Further exploration of Keynesian, monetarist, and neoclassical perspectives on inflation, unemployment, money, employment, real GDP, interest rates, and the business cycle. Prerequisite: ECON 2.034.

2.037 Mathematical Foundations of the Social Sciences

Mathematical formulations of the social sciences, game theory, market microeconomics, and macroeconomics. Offered Fall semester. Prerequisite: consent of instructor or consent of instructor.

2.0382 Mathematical Economics I

Introduction to mathematical methods in economics; mathematical tools in economics theory; linear algebra, optimization, and mathematical programming. Woman-lead math classes and existence of women instructors. Prerequisites: ECON 2.033, 2.034, and 2.036.

2.0392 Mathematical Economics II

Introduction to optimization and decision theory; mathematical foundations of economics; micro and macroeconomic principles; mathematical foundations of finance. Prerequisites: ECON 2.033 and 2.036, or consent of instructor.

2.046 Production Theory and Analysis

A systematic analysis of the production function. The nature of capital and labor and the determination of the optimal level of capital and labor. Prerequisites: ECON 2.0382 and 2.0392.

2.047 The Economics of Natural Resources

The analysis of natural resource and environmental issues, topics in natural resource and environmental policy and the impact of environmental issues. Prerequisites: ECON 2.033.

2.048 Econometrics

Statistical inference in single and multiple regression analysis, simple and multiple regression models and estimation, diagnostic checking, data transformation, and estimation of structural forms. Prerequisites: ECON 2.0382 or 2.033, and consent of instructor.

2.052 Applied Econometrics

Efficient estimation techniques, specification testing, linear and non-linear models, cointegration, and time-series analysis. Prerequisites: ECON 2.033 or consent of instructor.

2.053 Econometric Theory

Theory of statistical estimation and hypothesis testing. Prerequisites: ECON 2.033 or consent of instructor.

2.055 Topics in Econometrics

An advanced introduction to statistical methods in econometrics. Recent advances in econometric methods and their applications. Prerequisites: ECON 2.033 or consent of instructor.

2.082 Panel Data Modeling

Cohesive treatment of the neoclassical paradigm, the nature of its axioms and its causalistic, non-algorithmic, non-deterministic, and non-methodological nature. Offered Fall and Spring semester. Prerequisite: consent of instructor.

2.083 Developmental Economics

An introduction to the methodologies used in the field of development economics, with a focus on government policies, poverty, and economic growth. Prerequisite: ECON 2.033.

2.084 Development Policy and Planning in the Third World Countries

An advanced introduction to the methodologies used in the field of development economics, with a focus on government policies, poverty, and economic growth. Prerequisite: ECON 2.033.

2.085 International Trade Theory

Theory of international trade, with a focus on welfare economics, and the structure of the international trade system. Prerequisite: consent of instructor.

2.086 International Monetary Theory

Theory of international finance, with a focus on the structure of the international financial system and the role of central banks. Prerequisite: consent of instructor.

2.087 Macroeconomic Theory III

Survey of the latest research in macroeconomics, with a focus on the role of expectations and economic policy in shaping aggregate demand and supply. Prerequisites: ECON 2.034 and 2.036.

2.090 Monetary Theory

Introduction to basic problems and models in labor and monetary theory, including the structure of the labor market, the pricing of capital, and the determination of the optimal level of capital and labor. Prerequisites: ECON 2.036.

2.094 Money, Banking, and Financial Markets

An introduction to the role of money and banking in the economy, with a focus on the structure of the financial system and the role of financial institutions in the economy. Prerequisites: ECON 2.036 or consent of instructor.

2.095 Labor Economics

Economics of labor, with a focus on the role of labor in the economy, including the structure of the labor market, the pricing of labor, and the determination of the optimal level of labor. Prerequisites: ECON 2.034 or consent of instructor.

2.096 Health Economics

Economics of health care, with a focus on the role of health care in the economy, including the structure of the health care market, the pricing of health care, and the determination of the optimal level of health care. Prerequisites: ECON 2.034.

2.097 Industrial Organization

An introduction to the role of industrial organization in the economy, with a focus on the structure of the industrial market, the pricing of industrial goods, and the determination of the optimal level of industrial goods. Prerequisites: ECON 2.034.

2.098 Economic Analysis of Policy

An introduction to the role of economic analysis in policy making, with a focus on the structure of the policy making process, the pricing of policy decisions, and the determination of the optimal level of policy decisions. Prerequisites: ECON 2.034.

2.099 Economic Analysis of Foreign Trade

An introduction to the role of foreign trade in the economy, with a focus on the structure of the foreign trade market, the pricing of foreign goods, and the determination of the optimal level of foreign goods. Prerequisites: ECON 2.034.

2.100 Public Policy Analysis

An introduction to the role of public policy analysis in policy making, with a focus on the structure of the public policy analysis process, the pricing of public policy decisions, and the determination of the optimal level of public policy decisions. Prerequisites: ECON 2.034.

2.101 Mathematical Statistics

An introduction to the role of mathematical statistics in economic analysis, with a focus on the structure of the statistical analysis process, the pricing of statistical data, and the determination of the optimal level of statistical data. Prerequisites: ECON 2.034.

2.102 Quantitative Economics

An introduction to the role of quantitative economics in economic analysis, with a focus on the structure of the quantitative economics process, the pricing of quantitative data, and the determination of the optimal level of quantitative data. Prerequisites: ECON 2.034.

2.103 Microeconomic Theory

An introduction to the role of microeconomic theory in economic analysis, with a focus on the structure of the microeconomic theory process, the pricing of microeconomic data, and the determination of the optimal level of microeconomic data. Prerequisites: ECON 2.034.

2.104 Macroeconomic Theory

An introduction to the role of macroeconomic theory in economic analysis, with a focus on the structure of the macroeconomic theory process, the pricing of macroeconomic data, and the determination of the optimal level of macroeconomic data. Prerequisites: ECON 2.034.

2.105 Industrial Economics

An introduction to the role of industrial economics in economic analysis, with a focus on the structure of the industrial economics process, the pricing of industrial data, and the determination of the optimal level of industrial data. Prerequisites: ECON 2.034.

2.106 Economic Analysis of Foreign Trade

An introduction to the role of foreign trade in the economy, with a focus on the structure of the foreign trade market, the pricing of foreign goods, and the determination of the optimal level of foreign goods. Prerequisites: ECON 2.034.

2.107 Economic Analysis of Foreign Trade

An introduction to the role of foreign trade in the economy, with a focus on the structure of the foreign trade market, the pricing of foreign goods, and the determination of the optimal level of foreign goods. Prerequisites: ECON 2.034.
Minor
A minor in English requires 15 semester hours of course work in Department of English courses. Twelve of these semester hours should be in advanced courses (300 and above) taken at The University of Iowa. Courses for the liberal arts General Education Requirements do not contribute toward the minor in English.

Honors
The English major with honors offers talented students the opportunity to enhance their course of study through special courses and independent study. Each year the department offers four honors seminars covering a wide range of historical areas and topics. Students who wish to earn a degree with honors have two options. They may take:

- Three seminars during the junior and senior years, and then write the three essays written in seminar papers and, with an introduction, present them as the honors project;
- Two of the seminars, preferably in the junior year, and in the senior year, write a honors thesis under the supervision of a faculty member

A creative thesis is possible under the second option, but only with permission of the Writing 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 office, 308 English-Philosophy Building. A handbook, Guidelines and Deadlines, which describes in detail the final project, provides students 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 undergraduates come to The University of Iowa with a desire for the excellence of its creative writing program. Writers Workshop is open to anyone, and each year student may elect the undergraduate courses in this program. These are 18-23 Creative Writing, 8W-151 Fiction Writing, and 9W-152 Poetry Writing.

Admission to the undergraduate workshops in fiction and poetry (W-183) Undergraduate Writers' Workshop Fiction and (W-185) Undergraduate Writers' Workshop: Poetry (W-152) is by permission of the instructors. Students who wish to take part in these workshops must submit samples of their poetry or fiction to the Writers' Workshop at any time before registration and no later than the last day of registration.

English and Education
The department offers a flexible undergraduate program for students planning to teach English in elementary and secondary schools. Students completing this program satisfy the requirements for a general major in English and for teaching certification.

Students who wish to be certified to teach English in 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 (e.g., literature of the ancient world, Shakespeare, British literature of the nineteenth and twentieth centuries, American literature, literature for adolescents, literature of African American groups, literature for women, folk literature) as well as a variety of methods for exploring a literary text.

Students planning courses that will help them in their teaching experiences should remember that they will have to work with details of expression in English.

They will need advanced training in writing—auscultation, poetry, and fiction are all important—because these courses will help them understand and use (linguistic, rhetorical, and stylistic devices in various kinds of writing.

They will need to understand the nature of the English language, including syntax, phonology, and semantics, to help them understand language development and how language can be used to meet various speaking and writing situations.

Since communication also occurs visually, they should explore the relationships between written, oral, and visual media.

Finally, students should explore the processes of reading, from the first stages of learning to read through advanced stages when a reader increasingly becomes able to understand and respond to details of meaning and nuances of expression.

All of these areas of study can be satisfied by courses within the department except the exploration of processes of reading. That area can be satisfied by courses in the College of Education.

Prospective English teachers should remember that an undergraduate degree represents only minimal training, so they should plan a program that will permit graduate study at a later time.

English majors seeking teacher certification must plan with their advisors appropriate education courses to be taken concurrently with courses in English. In addition, they must devote one semester of the senior year to professional training apart from any other coursework.

The department also participates in a joint major in English and elementary education. Students interested in such a program should consult with their advisors in elementary education.

Students who seek certification for secondary teaching in fields other than English. This is particularly appropriate for students majoring in speech, journalism, Spanish, French, or German. These students must complete 24 semester hours of English, excluding freshmen courses in English literature and the English minor.

The English minor certification program must include a course in each of these areas: advanced composition, linguistics, Shakespeare, American literature, and British literature of the nineteenth or twentieth centuries. In addition to the 24 semester hours of English, students are required to take 75-hour Methods: English, offered by the College of Education's Division of Secondary Education.

While this program meets minimum requirements for certification, the department recommends that students who want to teach English have considerably more training in the field.

Graduate Programs
Master of Arts [Literary Studies]

The M.A. in literary studies is a program for students who want to acquire a fundamental understanding of what it means to study literature professionally. Those who seek an M.A. in literary studies may include English majors who seek minor certification in English literature before deciding whether to continue toward a doctorate. Teaching in secondary schools who want to gain extra credit and background, or independent readers and writers seeking intellectual growth in a scholarly context, are also eligible. All M.A. students are full participants in the community of the department and may enroll in any of its graduate courses or seminars.

The requirements for the degree are designed to give students a general knowledge of the periods, movements, and major works of English and American literary history, to develop students' sensitivity to artistic language, and to introduce them to critical methods of literary study. Each of the requirements allows a wide choice of courses within the prescribed areas.

Exeuctive courses, which constitute about one third of the course work toward the degree, may be chosen from graduate courses both inside and outside the English department. The program's flexibility enables students, consulting closely with their advisors, to tailor their plan of study to the pattern of their interests. Depending on which the student takes an examination or writes a thesis, the program requires either 30 or 32 semester hours of graduate-level credit, 24 of which must be earned in residence with a grade-point average no lower than 3.00.
Course Requirements

Liberal Arts (five courses; one each from five of the six areas and at least one of which must be numbered 200 or above)

Language and writing (one course in the history, philosophy, psychology, or instruction of language or in the art or teaching of expository writing)

Critical methods (one course in critical theory or methodology)

Thesis or Comprehensive Examination

There are two ways to complete the program:

- The usual conclusion is an eight-hour written comprehensive examination based on a reading list drawn from the various fields of English and American literature. Students may opt to write a M.A. thesis in literature studies. The thesis is a critical or scholarly work of about 10,000 words (approximatley 40 pages) written under the supervision of three directors and requiring registration for 3 to 6 semester hours of credit above the 30 hours of required course work. Students who receive permission to proceed must assemble a thesis committee, receive the comprehensive exam committee's approval of the thesis prospectus, and pass an oral defense of the completed thesis.

Master of Arts (Expository Writing)

This program is designed for persons wishing to become essayists, business and technical writers, editors, or writing teachers.

To qualify for the M.A. with emphasis in expository writing, students must complete 30 semester hours of graduate work with a grade-point average of no lower than 3.00. At least 24 semester hours must be earned in residence at The University of Iowa. Including 9 semester hours of work in advanced composition with a grade of A or B. In addition to the 30 semester hours of course work, students are required to complete at least 3 and no more than 6 semester hours of credit for the thesis.

In consultation with an advisor, each student designs a program of courses suited to his own professional interests. Thus, each student's plan of study is highly individualized and may include courses from twenty different areas and departments of the University.

Finally, each student produces a thesis, which may be an extended essay, a collection of essays, or a project involving some other form of expository writing. An oral examination covers the project, and the finished thesis must receive final approval by the student's thesis committee.

Students interested in this program should consult the director of the M.A. with emphasis in expository writing.

Master of Fine Arts

The purpose of the M.F.A. program is to provide professional guidance and a stimulating environment for students with previous achievement or notable promise in writing poetry or fiction. The flexible requirements include 48 semester hours of graduate credit, earned chiefly in the Writers' Workshop. A total of 16 credits of poetry or short stories, or a novel, and satisfactory performance on an examination on modern poetry or fiction.

Doctor of Philosophy

The Ph.D. program is designed as preparation for the teaching, publishing, and service required of college and university faculty members. The doctoral requires 72 semester hours of graduate credit, of which at least 30 must be earned in residence at The University of Iowa.

Concentrations are possible in areas such as literary history, literary criticism, writing, rhetorical theory and stylistics, folklore, bibliography, pedagogy, comparative literature, and linguistics.

Requirements for the Ph.D. include:

- Formal admission to candidacy by a vote of the first faculty of the department.
- Demonstration of competence in two foreign languages or mastery of a single foreign language and its literature.
- Three seminars taken at The University of Iowa.
- A post-written oral examination in three areas, one of which must be a historical period of English and American literature.
- A dissertation, which is usually a scholarly work but may be a single or several related essays and with special permission, be a piece of imaginative writing.
- A final examination in defense of the dissertation.

All doctoral candidates are encouraged to gain teaching experience, preferably in the College of Liberal Arts programs in rhetoric and General Education Requirement in literature.

Financial Aid

Aid is available to graduate students in the form of scholarships, fellowships, and teaching and research assistantships. It is awarded on a competitive basis. Sources are limited, usually fewer than half of new doctoral students receive aid. Most, but not all, advanced doctoral students receive support. Financial aid applications are considered only from students who have applied or been admitted to a degree program in the Graduate College. Applications and all necessary supporting material must be submitted by February 1 for the following academic year. Forms are available from the English department and the University Office of Admissions.

Admission

Admission requirements are stated in Special Requirements and Information/Graduate Admissions, which is available from the English department graduate office, 325 English-Philosophy Building.

Writing Programs

For the past 50 years, the University of Iowa has been a national leader in virtually all areas of the teaching of writing. In 1952 it became the first institution of higher education to accept creative dissertations for advanced degree programs.

Founded in 1959, the Writers' Workshop was a pioneer in the field of creative writing. It numbers scores of distinguished poets and novelists among its alumni. The workshop provides opportunities for students at all levels to work with outstanding teacher-authors. It also brings numerous prominent authors to campus each year for lectures and readings.

The International Writing Program, founded in 1966, brings numerous prominent creative writers from around the world to the University of Iowa.

The University of Iowa also is a leader in the areas of expository writing and historical theory. It is one of the few academic institutions in the nation that offers a full range of graduate courses in this area.

Facilities

The University library is strong in all areas of English and American literature. In part because of the influence of the Writers' Workshop, the library has particular strengths in twenthieth-century fiction and poetry, including manuscript collections of twentieth-century authors.

The Iowa Reading Room (the departmental library) has a small but select collection of books and journals, for use by faculty and students.

Several periodicals are published under the department's auspices, the Iowa Review, The Mid-Iowa Quarterly Review, and Philological Quarterly. These journals offer opportunities for especially qualified graduate students to work as research assistants or editorial associates. The Iowa Journal of Literary Studies is edited by our students and features creative and scholarly work by graduate students in English and related areas.

The Windover Press, which publishes fine editions of works by contemporary authors,
also is housed in the department. It offers to qualified students opportunities to learn the art of fine printing.

The Department of English, the Writers' Workshop, and the Literature and Writing Program sponsor a rich and extensive series of readings and lectures by poets, fiction writers, and scholars. Nearly a week goes by when there are not one or two such literary events, all of them open to students in the department.

The Association of Graduate Students in English sponsors social and intellectual events during the year and provides a forum for student discussion. All graduate students in the department are members.

Courses
Individual descriptions for the English courses listed here are not included because the content and emphasis of many courses may vary considerably from one semester to another. Detailed course descriptions for all undergraduate offerings in a specific semester are published in the Liberal Arts Guide to Courses. Detailed course descriptions for all graduate offerings in a specific semester are available in the English department office well in advance of the beginning of each semester.

General Education

Education

The General Education Requirement in the humanities is satisfied by taking 13.5 credits in the humanities and two other approved humanities courses. 12.5 (or its equivalent by examination or transfer) is a prerequisite for the other courses (2Cr through 4Cr) and must be taken first. The prerequisite option is available only for students in the College of Nursing and Engineering with the consent of the student's advisor and the instructor. English majors may not register for 35 courses to fulfill requirements for the major.

13.5 The Interpretation of Literature Poetry, short stories, drama and the novel (13.5). 4Cr

13.5 Biblical and Classical Literature Selections from the Old and New Testament Literature, Homer, Greek dramatists, Plato, Virgil, and others. Prerequisite: 13.5.

13.5 Modern and Renaissance Literature Selection from Chaucer, Dante, Shakespeare, Milton, and others. Prerequisite: 13.5.

13.5 Epic and Tragic Literature The study of Homeric literature as the prototype of epic, examination of the literary representation of heroes and heroism in the epic age and historical situations and of how hero representation shapes our understanding of literature. Prerequisite: 13.5.

13.5 The Forms of Comic Vision The scope of comic imagination as a form, social commentary, and often destructive; poets of comic work considered in their literary context. Prerequisite: 13.5.

13.5 Names in Literature Sequel to previous course and recent developments in the art of storytelling in both poetry and prose. Prerequisite: 13.5.

13.5 Lyric Poetry Poetry from major periods of development as well as contemporary verse; emphasis on verbal language and major formal patterns of poetry. Prerequisite: 13.5.

13.5 Literature of the Drama Selections from Shakespeare's major plays and some consideration of dramatic units and forms in other genres. Prerequisite: 13.5.

13.5 American Literary Major works of American autobiography. Prerequisite: 13.5.

13.5 The Personal Voice The nature of the author's "voice" in fiction, poetry and drama and the conditions of writing as they are understood by eighteenth century writers. Prerequisite: 13.5.

13.5 Comic and Tragic Literature Interpretation of comic and tragic literature and the relationship of comic and tragic forms and their use in comic and tragic works. Prerequisite: 13.5.

13.5 Literature of Afro-American People Black life as it will be influence by authors of Afro-American theme, African-American Men, and the Caribbean. Prerequisite: 13.5. Same as 193.5.

13.5 The Literary Presentation of Women Themes from women's genres and how they have been treated in literature. Prerequisite: 13.5.

For Undergraduates

900H Cooperative Education Internship A 4 Cr.

The following lecture courses are open to all undergraduates who have satisfied the elective requirement.

13.5 Modern Fiction Poetry, short stories, drama and the novel (13.5). 4Cr

13.5 Modern Poetry Poetry, short stories, drama and the novel (13.5). 4Cr

13.5 The Short Story Poetry, short stories, drama and the novel (13.5). 4Cr

13.5 Classical and Biblical Literature Selection from the Old and New Testament Literature, Homer, Greek dramatists, Plato, Virgil, and others. Prerequisite: 13.5.

16.5 Major Texts in World Literature I Survey of World Literature I Same as 60.5.

16.5 Major Texts in World Literature II Survey of World Literature II Same as 60.5.

Introductory Reading of Texts

The following are limited-enrollment courses in which a number of texts are read carefully to illustrate representative problems in the literature, interpretation, and evaluation of literature.

160 Reading Presence 3 Cr.

160 Reading Design 3 Cr.

160 Survey of British Literature I 3 Cr.

160 Survey of British Literature II 3 Cr.

160 Traditional Lyric Sequence 3 Cr.

160 Non-traditional Lyric Structures 3 Cr.

160 Acme Poetry 3 Cr.

160 American Literary Classics 3 Cr.

160 American Novel I 3 Cr.

160 American Novel II 3 Cr.

160 American Short Story 3 Cr.

160 Selected Works of the Middle Ages 3 Cr.

160 Selected Works of the Eighteenth Century 3 Cr.

160 Selected Works of the Twentieth Century 3 Cr.

840 Selected Works of the Renaissance 3 Cr.

840 Major works of the Renaissance 3 Cr.

840 Age of Wrymouth 3 Cr.

870 Selected Victorian Works 3 Cr.

Major Authors

The following are limited-enrollment courses in which each author is represented by several major works. Each student will choose authors whose works are changed regularly. With permission of the instructor, a student may repeat a course if the authors have been changed.

180 Chaucer 3 Cr.

180 Shakespeare 3 Cr.

180 Selected American Authors 3 Cr.

180 Selected Modern Authors 3 Cr.

180 Selected Authors 3 Cr.

Seminars for Undergraduate Majors

840 Reading Seminar 3 Cr.

Prerequisite: permission of the English instructor.

890 Undergraduate Seminar 3 Cr.

Prerequisite: consent of instructor. Same as 160H.

For Undergraduates and Graduates

Critical Problems

8100 Introduction to Critical Problems 3 Cr.

Same as 4100.

8105 Introducing the American Canon 3 Cr.

870 Literary Genre and Mode 3 Cr.

8110 Introduction to Feminist Criticism Same as 160H.

Literature and Culture

Literary works are designed to provide an introduction to the literature and to make students familiar with the major genres of English literature. The course is open to all students and no prerequisite is required. A research paper is required. 4Cr

191 Literature and Culture of the Middle Ages 4 Cr.

192 Literature and Culture of the Renaissance 4 Cr.

193 Literature and Culture of the Eighteenth Century 4 Cr.

194 Literature and Culture of the Nineteenth Century 4 Cr.

195 Literature and Culture of the Twentieth Century 4 Cr.

196 Literature and Culture of the Twenty-first Century 4 Cr.

English • Liberal Arts 107
810-819 American Criticism and Culture 3 s.h.
820-829 Anglo-Irish Literature and Culture 3 s.h.
830-839 Literature and Culture of Twentieth-Century England 3 s.h.
840 Literature and Culture of America Before 1900 4 s.h.
841 Literature and Culture of the Twentieth Century 3 s.h.
850-859 Four Modern Literatures and Culture 3 s.h.

Ethnic and Regional Studies
861-869 American Folk Literature 3 s.h.
870-879 American Ethnic Literature 3 s.h.
880-889 American Indian Literature 3 s.h.
890-899 American Regional Literatures 3 s.h.
900-909 Afro-American Literature I 3 s.h.
910-919 Afro-American Literature II 3 s.h.
920-929 Black Women Writers 3 s.h.
930-939 Afro-Asian Literature 3 s.h.
940-949 Images of Black Women in Western American Fiction 3 s.h.
950-959 The Fiction of Afro-American 3 s.h.
960-969 Studies in the Poetry of Afro-American 3 s.h.
970-979 Afro-American Drama 3 s.h.
980-989 Selected Black Writers 3 s.h.

European Literatures
1000-1099 European Literature of the Nineteenth Century 3 s.h.
1100-1199 Sixteen and Seventeenth Century Literature 3 s.h.
1200-1299 The European Novel 1700-1870 3 s.h.
1300-1399 The European Novel Since 1870 3 s.h.
1400-1499 European Literature of the Twentieth Century 3 s.h.
1500-1599 Selected European Literature 3 s.h.
1600-1699 Women's Studies 3 s.h.
1700-1799 Regional Women Writers 3 s.h.
1800-1899 Women in Literature 3 s.h.
1900-1999 The New Woman in Literature 3 s.h.

Authors
1800-1899 Selected Authors 3 s.h.
1900-1999 American Authors 3 s.h.
2000-2099 Shakespeare 3 s.h.
2100-2199 Milton 3 s.h.
2200-2299 Shakespeare: Selected Plays 3 s.h.

Literary Genre
Limited to the discussion of a single genre, and usually further restricted to a limited era and nation, these courses are appropriate for advanced undergraduate or beginning graduate students interested in the area.

Poetry
2300-2399 British Poetry 3 s.h.
2400-2499 American Poetry 3 s.h.
2500-2599 Modern British and American Poetry 3 s.h.
2600-2699 Poetry in Narrative Form in Poetry 3 s.h.
2700-2799 Poetry in Popular Form 3 s.h.
2800-2899 Seventeenth-Century Lyric Poetry 3 s.h.
2900-2999 Old English: Beowulf 3 s.h.

Fiction
3000-3099 The English Novel Began 3 s.h.
3100-3199 English Novel: Scott to Butler 3 s.h.
3200-3299 American Novel 1900-1980 3 s.h.
3300-3399 American Novel 1860-1880 3 s.h.
3400-3499 American Short Story 3 s.h.
3500-3599 Contemporary Short Fiction 3 s.h.
3600-3699 Popular Literature 3 s.h.
3700-3799 Science Fiction 3 s.h.
3800-3899 American Novel Since 1945 3 s.h.

Drama
3900-3999 Selected Drama 3 s.h.
4000-4099 Medieval Drama 3 s.h.
4100-4199 English Renaissance Drama 3 s.h.
4200-4299 Restoration Drama 3 s.h.
4300-4399 Modern Drama: Genre to Shaw 3 s.h.
4400-4499 Modern Drama: Shaw to Ionesco 3 s.h.
4500-4599 Modern Drama: Ionesco to Albee 3 s.h.
4600-4699 American Drama Since 1945 3 s.h.

Nonfiction
4700-4799 Biography and Autobiography 3 s.h.
4800-4899 Survey of Nonfiction Prose 3 s.h.
4900-4999 American Autobiography 3 s.h.

Thematic Studies
5000-5099 Selected Themes in Literary Works 3 s.h.
5100-5199 Literature of Peace and War 3 s.h.

Interdisciplinary
5200-5299 Literature and Anthropology 3 s.h.
5300-5399 Art and Related Art Forms 3 s.h.
5400-5499 Literature and Visual Arts 3 s.h.
5500-5599 Literature and Science 3 s.h.
5600-5699 Literature and Psychology 3 s.h.

Editing, Printing, and Design
5700-5799 Literary Publishing 3 s.h.
5800-5899 Book Design 3 s.h.
5900-5999 Medieval Manuscripts and Bookmaking 3 s.h.

Visiting Writers
6000-6099 Special Visiting Writers 3 s.h.
6100-6199 International Literature Today 3 s.h.

Independent Study
6200-6299 Undergraduate Honors Projects 3 s.h.
6300-6399 Special Project for Undergraduate 3 s.h.

For Graduates
Introductory
6400-6499 Analytical Bibliography and Textual Criticism 3 s.h.
6500-6599 History of the Book 3 s.h.
6600-6699 Library Research 3 s.h.

Medieval Languages and Literatures
6700-6799 Old English Literature Continuing Research 3 s.h.
6800-6899 Fourteenth-Century Literature 3 s.h.
### Literary Periods

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<td>16-18</td>
<td>Commonwealth, Early</td>
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### Literary Themes, Genres, and Modes

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<td>15-17 Restoration</td>
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### Comparative and European Literature

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<td>801-10 Ancient Writers</td>
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<td>10-15 Chaucer</td>
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### Literary Theory and Criticism

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<td>801-10 Introduction to Humanities</td>
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<td>10-15 Elements of American Literature</td>
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### Seminar Lectures

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### Independent Study

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### Linguistics and Language

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Expository Writing

All expository writing courses may be repeated for credit.

Practice in Writing

These courses offer intensive practice in various elements of composition and various levels of exposition.

RF 10 Expository Writing 2.0 a.h.

RF 15 Technical and Scientific Writing 2.0 a.h.

RF 106 Grammar for Writers 1.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

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RF 101 Greek and Latin for Vocabulary 2.0 a.h.

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RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.

RF 101 Greek and Latin for Vocabulary 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 152 Expository Writing 2.0 a.h.

RF 106 Technical and Scientific Writing 2.0 a.h.
graduate study in areas such as French, comparative literature, or history for preparation for college-level teaching. Or, in combination with other skills and studies, a minor in French or Italian may prepare students for challenging careers opportunities in the international areas of government, business, finance, travel, or communications, where the knowledge of a foreign language is essential.

Bachelor of Arts in French
The undergraduate major in French may be completed with an emphasis on literature, civilization, teaching, or applied French. Courses taught in English do not count as credit toward the French major, nor does a grade of D in any required French course.

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 area, such as English, comparative literature, cinema, or fine arts. It requires a total of 35 semester hours of credit in French, including:

- 106-106 Second-Year Composition and Conversation 8 s.h.
- 111-112 Third-Year Composition and Conversation 8 s.h.
- 126 French Conversation, Third Level 2 s.h.
- 136 French Conversation, Fourth Level 2 s.h.
- 175 Advanced French Pronunciation 2 s.h.
- or
- 175 French Pronunciation 2 s.h.

A minimum of four 100-level courses in literature (at least one of which must be above the 100 level) plus an 800-100 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 interested in careers in the fields of law, government, journalism, and international affairs. It requires 35 semester hours of credit in French, including:

- 105-105 Second-Year Composition and Conversation 8 s.h.
- 111 Third-Year Composition 3 s.h.
- 112 Third-Year Composition 3 s.h.

A minimum of four 100-level courses in civilization and three 100-level courses in literature, totaling 21 semester hours and including at least one course in literature above the 100 level.

Teaching Track
The teaching track requires 35 semester hours of credit in French, including:

- 106-106 Second-Year Composition and Conversation 8 s.h.

- 111-112 Third-Year Composition and Conversation 17.5 s.h.

- 126 French Conversation, Third Level 2 s.h.

- 136 French Conversation, Fourth Level 2 s.h.

A minimum of five 100-level courses—at least two in literature and two in civilization—totaling 15 semester hours and including at least two courses above the 100 level.

The student who wishes to acquire a secondary teaching certification also must complete the College of Education requirements for its teacher education certification.

Applied French Track
The applied French track is designed for students with an interest in careers such as international business, consumer law, and others in which applied French would be an asset. It requires 39 semester hours in French, including:

- 106-106 Second-Year Composition and Conversation 8 s.h.
- 111-112 Third-Year Composition 9 s.h.
- 112 Business French 2 s.h.
- 126 French Conversation, Third Level 2 s.h.
- 136 French Conversation, Fourth Level 2 s.h.
- 155 Commercial and Technical Translation 3 s.h.
- 175 Advanced French Pronunciation 2 s.h.

- or
- 175 French Pronunciation 2 s.h.

Elecves recommended as adjunct are courses in French literature and cultural studies (at least two), political science, economics, and business administration.

Minor in French
The requirement for a minor in French are 16 semester hours, at least 12 of which must be taken at the University of Iowa. Courses numbered 100-, 112-, 126-, and 136 do not count toward the minor in French.

Bachelor of Arts in Italian
Requirements for the major in Italian include:

- 101-101 Intermediate Italian 5 s.h.
- 111-112 Advanced Composition and Conversation 7 s.h.
- 105 Introduction to Italian Literature 6 s.h.
- 115-120 Medieval and Renaissance Italian Literature 6 s.h.

A 100-level course taught in Italian Total: 28 s.h.

Minor in Italian
The requirements for a minor in Italian are 15 semester hours, at least 12 of which must be taken at The University of Iowa in courses numbered 101-105 above.

Honors
The department participates in the College of Liberal Arts Honors Program. For an honors-degree in French, students must complete:

- 115 Honors Readings 3 s.h.
- 119 Honors Seminar 3 s.h.
- 175 Honors Advanced French Pronunciation 2 s.h.

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 basic knowledge of French (two years of college-level preparation is recommended); but students need not be French majors.

Centered in Lyon, the program combines formal class work in language skills with an integrated course in the culture and civilization of France, including visits to points of cultural and historical interest. Students may earn 8 or 9 semester hours of credit in the program.

Summer Program in Quebec
The department participates in the Committee on Institutional Cooperation (CIC) Summer French Program in Quebec at the Université Laval. The CIC is a cooperative educational organization whose purpose is to foster cooperative educational opportunities among the Big Ten universities and the University of Chicago. Affiliated with the Cours d'état pour non-francophones of the Université Laval, the program is designed to offer qualified students the opportunity to increase their command of French in a French-speaking environment and to introduce them to the heritage and cultural traditions of a unique and vital segment of North American culture.

Foreign Language House
The French and Italian department maintains close cooperation with the Maison Française in the Foreign Language House at Fairview Residential House. Residents initiate cultural and educational programs with the participation of French-speaking and other students, providing a unique opportunity to combine living with language learning.

Graduate Programs
Master of Arts in French without Thesis
Candidates must earn a minimum of 30 semester hours of graduate credit and pass a written and oral examination. The program must include 9175 Advanced French Pronunciation. 9,209 Advanced
Grammar and Lexicology, 9.321
Comparative Semantics, and at least four graduate-level (200 and above) literature courses. With the permission of the departmental chair, candidates may take up to 6 of the required 30 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 candidate must earn at least 4 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 36 semester hours of graduate credit, of which 8 must be in education or related fields, and at least 6 in graduate (200-level) courses in French literature.


Doctor of Philosophy

To fulfill requirements for the Ph.D. degree in French, the student must satisfy at least three years of graduate study, of which at least one must be spent in residence at the University of Iowa. They must pass a comprehensive examination and make a successful oral defense of their dissertation.

Specific requirements include 9.351 Introduction to Old French Grammar, and four semesters of college study or equivalent proficiency in a foreign language other than French.

Candidates must also complete three graduate course, for a total of 10 semester hours, of which at least 6 must be in residence. The candidate must pass an examination in each field covered by the dissertation. The examination may include questions in English and may be held at any time, but must be completed by the time of the oral defense.

Admission

To be considered for admission to an M.A. program in French, applicants must have completed the equivalent of the University of Iowa undergraduate major in French. Students may make up deficiencies in preparation 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 for doctoral study.

For students earning 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. earned at another institution are placed on conditional status when admitted. This status is reviewed after one semester of residence.

The Graduate Record Examination (GRE) Aptitude Text Scores are required by the Graduate College.

Appointments

Teaching and research assignments and University fellowships and scholarships are available to qualified graduate students (see the "Graduate College" section of the Catalog). The department may name one or more nominees among annually. Instructions should be addressed to the departmental office.

Exchange scholarship agreements with the French Ministry of Education, the University of Paris, and the University of Picardie provide one year of residence in France for a limited number of students.

French Courses

A detailed description of courses offered each semester is available. All courses are given in French unless otherwise indicated. Course numbers 100-199 are intended primarily for advanced undergraduates; a graduate student should consult with his or her adviser before registering for these courses.

Course numbers 200 and above 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 adviser 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.

Students may repeat, either for credit or as a grade, up to a total of 6 semester hours of credit in French. Students may not repeat, either for credit or as a grade, a course for which he or she is not qualified to take, or whose equivalent is prerequisite to, or higher-level courses that they have already completed.

Primary for Undergraduates

6008 Cooperative Education Internship 4 h.

For Undergraduates and Graduates

1091 French for Reading Research 1, 5, 6 h.

For students working with special needs for purposes of research.

1092 French for Reading Research 1, 5, 6 h.

For students working with special needs for purposes of research.

1093 French for Reading Research 1, 5, 6 h.

For students working with special needs for purposes of research.

1097 Introduction to French Literature: National and Regional 3 h.

For students with special needs for purposes of research.

1098 Introduction to French Literature: Seventeenth Century 3 h.

For students with special needs for purposes of research.

1099 Introduction to French Literature: Twentieth Century 3 h.

For students with special needs for purposes of research.

1111 Third Year Composition 2 h.

For students with special needs for purposes of research.

1212 Advanced French Civilization 3 h.

For students with special needs for purposes of research.
GENERAL STUDIES

Coordinator: Patricia Akins
B.G.S. faculty advisor committee: Richard Higgins (Geology), Fr. Martin Jena (Sociology), John Seaton (Psychology), Katherine Tutsch (History)
Undergraduate degree offered: B.G.S.

Degree Program

The Bachelor of General Studies (B.G.S.) degree is designed to give students flexibility in planning their academic programs. Since this is not an interdisciplinary program with no departmental major requirements, students are responsible for planning their own areas of concentration with the assistance of a B.G.S. advisor. B.G.S. students may not earn minors. Areas of concentration, however, may serve some of the same purposes as minors and/or electives.

Many B.G.S. candidates structure interdisciplinary programs similar to programs in other departments. Others develop creative emphases that draw upon the offerings of several departments and integrate varied approaches to a particular topic. A few examples of interdisciplinary programs are world order studies, environmental studies, systems writing, psychology, urban studies, and medieval culture. In all cases, careful planning is essential.

Plan of Study

Effective fall semester 1988, B.G.S. students are required to submit for approval a plan of study. Generally, the earlier a plan of study is submitted, the more effective the student's B.G.S. program will be. Because the B.G.S. degree program is by definition one that allows for individualized academic programs, students are encouraged to declare the B.G.S. prior to or during the junior year.

A sophomore or junior student who declares the B.G.S. must submit a plan of study no later than the end of the third week of the first full semester after the declaration. The advisor will not sign the student's next registration card until an approved plan of study is on file in the student's folder.

A senior student (a student who has earned 90 semester hours or more) who declares the B.G.S. must submit a plan of study for approval prior to the declaration. Students who have completed more than 90 semester hours ordinarily may not declare the B.G.S. unless they can demonstrate that the advanced coursework needed to complete such a plan of study would fit into a coherent plan of study. Note: Declaring the B.G.S. does not entitle the student to the need to complete more than the minimum of 124 semester hours required for the degree.

Each plan of study submitted for approval must provide the following information:

A description of academic goals for the baccalaureate degree, with a clear statement of the reasons for preferring the B.G.S. program to any departmental program;
A list of advanced-level coursework already completed and a description of its relevance to the proposed plan of study;
An outline of advanced-level coursework 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; and the course choices in areas of emphasis within departments may be noted.

Each plan of study is approved by a committee that may include the B.G.S. coordinator, the B.G.S. faculty advisory committee, and one or more B.G.S. advisors. Reviews are held several times each semester.

If the committee does not grant approval, the plan of study is returned to the student for revisions and resubmission at the next committee meeting.

Significant changes in the focus of a student's academic program require the approval of a restated plan of study. The student's academic advisor continues whether the changes result in second approval. Submissions clearly consistent with areas of concentration in the initial plan of study need only the advisor's approval.

Forms and guidelines for preparing the plan of study are available in the Office of Academic Planning, 1158 Student Hall. A list of meeting times of the review committee is available each semester.

Honors

B.G.S. students are eligible for membership in the honors program by maintaining a cumulative grade-point average of at least 3.30. Graduating with honors includes the successful completion of an honors senior thesis project under the guidance of a faculty member. Other ways to achieve the honors designation are available; a list of departmental variations may be obtained from the College of Liberal Arts Honors Program.

B.G.S. students should initiate inquiries about graduating with honors by contacting the director of the Honors program at the Student Services Center, 1601 Student Hall. Prospective members are encouraged to begin inquiries early in their junior year to allow time for foundation course work. The Honors director offers suggestions for creating a supervisory faculty member or committee from one or several appropriate departments.

Career Considerations

Since the degree offers opportunities outside the traditional degree pattern, B.G.S. students must create programs of study that meet their individual educational and career objectives. Students who plan to seek employment immediately following graduation should simulate 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 be familiar with the admissions requirements of graduate or professional schools. The earlier students decide on pursuing graduate or professional study, the easier it is for them to complete any necessary prerequisites.

B.G.S. students who design a cohesive program and maintain a competitive grade-point average may be considered equally with students who earn other undergraduate degrees for employment or admission to graduate and professional schools.
New B.G.S Requirements

Students who enroll at the University of Iowa for the first time after attending summer session 1985 must complete the following requirements for the B.G.S. degree. Prospective B.G.S. students also are required to submit for approval a plan of study (see this section for all details).

General Education Requirements
Students must complete the College of Liberal Arts General Education Requirements. (See College of Liberal Arts catalog with academic information, including a description of the foreign language requirement.)

Advanced Course Work
Students must complete at least 36 semester hours of advanced course work at The University of Iowa. No more than 18 semester hours of advanced course work from one any department will be counted toward fulfilling this requirement.

If students take more than 18 hours of advanced courses in one department, the total may count toward the 36 semester hours needed for graduation, but only 18 semester hours from that department may count toward the 36 hours of advanced courses.

Advanced courses typically are those numbered 100 and above. However, at the discretion of the department and with approval of the Office of Academic Programs, courses numbered below 100 but taught at an advanced level may be used to satisfy this requirement. Approved courses are listed later in this section.

Some students enrolled in advanced courses is considered residential work for the purposes of B.G.S. requirements and college residence requirements. Students should check in advance with their academic advisor or with the B.G.S. coordinator.

The pass/fail grading option is not available for the 36 semester hours of advanced course work required for the degree, but may be used for advanced course work beyond the 36 semester hours.

Courses taken to satisfy the General Education Requirements may not be counted toward completion of the advanced course work requirement.

University of Iowa Guided Correspondence Study advanced courses count toward the advanced course work requirement, but the College of Liberal Arts residence requirement must be met by other UI course work.

Grade-Point Average
Students must achieve a grade-point average of at least 2.00.

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. This includes both upper- and lower-level course work, and both UI and transfer course work.

Students completing a B.G.S. degree may earn no more than 36 semester hours of credit toward the 124 semester hours required for graduation from courses taken in all other colleges at The University (e.g., as Business Administration, Engineering, or Pharmacy) whose credit is in the College of Liberal Arts. Undergraduate courses offered by the College of Education are an exception to this rule.

All other College of Liberal Arts policies regarding residence, work experience, satisfactory academic and academic standards apply to B.G.S. students.

Advanced Courses Numbered Below 100
The following courses are accepted as part of the 36 semester hours of advanced course work required under the new B.G.S. rules. Students must earn a grade-point average of at least 2.00 in these courses considered as a group including those numbered 100 and above.

Advanced courses numbered below 100 that were taken before spring semester 1980 will not be counted toward advanced-level course work. This set of courses is an option for students under the old B.G.S. requirements. Some of the courses have prerequisites or require special permission signatures.

American Studies
4090 Seminar in American Cultural Studies 3 s.h.

Art and Art History
1900 Art History 3 s.h.
1910 Undergraduate Painting Workshop 3 s.h.
1917 Undergraduate Sculpture Workshop 3 s.h.

Asian Languages and Literature
1920 Second-Year Semitrans 3 s.h.
1930 Second-Year Semitrans 3 s.h.
1939 Non-Western Literacy and Cultures 3 s.h.

Botany
2190 Iowa Flora 2 s.h.

(accepted as advanced course work only if 2190 Plant Taxonomy also is completed)

Communication Studies
All courses numbered 100-690 and above.

Comparative Literature
4040 Major Texts in World Literature 3 s.h.
4041 Major Texts of World Literature 3 s.h.
4840 Non-Western Literacy Traditions 3 s.h.
4810 Undergraduate Seminar 3 s.h.

Computer Science
2831 Algorithms and Data Structures 3 s.h.
2832 Programming Language Concepts 3 s.h.
2833 Digital Systems and Computers 3 s.h.
2835 Computer Graphics 3 s.h.
2855 Elementary Numerical Analysis 3 s.h.

Dance
1370 Independent Study 3 s.h.
1372 Independent Choreography 3 s.h.

Dental Hygiene
602 Human Histology 4 s.h.

English
9890 Expository Writing 4 s.h.

All courses numbered above 810 except 8G courses.

Geology
1241 Mineralogy 4 s.h.
1352 Elementary Petrology 4 s.h.
1252 Structural Geology 5 s.h.

Mathematics
1626 Introduction to Linear Algebra 3 s.h.
2128 Calculus II 4 s.h.
2641 Differential Equations for Engineers 3 s.h.
2152 Vector Calculus for Engineers 3 s.h.
2265 Elements of Group Theory 3 s.h.
2544 Fundamental Properties of Spaces and Functions 3 s.h.
2552 Foundation of Geometry 3 s.h.
2672/2712 Numerical Analysis 3 s.h.

Music
2505 History of Music I 3 s.h.
2506 History of Music II 3 s.h.

Physical Education and Sports Studies
2814 Theory of Coaching 2 s.h.
2826 History in Teaching of Sports 1-2 s.h.
2685 Physio-Social Dimensions of Sport 3 s.h.

Statistics and Actuarial Science
2253 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
Total Hours Earned
Students must complete a minimum of 124 semester hours of credit.

Restrictions
No more than 46 semester hours of credit in one academic department may count toward the 124 semester hours required for graduation. This includes both upper- and lower-division course work, and both US and international course work.

Students enrolling in a B.S. degree program may count no more than 28 semester hours of credit toward the 124 semester hours required for graduation from courses taken in all other colleges of the University (such as Business Administration; Engineering; or Pharmacy) while enrolled in the College of Liberal Arts. 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, study-abroad, and academic standards apply to B.G.S. students.

Related Considerations
All courses numbered with the prefix 7 (College of Education) are considered to be in one department.

All courses numbered with the prefix 4 (College of Business Administration) except 461 (economics is also considered a department in the College of Liberal Arts) are considered to be in one department.

All courses numbered with the prefix 22 (Department of Mathematical Sciences) are considered to be in one department.

Teaching Certification
B.S. students may earn teaching certification in elementary or secondary education in the following majors:
By meeting either the new or the old requirements for the B.S. degree:
By meeting the requirements for a particular teaching area; this usually involves fulfilling requirements in some field, for example, elementary education, English, or social studies education;
By meeting certification requirements in the selected certification program; this includes methods courses and student teaching.

Students seeking teaching certification probably will take more hours in a single department than allowed under B.G.S. rules. Some courses offered in education and psychology are cross-listed, which may allow students to keep course totals within the maximum of 46 semester hours in any one department.

For Further Information
Information about the Bachelor of General Studies program is available from the Office of Academic Programs, 14 Schofield Hall.
biology, all of which contribute significantly to the overall training program.

In addition to completing research and course work, students also 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, including courses in general genetics, organic chemistry, introductory physics, and mathematics, as well as a strong commitment to research and teaching in genetics. Students with deficiencies in a particular area can make them up during the first year of graduate study.

Admission to the program is based on a review of applicants' undergraduate academic record, performance on the Graduate Record Examination (GRE) Aptitude Test (verbal and quantitative), and letters of recommendation. Admission requirements are not rigid. Almost all students currently working toward the Ph.D. in genetics at the University of Iowa have undergraduate grade-point averages higher than 3.0, and their average GRE Aptitude Test scores (verbal plus quantitative) exceed 1200. Students with lower grade-point averages or GRE scores may be admitted, depending on other indications of academic potential.

The program accepts applications for admission at any time, but students generally begin graduate work during the fall semester.

Financial Aid
All genetics graduate students receive a financial stipend that is in the range of $10,000 plus tuition per year. Nearly all financial aid is provided through teaching or research assistantships awarded to students entering in the fall.

Financial support is available from a National Institutes of Health predoctoral training grant, research assistantships, teaching assistantships, scholarship, 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 Scientists Training Program
Students may combine study toward an M.D. and a Ph.D. in genetics. Further information about this program is available from the director of the Medical Scientists Training Program, known as the College of Medicine.

Departmental Ph.D. Programs

The departments of Biochemistry, Biology, Physics, and Microbiology offer degree programs in which students may specialize in a particular aspect of genetics. See departmental descriptions elsewhere 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.

101.15 Molecular Genetics 3 s.h.
101.16 Biochemistry of Informational Macromolecules 3 s.h.
102.23 Gene Expression 1-2 s.h.
2104 Cytochemistry 2 s.h.
2105 Genetics and Genomics of Cell Organelles arr.
61.170 Molecular Genetics 3 s.h.
61.171 Microbial Genetics Laboratory 2 s.h.
61.179 Comparative Microbial Genetics and Physiology 3 s.h.
61.200 Molecular Biology of Animal Viruses and the Eukaryotic Cell 3 s.h.
61.210 Topics in Molecular Biology arr.
61.202 Population Genetics and Molecular Evolution 3 s.h.
61.210 Eukaryotic Molecular Biology 2 s.h.
61.211 Molecular Genetics 4 s.h.
61.212 Topics in Molecular Genetics 3 s.h.
61.213 Molecular Biology of Plague Yersinia 3 s.h.
61.215 Topics in Evolutionary Genetics 1-2 s.h.
61.236 Topics in Eukaryotic Molecular Biology 2 s.h.
61.235 Pattern Formation in Development 3 s.h.
61.235 Kinetics Seminar (same as 215.411/215.9912) 0-2 s.h.
61.202 Developmental Genetics 2 s.h.
121.201 Graduate Research in Genetics arr.
61.254 Genetics and Geographical Genetics 3 s.h.
60.01 Human Genetics 1-2 s.h.

GEOGRAPHY

Chase, David R., Reynolds, Peter, and many others.

Programs for the Undergraduate Major

Students majoring in geography may choose from alternative programs.
depending on their interests. The substantive strengths of the department fall into these areas: environmental studies, urban and regional studies, and international development studies. Students may concentrate their studies in one of these areas, or they may develop an individualized program within the curriculum offered by the department.

Students planning advanced training or seeking careers in geography should elect the Bachelor of Science (B.S.) degree. Those who wish to pursue a liberal arts objective are advised to elect the Bachelor of Arts (B.A.) degree.

Requirements

All geography majors must complete a minimum of 26 semester hours of geography course work, at least 15 of which must be numbered 300 or above. Many students find that they need more than the minimum requirements to master a specific subfield.

All geography majors must complete:

44:100 Spatial Organization
44:150 Undergraduate Seminar for Geography Majors

One of the following courses in statistics:

22:01 Biostatistics
22:101 Introduction to Statistical Methods
22:102 Applied Statistical Methods
22:107 Applied Statistical Methods and Computations

Bachelor of Science students must fulfill a mathematics requirement of two courses, preferably to be level of calculus. Students should select one course from section A and one course from section B.

A.

22M:5 Trigonometry
22M:10 Plane Geometry
22M:13 Mathematics for the Biological Sciences

Section B.

22M:16 Calculus for the Biological Sciences
22M:19 Elementary Functions
22M:25 Calculus I
22M:26 Calculus II
22M:33 Engineering Calculus I
22M:36 Engineering Calculus II

Bachelor of Science students also must take one of the following computer programming courses:

22C:7 Introduction to Computing with FORTRAN
22C:14 Introduction to Programming with PASCAL

With the consent of the geography faculty, equivalent courses with objectives similar to these may be accepted in fulfillment of the statistical, mathematical, and computer science requirement.

Recommendations

Students majoring in geography are advised to:

- take the introductory-level courses 44:1 Introduction to Human Geography and 44:3 Introduction to Physical Geography during their freshman or sophomore years.
- take 44:10 Spatial Organization followed by 44:150 Undergraduate Seminar for Geography Majors during their senior year.
- take the statistical, mathematical, and computer programming requirements as early as possible, because many advanced-level geography courses assume prior knowledge of these subjects.
- take the 44:107, 44:198, 44:113 sequence of courses beginning in the fall semester of their junior year.

It is strongly recommended that students take 22M:25 Calculus I or its equivalent in fulfillment of the mathematics requirement. Students equipped with these skills will have greater flexibility in further geography studies and career opportunities.

Environmental Studies

The undergraduate program in environmental studies is designed for students who have career expectations or personal interest in resource management or environmental protection, or who are interested in physical geography per se. The program provides a knowledge of physical processes in the environment, development, atmospheric conditions, hydrology, soil development, and biotic communities. It stresses the interactions among these processes and helps students acquire knowledge necessary to assess the impact of human activities on physical systems. Training in field observation, quantitative analysis, computer methods, and cartographic representation should be 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 water resources subprogram of the Department of Geography.

Students concentrating on environmental studies must take:

44:1 Introduction to Physical Geography
44:19 Contemporary Environmental Issues 29:5 Chemistry and Physics of the Environment (or a more advanced course in chemistry or physics)

At least two of the following:

44:107 Maps and Mapping
44:108 Computer Methods in Geographical Analysis
44:113 Geographic Information Systems 15 hours from

44:111 Climatology
44:112 Earth Surface Processes
44:116 Biogeography
44:121 Natural Resources Policy
44:132 Environmental Conservation in the United States
44:142 Environmental Impact Analysis
44:144 Water in the Biosphere
44:146 Drainage Basin Form and Process
44:129 Water Resources Management
44:136 Field Studies

Under the direction of an advisor, students should select at least 12 semester hours of courses from the following clusters.

Biophysical Systems

11:100 Plant Landscapes: An Evolutionary Survey
11:111 Plant Geography
11:115 Field Ecology
21:115 Plant-Animal Interactions
21:132 Population and Community Ecology
27:135 Topics in Ecology
12:516 Introduction to Oceanography
12:110 Introduction to Remote Sensing
12:127 Paleobiology
12:128 Quaternary Palynology
12:156 Hydrology and Groundwater Quality
12:171 Geocology
12:172 Glacier and Pleistocene Geology
12:173 Quaternary Environments
12:175 Engineering Geology

Environmental Engineering

42:11 Principles of Hydrogeology
42:132 Environmental Chemistry
42:133 Environmental Chemistry Laboratory
42:134 Environmental Microbiology
42:135 Limnology
42:176 Hydrogeology

Environmental Management

62:1 Principles of Microeconomics
62:2 Principles of Macroeconomics
62:140 Microeconomics
62:141 Macroeconomics
62:149 Economics of the Government Sector
62:177 Natural Resources in the World Economy: Conflict and Conflict
62:130 Environmental Economics
42:190 Administrative Management
46:161 Individual Behavior in Organizations
46:133 Organizational Design and Operations
102:101 Introduction to Planning and Policy Development
324:104 Environmental Policy and Assessment

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. Courses in this area also are designed to provide a suitable background for graduate programs in geography or professional programs such as urban and regional planning, business administration, applied policy analysis, regional science.

The courses cover location theories and their application to applied problems, such as area analysis for development potential, finding the best locations for public and private facilities, developing plans for regional and community
development, evaluating alternate plans for improving transit services in a region, and forecasting the populations of small areas. Methods for solving these applied problems are based on a thorough understanding of the processes of urban and regional development, the roles of individuals and institutions in affecting change, and the processes through which policy decisions are made. Required skills and developed in quantitative analysis, cartography, development and implementation of geographic information systems, and computer methods. Opportunities for experience in working with real problems are included. Students concentrating on urban and regional studies are advised to select at least 21 semester hours of courses from the following.

Institutional Courses
44:1 Introduction to Human Geography
44:3 Introduction to Physical Geography
44:11 Introduction to Social Geography
44:20 Introduction to Economic Geography
44:35 World Cities

Urban/Economic Geography
44:19 Law in the Urban Environment
44:22 Industrial Locational
44:20 Introduction to Transportation
44:34 Methods of Transportation Analysis
44:35 Urban Geography
44:37 Economic Theory of Location
44:39 Economic Analysis of Urban Spatial Structure

Regional Perspectives
44:21 Medical Geography: Health Services
44:32 Geography of Urban Development
44:33 Ecology of the New Urbanizing Countries
44:35 Geography of the Modern World
44:36 Contemporary Europe: Interaction and Change
44:37 Patterns of Urbanization and Development in Latin America

Political Geography
44:30 Political Geography of the World
44:35 Locational Analysis

Geographical Methods
44:32 Maps and Mapping
44:39 Cartographic Methods in Geographical Analysis
44:13 Geographic Information Systems
44:32 Environmental Impact Analysis

International Development Studies
The concentration in international development studies is designed for students interested in the processes of economic, social, and political development and for those who affect the countries of the Third World. This concentration provides students a better understanding of regional and national development in international and cross-cultural perspective. Students who are interested in the problems of developing nations and who wish to exercise competing theories of development intended to explain international and regional inequities will find this concentration helpful. Students concentrating on international development studies should select at least 21 semester hours of courses from the following.

Introductory Courses
44:3 Introduction to Human Geography
44:11 Introduction to Physical Geography
44:11 Introduction to Social Geography
44:20 Introduction to Economic Geography
44:35 World Cities

Intermediate Courses
44:109 Computer Methods in Geographical Analysis
44:131 Medical Geography: Health Services
44:157 Third World Development Support
44:151 African Development
44:105 Geography of the Modern World
44:36 Contemporary Europe: Interaction and Change
44:37 Patterns of Urbanization and Development in Latin America

Advanced Courses
44:337 Economic Theory of Location
44:352 Geography of Underdevelopment
44:355 Geography of the Newly Industrializing Countries
44:355 Political Geography of Space
44:137 Social Theory and Space
44:175 Locational Analysis
44:194 Geographic Perspectives on Development

Under the direction of an advisor, students should select courses in related disciplines from the following:

30:00 Introduction to World Politics
30:127 Policy Problems in Industrial Societies
30:150 The Political Economy of the Third World
30:169 International Politics
30:166 Politics of War and Peace
62:123 Political Economy of the Military-Industrial Complex
88:129 Economic Development of Underdeveloped Areas
161:113 Latin America
161:114 Introduction to Modern Latin America
161:121 History of Colonial Africa
161:122 Modern Africa: History
161:125 Imperialism and Modern India
165:131 Modern China: 1800 to Present
165:136 Imperialism in Latin America
165:137 Topics in History of Public Health

International development programs may design their own individual programs in consultation with the help of their advisors. Such programs must include 26 semester hours of geography, at least 15 of which must be numbered 44:100 or above. They also must include the following courses:

44:110 Spatial Organization
44:150 Undergraduate Seminar in Geography

One of the following statistics courses:

225:327 Applied Statistical Methods and Computer
225:101 Biostatistics
225:102 Regression to Mathematical Statistics

Minor
A minor in geography is an option available to all students pursuing B.S. or B.S. degrees in the College of Liberal Arts. To minor in geography, students must complete a minimum of 15 semester hours in geography, 12 of which must be taken at The University of Iowa in 100-level course(s). Students should declare one of the department's three areas of concentration—environmental studies, urban and regional studies, and international development studies—and, in consultation with their geography advisor, should select courses from those listed in that area (see above).

Honor Program
The honors minor is for students of superior ability who want to pursue studies beyond the typical undergraduate level. To graduate with honors in geography, a student must be admitted to the College of Liberal Arts Honors Program as well as the honors program in geography by the first semester of the senior year and must maintain a grade-point average of 3.50 in all University work and a 3.40 in geography.

Prepares and successfully defends a honors thesis. The thesis consists of original research under the direction of a faculty member and is examined by a three-member faculty committee.

There are two options. Students may complete the thesis through a year-long tutorial in 44:138 Honors Tutorial and 44:148 Honors Thesis. Those who may choose the thesis while enrolled in the senior courses 44:110 Survey Organization and 44:170 Senior Seminar, but with the exception of a particular faculty member.

The department offers honors discussion/lab sections in its introductory courses (44:11 and 44:13). Arrangements for honors students to attend meetings of the national association, encourages competition for scholarships, and provides ready access to participation in faculty research. 119
Cooperative Education Program
The Department of Geography participates in the University’s Cooperative Education Program, which provides opportunities for both undergraduate and graduate students to secure cooperative training assignments related to their academic programs.

Courses for the Nonmajor
Students in the College of Liberal Arts as well as other areas of the University may find geography courses meaningful to their own program of study. The beginning-level courses 44:13 Introduction to Human Geography, 44:11 Introduction to Social Geography, 44:19 Contemporary Environmental Issues, and 44:20 Introduction to Economic Geography are approved for the General Education Requirement in social sciences. 44:17 The World Development Support is approved for the General Education Requirement in social civilization and culture. 44:16 African Development is reserved for the General Education Requirement in social sciences and foreign civilization and culture. 44:13 Introduction to Physical Geography is approved for the General Education Requirement in natural sciences. These courses serve as part of a liberal education.

Other courses also may be attractive as individual electives. These include 44:15 Introduction to Political Geography, 44:32 World Cities, 44:23 The Water in the Biosphere, 44:20 Urban Form and Process, 44:15 Geogography of the Modern World, and 44:31 Environmental in Contemporary Society.

Students in related disciplines may take groups of courses leading to a minor in geography. Bachelor of General Studies students also may take a group of geography courses as part of their degree. The geography courses listed below, under the different programs for the major in geography, will serve as a guide to course selection. Additional information about a minor in geography is available in the department office.

Graduate Programs
The goals of the department’s graduate programs are to prepare students to carry on creative and productive research in the areas of geography and the application of geographic techniques to the solution of human problems. To prepare students for positions in research, teaching, or some area of applied geography. Success in achieving these goals has been demonstrated by the strong demand for the University of Iowa graduates to fill positions on college and university faculties, in private research organizations, and in business and government.

The department offers specialized instruction in the teaching of geography at the graduate level for those pursuing academic careers. Opportunities are provided for all graduate students to gain practical teaching experience through service as departmental teaching assistants or graduate instructors.

Master of Arts
The department offers five M.A. subprograms: locational analysis, political geography, regional development, transportation systems analysis, and water resources. These specialties are designed for students seeking positions in community planning, health planning, development planning in the Third World, water resources management, and transportation as well as for those who intend to pursue the Ph.D.

Each subprogram cuts across some of the more traditional breakdowns of the disciplines and builds on the research specialties of the faculty. For example, topics of interest in urban geography are included in three subprograms—locational analysis, political geography, and regional development—while the traditional concern of economic geography is included in locational analysis and regional development. The more quantitative approaches of regional science are included in locational analysis and transportation systems analysis. The water resources subprogram builds on a strong foundation in physical geography and environmental science.

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 and in computer programming and graphics, statistics, mathematics, and research methodology are therefore integral to the M.A. program. Students in the transportation subprogram may take an additional elective course that enables them to receive an appropriate certificate in addition to their M.A. degree.

General Requirements
The M.A. degree requires a minimum of 30 semester hours of graduate work, of which 15 semester hours must be in courses numbered 200 or above. In addition to fulfilling the course requirements in one of the department’s five subprograms (see below), students must:
1. Complete at least one course in another subprogram from the following introductory graduate courses: 44:125, 44:126, 44:134, 44:137, 44:175, or 44:194.
2. Enroll in the department’s general colloquium series 44:250 Research Seminar. Staff during each semester in residence;
3. Satisfy the department’s B.S. degree requirements in one or more of the following areas: mathematics, statistics, and computer programming.
4. Complete, with a grade of B or better, at least one three-quarter-hour quantitative methods course from a list of courses approved by the faculty.

The M.A. degree can be earned with or without thesis. A maximum of 6 semester hours of credit may be earned for thesis work.

Students who elect the M.A. without thesis must pass a written examination and, in most subprograms, an oral examination. For students electing the M.A. with thesis, the written comprehensive can be waived and the thesis defense serves as the oral M.A. examination.

Subprogram Requirements

Locational Analysis
44:134 Methods of Transportation Analysis
44:137 Economic Theory of Location
44:190 Consumer and Firm Behavior
44:270 Price Theory

44:203 Microeconomics
44:237 Urban Economics and Urban Spatial Structure
44:285 Methods of Regional Analysis: Regional Science
44:295 Advanced Location Theory
44:330 Research Seminar. Location Theory

Political Geography
44:175 Social Theory and Space
44:175 Local Conflict
44:190 Consumer and Firm Behavior
44:270 Price Theory

44:285 Philosophy and Epistemology in Geography
44:220 Political Economy of Regional Development
44:270 Jurisdictional Organization/Public Service Provision
44:315 Research Seminar. Political Geography

Regional Development
44:194 Geographic Perspectives on Development
44:230 Philosophy of Epistemology in Geography
44:230 Political Economy of Regional Development
44:253 Regional Location and Regional Development in Latin America
44:294 AGRICULTURAL AND RURAL DEVELOPMENT IN THE THIRD WORLD
44:394 Research Seminar. Regional Development

Transportation Systems Analysis
44:220 Probability and Statistics
44:270 Introduction to Economics
44:190 Consumer and Firm Behavior
44:270 Price Theory
44:203 Microeconomics
44:285 Methods of Transportation Analysis
in the areas of locational analysis, spatial behavior, transportation, Third World regional development, urban political geography, and water resources management.

The Ph.D. is a four-year program. The first two years of the program are identical to the department's M.A. program. Students can enter the program with advanced standing corresponding to their previous graduate training equivalent to that in the department's M.A. program. Students entering the program directly from the B.S. or B.A. must fulfill all departmental requirements for the M.A. except for the M.A. examination. In addition, students whose ultimate objective is the Ph.D. are required to:

• Complete at least 3 additional semester hours in graduate-level geography courses from those required or recommended for one of the department's subprograms that is not the student's general area of interest.
• Complete at least one additional quantitative methods 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 both the M.A. and Ph.D. quantitative methods requirements—a total of 6 semester hours—during their first year in residence).
• Complete one additional research seminar under the direction of a faculty member who is not directing the research seminar satisfying the student's M.A. requirement and.
• Register for the department's colloquium series. 44390 Research Seminar staff.

Before students can be admitted formally to candidacy for the Ph.D., they must submit an original research paper to the faculty for the department's approval. After the faculty completes the M.A. with thesis or submit the M.A. thesis to fulfill this requirement. Students entering the program with an M.A. from another institution may submit thesis or research papers completed elsewhere to fulfill the requirements. Students who jointly enter the M.A. program with a terminal M.A. as their degree objective and who complete that program can enter the Ph.D. program by fulfilling the research paper requirement.

By the end of the M.A. portion of the program (typically the fourth semester for the student entering the program directly from the B.S. or B.A.), the student should submit a written report that includes an outline of progress to date, an outline of the area of geography in which he or she intends to specialize, and a proposed plan of study for the remainder of his or her Ph.D. program. This report is prepared in consultation with the student's Ph.D. advisor and other members of the faculty in the student's general area.

study is intended as, necessary, throughout the remainder of the student's program. The remainder of the Ph.D. program includes the completion of the student's individual program of study designed to prepare him or her for a career in research in a specific area of concentration. It consists of appropriate graduate courses, seminars, readings, and independent research in geography courses in related disciplines and courses that satisfy the total requirements of the student's program of study. Prior to taking the comprehensive examination consisting of both written and oral components, the student must submit an "area review paper" to his or her Ph.D. committee. This paper, which must be approved by the student's Ph.D. advisor, consists of a critical review of research in the student's area of concentration. As such, it is a culminating step in a student's program of study as well as a statement of future research directions. The comprehensive examination itself includes both the written examination and, if the study is of more general interest. The student must complete and defend the dissertation. Before entering the Ph.D. degree, students are expected to complete both classroom seminars (or teaching assistants) and academic seminars.

Admission

In addition to the general rules and regulations set forth in the Manual of Rules and Regulations of the Graduate College, students in the department's subprograms must have a grade-point average of 3.00 or better to be admitted to the M.A. or Ph.D. program in geography. Students from foreign countries must meet undergraduate institutions that evaluate students on a basis other than grades-point average will be considered according to academic standing in their respective institutions.

Financial Aid

A number of graduate appointments as teaching or research assistants are available. Awards are based on merit. Students who must have completed work of 100 on the GRE Aptitude Test and who are admitted to the M.A. program or graduate grade-point average to be appointed to an
461 Introduction to Human Geography 3 a.h.
Applications of geographical principles to contemporary social, economic, and political problems, urban growth, problems of land use, nature and culture, and the role of the physical environment.

461 Introduction to Physical Geography 3 a.h.
Introduction to physical geography, principles of climatic series, topography, soil systems, and weather systems, the nonliving earth, and the interrelationships between natural systems.

461 Introduction to Social Geography 3 a.h.
Introduction to the geography of population, political systems, economic systems, and cultural systems, world cultures, urban systems, transportation systems, and economic systems.

461 Technology and the Environment 3 a.h.
The effects of technology on the environment, including air, water, land, and the global environment, and the role of technology in solving environmental problems.

461 F Introduction to Political Geography 3 a.h.
Geopolitical problems and principles applied to the political geography of national, regional, and local areas, and the role of political systems in solving environmental problems.

461 Controversial Environmental Issues 3 a.h.
Problems associated with population growth, technology, the environment, and the role of political systems in solving environmental problems.

461 Introduction to Economic Geography 3 a.h.
Locational and spatial organization of the world's major types of economic activities, energy and mineral resource utilization, transportation, trade, and economic growth.

461 World Cities 3 a.h.
Introduction to urban geography and urbanization, urbanization as a process through history, urban systems, and the role of political systems in solving urban problems.

461 Readings for Undergraduates 3 a.h.
Supervised readings in geography, prerequisite: consent of instructor.

For Undergraduates and Graduates

4611 Cenology 3 a.h.
The study of living things and their atmospheric, hydrological, and oceanographic systems, including ecosystems, biocenosis, and biogeochemical systems.

4612 Earth Surface Processes 3 a.h.
The study of the Earth's surface, emphasizing processes of weathering, erosion, mass movement, and sedimentation, and the role of these processes in the evolution of the Earth.

4613 Historical Biogeography 3 a.h.
The distribution and evolution of plants and animals, and the role of political systems in solving biogeographical problems.

4614 Biogeography 3 a.h.
The study of the distribution and evolution of plants and animals, and the role of political systems in solving biogeographical problems.

4615 Maps and Mapping 3 a.h.
Study of a good map as a tool of analysis, types of maps, and the role of political systems in solving mapping problems.

4616 Computer Methods in Geographical Analysis 3 a.h.
The use of computer mapping as a tool in geographical analysis, including the use of GIS (geographic information systems) and other software, and the role of political systems in solving computer mapping problems.

4617 Spatial Organization 3 a.h.
The study of the spatial organization of human activities and natural systems. Offered for credit only.

4618 Geographic Information Systems 3 a.h.
The study of geographic information systems, including the use of GIS (geographic information systems) and other software, and the role of political systems in solving computer mapping problems.

4619 Natural Resources Policy 3 a.h.
The study of natural resources policy, including the role of political systems in solving environmental policy problems.

4620 Environmental Conservation in the United States 3 a.h.
The study of environmental issues in the United States, and the role of political systems in solving environmental policy problems.

4621 Water in the Biosphere 3 a.h.
The study of water resources and production, and the role of political systems in solving water resource problems.

4622 Disasters: Basic Forms and Processes 3 a.h.
The study of natural disasters, including the role of political systems in solving natural disaster problems.

4623 Location Strategy of Firms 3 a.h.
The study of location strategy, including the role of political systems in solving location strategy problems.

4624 Natural Resources Management 3 a.h.
The study of natural resource management, including the role of political systems in solving natural resource management problems.

4625 Spatial Behavior 3 a.h.
The study of human behavior, including the role of political systems in solving spatial behavior problems.

4626 Urban Water Supply 3 a.h.
The study of urban water supply, including the role of political systems in solving urban water supply problems.

4627 Urban Water Supply 3 a.h.
The study of urban water supply, including the role of political systems in solving urban water supply problems.

4628 Urban Water Supply 3 a.h.
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4629 Urban Water Supply 3 a.h.
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4630 Urban Water Supply 3 a.h.
The study of urban water supply, including the role of political systems in solving urban water supply problems.

4631 Medical Geographic Health Services 3 a.h.
The study of health services, including the role of political systems in solving health services problems.

4632 Industrial Location 3 a.h.
The study of industrial location, including the role of political systems in solving industrial location problems.

4633 Transportation 3 a.h.
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4680 Transportation 3 a.h.
The study of transportation, including the role of political systems in solving transportation problems.
4446 Research The Teaching of Geography

44460 Research: Environmental Systems Analysis

44462 Research: Landscape Analysis

44464 Research: Spatial Behavior

44465 Thesis

44468 Geography

Chair: Holger A. Sorensen

Professor: William M. Tomasson, Assistant Professor: Robert L. Birdwell, Thomas Foye, Assistant Professor: Ann R. Foster, Mark D. Reagan, Assistant Professor: Brian A. Bailey, Gary Holmberg, Daniel Koch

Assistant: assistant: Professors: R. Sauders, Robert D. Waddell

Graduate degrees offered: Ph.D., M.S., B.S.

Graduate courses offered: M.S., Ph.D., in Geography

Geology is the basic study of the earth's interior and its surface, and the application of scientific methods to understand the destruction. Geology includes the study of the structure of the earth, its history, and the materials that make it up.

Department of Geology

The Department of Geology has the following members: Mike M. Middle, Pete R. Middle, and Mark A. Middle.

Undergraduate Students

Students majoring in geology must take the following courses in the College of Liberal Arts in order to satisfy the degree requirements: 12.5 credits in environmental science, 12 credits in earth sciences, 12 credits in physical sciences, and 12 credits in social sciences.

Bachelor of Science in Geology

The Bachelor of Science in Geology program is designed to provide students with a broad knowledge of geology and its applications. The program requires a minimum of 120 credits, including 40 credits in the core curriculum, 40 credits in the major, 30 credits in electives, and 10 credits in a minor.

Students majoring in geology must take the following courses in the College of Liberal Arts: 12.5 credits in environmental science, 12 credits in earth sciences, 12 credits in physical sciences, and 12 credits in social sciences. At least 10 semester hours of college mathematics, including MATH 20 Calculus II or MATH 35 Engineering Calculus II, Computer science or statistics courses may be counted toward the 10-semester-hour requirement.
Geology ● Liberal Arts 125

Additional mathematics courses are strongly recommended.

Eight-hour seminars in physics, 8 semester hours of chemistry, and a course with a lab in a biological science also are required.

Bachelor of Arts

The Bachelor of Arts program is designed to provide a general background in geology— with a broader choice of electives than that for the B.S. program—for students who are not planning to become professional geologists. With appropriate course work in education, the B.A. program provides a base for high school or community college teaching. A general background in geology and allied fields also is applicable in areas such as conservation and environmental problems.

Course requirements for the B.A. in geology:

12.5 Introduction to Geology 4 s.h.
12.6 Evolution of the Earth 4 s.h.
12.41 Mineralogy 4 s.h.
12.52 Elementary Petrology 4 s.h.
12.51 Principles of Paleontology 3 s.h.
12.52 Field Trip (two sections) 4 s.h.
Geology electives 12 s.h.
Total 35 s.h.

The student may substitute 12.25 Earth History and Resources and/or 12.24 introduction to Environmental Geology for 12.25 Introduction to Geology, but 12.25 is preferred for the major.

The B.A. in geology requires at least 20 semester hours in mathematics, which may include computer science or statistics.

Eight semester hours of chemistry are also required, and courses in other science and social sciences appropriate to the student's objectives are recommended.

Minor

Required is a minimum of 15 semester hours of geology courses: 12.25 Earth History and Resources and and 12.24 Introduction to Environmental Geology may be counted as courses in geology.

At least 12 of the 11 semester hours must be advanced geology courses taken at The University of Iowa. All geology courses numbered 101 and above, except 12.103 Physical Geology and 12.104 Historical Geology, may be taken as advanced courses. In addition, 12.41 Mineralogy, 12.52 Petrology, and 12.52 Structural Geology may be applied toward the major.

College-level courses in mathematics, physics, chemistry, and biology also are required as collateral work for geology students. Those seeking a minor in geology should be sufficiently prepared in the areas of supporting sciences before they take advanced courses in geology.

Recommended advanced courses in geology that deal with important areas of earth science and earth processes are:

12.41 Mineralogy
12.52 Elementary Petrology
12.52 Structural Geology
12.51 Principles of Paleontology
12.12 Sedimentology
12.16 Principles of Stratigraphy
12.71 Geomorphology
12.180 Solid Earth Geophysics

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 assist a faculty member or guide a student with a current research project, or may initiate a small-scale project involving a combination of field, laboratory, and library investigation. Independent study is encouraged. Undergraduate classes have produced term reports that subsequently were published.

Honors

A degree with honors in geology is conferred. Students in the honors program can elect a senior thesis.

Graduate Programs

Students planning to take graduate work in geology should have completed geology 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 12.067 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 in this catalog for general information and graduate study requirements.

Master of Science

The M.S. degree programs are designed to provide 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.

Entering graduate students are assigned to a general graduate adviser. Before the end of the second semester, the student should select a research area and defend thesis topic. The department chair then appoints a thesis adviser and two 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, and for satisfactory development of research ideas as outlined in the thesis proposal that is submitted for departmental approval.

The degree requires at least 30 semester hours in graduate-level course work, including 90 more than 8 semester hours of thesis and research credit, and at least 24 semester hours in residence at The University of Iowa.

Master's degree candidates complete at least one of the above language and tool 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. Additionally, the grade-point average on all graduate geology courses should be at least 3.0. Not more than 8 semester hours of thesis and research may be counted toward the 30-semester-hour minimum required for the degree program.

M.S. with Thesis

Students are encouraged to select these topics involving an original research project and a title reflecting the discipline and the results of the study. Students should select a thesis topic upon entering the graduate school. When the thesis is completed, the student must register for thesis credit and complete it as required by the Graduate College.

M.S. without Thesis

The department encourages few students to pursue the M.S. without thesis. The program requires that applicants have approximately three months' experience working under supervision of a professional geologist or the equivalent experience in some phase of geologic activity. Students should choose prior faculty permission to apply the experience toward the degree. They must submit a written report on the activity, describing the geological principles involved and its value and broader implications. No college credit is granted.

The M.S. degree without thesis requires at least 30 semester hours of graduate course work, of which at least 8 semester hours must be earned in other departments of the University.

The faculty also may require that students attend an annual 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 propr-enables students to combine certification to teach secondary school with participation in a specialized graduate curriculum. Approved by the College of Education, the M.A.T. degree requires at least 20 semester hours of graduate study in professional education and at least 18 semester hours of graduate science coursework in earth science.

Doctor of Philosophy

The Ph.D. degree in geology requires at least 72 semester hours of graduate course work, including 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 other tool areas. Courses in relate disciplines, such as botany, chemistry, physics, and biology, are not regarded as satisfying tool requirements, although they may provide indispensable background for geological specialization.

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, will be taken in on the course work may be applied to satisfying requirements in another.

As appropriate graduate course in another discipline, courses cross-listed between geology and other departments generally are not considered to meet this requirement.

At least 24 semester hours of graduate course work, exclusive of credits for dissertation research and beyond college work applied toward the M.S. degree.

The comprehensive examination covers, in depth, all subsections 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 textbooks.

Major and Minor Fields

Economic geology

Petroleum

Deposits

Mineral economics

Mineralogy

Crystallography

Determinate tectonics

Crystal chemistry and mineral chemistry

Igneous and metamorphic petrology

Igneous petrology

Metamorphic petrology

Aqueous geochemistry and thermodynamics

Structural geology

Geotectonics

Structural analysis

Remote sensing

Geophysics

Exploration geophysics

Solid-earth geophysics

Rock properties

Stratigraphy

Physical stratigraphy

Biostratigraphy

Depositional environments

Sedimentary petrology

Sedimentation

Sediment and carbonate petrology

Physical stratigraphy

Pleistocene studies

Pleistocene geology

Vorontsov paleontolology

Quaternary paleontology

Paleontology

Paleobotany

Paleontology

Biostratigraphy

General geomorphology

Glacial and Pleistocene

Remote sensing

Environmental geology

Hydrogeology

Remote sensing

Engineering geology

Other minor subjects

Botany

Biology

Chemistry

Physics

Materials engineering

Geology

Fossils

Archaeology-ethnography

Scientific education

Resources and equipment available for research in the Department of Geology include mineralogy/petrology lab (X-ray diffraction, powder camera, wet chemistry lab, A.A. spectrophotometer, microscopes); sedimentology lab (television lab, petrographic facies, cathodoluminescence); paleontology lab (scanning electron, vvtrocoater, paleontologic, including a major repository); photographic lab, geophysics (gravimeter meter, field and neck magnetometers, susceptibility meter, gravimeter, high-pressure apparatus); Geological Survey Bureau located in an office building in the department, with subsurface core systems and geologic Maine; a-fax terminal for the University of Iowa Computing Center (IBM 370, ultimate 7094, EDFOR-02 computer); trailer-mounted field and site; scanning electron microscope in the library with 35,000 volumes/journals; and 40,000 maps.

Cooperative Activities

The department has collaborative work with the Geological Survey Bureau and geology students sometimes work on projects for the bureau.

The departments of Geology, Geography, Anthropology, Chemistry, Biology, and Biology work in cooperation in sharing services, equipment, joint instruction, and equipment.

The geology department is an important partner to the Iowa Geology Survey, which provides expertise in geology and paleontology, biology, and anthropology, and other earth sciences. These projects have been funded by the State of Iowa, and facilities are shared among departments.

Field Trips

Field trips are integral parts of several courses in geology with frequent weekend general-interest events. In the Iowa City region, the geology is characterized by a layer of glacial drift on a large moraine raised by a glacial scour. The moraine extends up to 300 feet thick, overlying a preglacial crystalline bedrock. The moraine is divided into four different moraines, each with unique invertebrates. The geology of the moraines is relatively straightforward, and the fossiliferous units can be easily identified.

Springs break provides time for longer trips available to all geology students. In recent years, students have traveled to Death Valley, the Florida Keys, the southern Appalachian, the Big Bend region of Texas, and the Okanagan. Advanced classes visit Colorado, Ontario, Kansas, Oregon, and California.

Facilities

Resources and equipment available for research in the Department of Geology include mineralogy/petrology lab (X-ray diffraction, powder camera, wet chemistry lab, A.A. spectrophotometer, microscopes); sedimentology lab (television lab, petrographic facies, cathodoluminescence); paleontology lab (scanning electron, vvtrocoater, paleontologic, including a major repository); photographic lab, geophysics (gravimeter meter, field and neck magnetometers, susceptibility meter, gravimeter, high-pressure apparatus); Geological Survey Bureau located in an office building in the department, with subsurface core systems and geologic Maine; a-fax terminal for the University of Iowa Computing Center (IBM 370, ultimate 7094, EDFOR-02 computer); trailer-mounted field and site; scanning electron microscope in the library with 35,000 volumes/journals; and 40,000 maps.

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GERMAN

Chair: Wolfgang Ehr

Professor: Justus F. Albin, Edward O'Connell, and Karl Jansky

Assistant Professor: Susan J. Gils

Graduate degrees offered: M.A., M.A.L., in German Languages and Literatures; Ph.D. in Germanic Languages and Literatures.

The primary function of the Department of German is to transmit to interested American (liberal arts) students a knowledge of the language, literature, and culture traditionally developed in German, as expressed in the language and cultural heritage of West and East Germany, Austria, and Switzerland.

University graduates with degrees in German frequently enter the teaching profession. They also may find positions in government, foreign service, and commercial enterprise.

Undergraduate Program

Students majoring in German choose one of two major tracks: the humanities track or the applied German track. The humanities track enables students to concentrate in Germanic language, literature, and culture, both past and present. It is recommended for students who want to explore the German world of ideas and their influence through the ages. The track requires for students who plan to pursue graduate study in German and for those who plan to complete the graduate teaching major in German in conjunction with the College of Education.

The applied German track is designed to give students practical skills and proficiency in the language for use in business and government. It is especially useful when combined with a business-oriented curriculum.

For students who enroll at The University of Iowa after June 1, 1966, each track usually requires 30 semester hours of course work beyond the basic program. Students who first enrolled at The University of Iowa before June 30, 1966, are held to a 24-semester-hour requirement.

The following course sequences, or equivalents, are required for students who begin a major in German with no previous experience in the German language.

Basic Program

13.11 Elementary German I 4.0
13.12 Elementary German II 4.0
13.21 Intermediate German I 5.0
13.22 Intermediate German II 5.0
13.27 Survey of Modern German Literature 2.0

The Basic program also may be extended by various combinations of courses from the following: 13.13, 13.14, 13.25, 13.26, and 13.27. See the German department undergraduate advisor for details.

Humanities Track

Third Year

13.01 Introduction to Modern German Literature 4.0
13.12 Introduction to Modern German Literature II 4.0
13.13 Survey of German Literature I 4.0
13.14 Survey of German Literature II 4.0
13.15 Introduction to Modern German Literature and Conversation I 2.5
13.16 Introduction to Modern German Literature and Conversation II 2.5

Fourth Year

13.10 German Cultural History 3.0
13.11 Survey of German Literature I 3.5
13.12 Survey of German Literature II 3.5
13.15 Introduction to Modern German Literature and Conversation 2.5
13.16 Graduate Special Topics 3.0

An elective from the courses offered within the department or, with approval of the major advisor, a course related to Germanic studies offered in another department 3.5

Applied German Track

Third and Fourth Years

13.10 Compositions and Conversation I 4.0
13.11 Compositions and Conversation II 4.0
13.16 Principles and Techniques of Translation 3.0
13.20 German Media 3.0
13.13 Business German 3.0
13.17 Contemporary German Civilization 3.0
13.18 Advanced Composition and Conversation 3.0
13.19 Advanced Special Topics 3.0

13.20 Germanic special topics

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13.22 Introduction to Modern German Literature II 4.0
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13.20 German Media 3.0
13.13 Business German 3.0
13.17 Contemporary German Civilization 3.0
13.18 Advanced Composition and Conversation 3.0
13.19 Advanced Special Topics 3.0

13.20 Germanic special topics
One German department course in literature or culture 3 s.h.
An elective from the courses offered within the department or, with the approval of the major advisor, a course in Germanic studies offered in another department 3 s.h.
*May be taken in either order.*

German majors, graduate as well as undergraduate, are urged to supplement their degree programs with relevant courses in areas such as German history, philosophy, and business.

Students with native proficiency in German should declare German as only a second major and must complete a full first major in a subject in which they have no such obvious advantage over their peers.

**Minor**

A minor in German requires 15 semester hours of coursework in college-level German. Twelve of these semester hours must be in advanced courses (13.190 and above) in the University of Iowa. All courses numbered 160 and above count toward the minor except 13.118, 13.123, 13.124, 13.137, 13.138, 13.144, 13.171, 13.182, and 13.183.

**Certification for Teaching Minor**

In addition to the basic program requirements for the first and second year, students must take the following courses or their equivalents for certification of the teaching minor in German.

13.103 Introduction to Modern German Literature I 3 s.h.
13.102 Introduction to Modern German Literature II 3 s.h.
13.103 Composition and Conversation 3 s.h.
13.104 Composition and Conversation 3 s.h.
13.116 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 in upper-division German courses.

Participating students register for the following courses.

13.190 Honors Project in German 3 s.h.
13.191 Honors Research and Thesis 3 s.h.

Honors students are expected to engage in readings and discussions in German literature and culture, as well as write essays in German and English. Students may 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 of German who demonstrate an interest in and potential for productive scholarship and who plan to continue in doctorate study 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 the Graduate College (see the "Graduate College" section of the Catalog). Students who have not completed major courses or equivalents in the Department's undergraduate program must take those courses along with the coursework required for the Master of Arts degree. Under some circumstances, candidates may qualify for graduate credit for such work.

With the graduate advisor's approval, some of the 30 semester hours required for the degree may be taken outside the department in related subjects such as philosophy, history, linguistics, or other languages.

Generally, students may receive no more than 9 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 such as secondary school teaching, government service, or translation work may elect the master's degree program without thesis. This program requires a minimum of 38 semester hours of course work and is considered a terminal degree.

The same course requirements are valid for the M.A. with thesis and for candidates for the M.A. without thesis, however, students in the latter program should, with the approval of the graduate advisor, select those 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 42 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 concentration in either Germanic linguistics or German literature.

Credits received toward the M.A. degree usually is applied to the Ph.D. Students may earn up to 12 additional semester hours of credit for satisfactory completion of the Ph.D. dissertation. The M.A. degree is awarded only after the approval of the graduate advisor.

**Graduate Degree Language Tools**

**Master of Arts**

Before the M.A. exam can be administered, candidates must demonstrate a reading knowledge of a foreign language other than German, at a level equivalent to two years of college study or four years of high school study.

Competence may be demonstrated either by submitting proof of having taken the required course work with a grade-point average of 3.00 or higher, or by passing an exam at the fourth-semester college level as determined by the appropriate language department.

**Doctor of Philosophy**

A candidate concentrating in literature must demonstrate a reading knowledge of French and of another language that is determined by the advisor to be pertinent to the candidate's research interests.

Doctoral candidates in Germanic linguistics must demonstrate a reading knowledge of French or Russian and of at least one modern Scandinavian language or Dutch.

Competence 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 Fuske prizes to students of distinction.

**Special Facilities**

Students have the opportunity to improve their comprehension and command of German by working with recorded materials in the Language Media Center. They also may benefit from the computer-assisted instruction program. An extensive collection of works and periodicals in the University Libraries facilitates research in all major areas of German literature and Germanic linguistics at all levels of study.

The Foreign Language House is available to undergraduate and graduate students as an off-campus housing option.
13.175 Opera in Drama 3 s.h.
Literate and ear as the content and interpretative elements of drama, study of the play from an aesthetic and textual, rather than a psychoanalytic viewpoint. Prerequisite: 13.071. Fall.

13.192 Literature on Major Themes, which may be read in English translation.

13.193 The Feel Tradition in Western Civilization 3 s.h.
Development of the Feel tradition in Western literature, beginning with the works of Beowulf and the Troy Cycle, with an emphasis on the heroic ideals of love, loyalty, and duty in heroes and their families. Prerequisite: 13.192. Fall.

13.193 Music Program in German 3 s.h.
Introduction to the study of literature in German literature and culture major, music majors, and other majors majoring in German and English, majoring in music and English, and other majors, with a minor in English, in German as an area of study. Prerequisite: 13.192. Fall.

13.193 Music Research and Thesis 3 s.h.
Preparation of source thesis and presentation in a faculty committee of at least three members. Open to honors students only. Prerequisite: 13.192 Fall and consent of instructor.

13.193 Undergraduate Special Topics 1-3 s.h.
Open only to advanced undergraduates. May be repeated. Permission of instructor.

Language Courses for Graduate Nonmajors
13.110 Intermediate German 4 s.h.
Open only to graduate students. Open only to graduate students for all except 13.125. Prerequisite: 13.110. Fall and Spring.

13.115 Advanced German I 3 s.h.
Open only to graduate students. Prerequisite: 13.110. Fall and Spring.

13.117 Advanced German Writing 1 3 s.h.
Open only to graduate students. Prerequisite: 13.110. Fall and Spring.

For Graduates
13.095 Advanced Studies Seminar 2-4 s.h.
Special problems of German literature and linguistics. Open only to graduate students.

13.191 German Prospects 2 s.h.
General introduction to graduate study in any of German literature and Culture. Recommended for doctoral students majoring in bibliography, methods of research, foreign preparation, and writing and other specific problems.

12.024 The German Novel 3 s.h.
May be repeated.

13.035 German Poetry 3 s.h.
May be repeated.

12.024 The German Drama 3 s.h.
May be repeated.

12.032 German Occasionals 2-3 s.h.
History of the German Language. Open only to graduate students. Prerequisite: 13.110. Fall.

12.035 Wiehing High German 3 s.h.
Prerequisite: 13.110. Comprehensive in language. Open only to graduate students. Prerequisite: 13.110. Fall.

12.046 Middle High German Literature 3 s.h.
Prerequisites: 13.110. Comprehensive in language. Prerequisite: 13.110. Fall.

12.047 German 3 s.h.
May be repeated.

12.048 History of the Scandinavian Languages 3 s.h.
Language study in English. Hours in French, Swedish, and Norwegian. Open only to graduate students. Prerequisite: 13.110. Fall.

12.050 Literature of the Middle Ages 3 s.h.
German literature from earliest documents to Wiehing High German period.

13.051 German Literature of the Renaissance and Reformation 3 s.h.

13.071 German Literature of the Baroque 3 s.h.

13.081 The Age of Enlightenment and the Early Period of German Literature 3 s.h.

13.082 The Age of Goethe 3 s.h.

13.083 Goethe's Poetry 3 s.h.

12.091 Goethe's Writings 3 s.h.

12.092 Goethe's Drama and Poetry 3 s.h.

12.093 Critical Approaches to Goethe 3 s.h.

13.108 Special Topics in German Literature (Open only to graduate majors in German; may be repeated)

13.109 Master's Thesis 3 s.h.

13.110 Pre-Course Registration 3 s.h.

13.111 Seminar in Early German Literature 3 s.h.
May be repeated.

13.112 Seminar in German Literature of the Eighteenth Century 3 s.h.
May be repeated.

13.113 Seminar in German Literature of the Nineteenth Century 3 s.h.
May be repeated.

13.114 Seminar in German Literature of the Twentieth Century 3 s.h.
May be repeated.

13.115 German Poetry of the Twentieth Century 3 s.h.
May be repeated.

13.003 Theory of Literature 3 s.h.

13.400 Ph.D. Dissertation 12 s.h.

GLOBAL STUDIES
Chair: Avery C. McKeen (Religion)
Committee members: Stephen Arnow (Office of International Education), Michael Banham (English), Ross Davidson (English), Barbara Edgren (History), Fred Field (Canada), Ivan Johnson (International Studies), Mark Miner (Arts), Peter Rice (Economics), John Saxe (Economics), Allen Scherman (History), Dorothy Seidler (History), Barry West (Economics), and St. Louis (Economics). The Global Studies Program provides undergraduate students with a multidisciplinary study of major contemporary, international issues: war, peace, and security; development and human resources; environment and natural resources; and cross-cultural understanding.

Students interested in complementing their study with courses that emphasize these issues may work toward a certificate or a minor in global studies; or, if they are eligible, they may pursue an honors interdisciplinary minor in global studies.

The Global Studies Program provides suitable background for a variety of careers. Depending on the choices made in shaping the program, it can provide a broad, integrated base for more specialized or advanced work in a variety of academic disciplines, or for the study of law. It also provides suitable background for work in international business and with international and governmental agencies.

Programs
Certificate Program in Global Studies
The Certificate Program in Global Studies is designed to provide an international and global perspective on the world’s major issues, as well as for those working toward the Bachelor of Science (B.S.) degree. Students in diverse fields such as engineering, business, anthropology, journalism, history, economics, and political science have completed the certificate program.

Students complete all requirements for their departmental major as well as the requirements of the certificate program. Those who complete the requirements are awarded a certificate from Global Studies. When they receive their bachelor's degrees, and the completion of the program is noted on their transcript.

Requirements
Students in the certificate program must take courses in a foreign language, in the basic area, and in at least four of emphasis areas: War, peace, and security; Development and human resources; Environment and natural resources; and Cross-cultural understanding.

Students must complete with at least a 2.0 grade-point average, 9 semester hours of courses from the basic area. In addition, they must complete 12 semester hours of courses drawn from the four emphasis areas, also with at least a 2.0 grade-point average. These courses must be distributed as follows: one course from each of any three of the areas, and three courses from the fourth area. (See also "Additional Emphasis Courses," below.)

Foreign Language
All certificate program students, including B.S. students, are required to complete two years of study of a foreign language or equivalent. Students are encouraged to go beyond this minimal requirement. Students interested in completing the global studies director at registration each semester they are in the program.

BASIC COURSES
41.1 Global Interdependence and Human Survival (3 s.h.)
47.190 Global Studies Seminar (3 s.h.)
One of the following courses (3 s.h.): 30.110 Introduction to World Politics 30.112 International Politics 30.111 International Organizations 30.152 American Foreign Policies 67.150 Perspectives in Global Studies
Global Studies • Liberal Arts

310.120 The Politics of International Economics
41.125 International Economics
61.102 United States in World Markets
50.101 Human Rights in the World Community: Problems of Law and Policy
31.105 Introduction to Public International Law

War, Peace, and Security
This component of the Global Studies Program deals with the use of armed force for the pursuit of political ends or on a continent ranging from potential global nuclear war to individual acts of terrorism. The approaches consider cause, effect, limitation, and resolution of violence in the contemporary setting.

30.166 Politics of War and Peace
61.143 War and Society

Development and Human Resources
This component of the Global Studies Program deals with the problems of poor and developing countries analyzed along economic, sociological, and political lines. Of special interest are the ways in which developed and developing countries interact, and how these interactions are thought to influence the character and prognosis for the developing countries.

One of the following:
30.150 The Political Economy of the Third World
133.551 Geography of the Third World
195.157 Third World Development Support

Environment and Natural Resources
This component of the Global Studies Program is concerned with the vulnerability, use, and disposal of global resources. Of special concern are the environmental problems arising from the transformation of these resources by humans using modern technology.

44.15 Contemorary Environmental Issues

Cross-cultural Understanding
Global issues require for their analysis and solutions perspectives educated to understand that perceptions, values, and taboos vary among societies, that these differing values complicate the process of people communicating about and arriving at possible solutions to global problems, and that without careful examination, it is easy to accept as absolutes the perceptions, values, and taboos of any one society as culture.

The goals of this program component are to highlight cross-cultural differences as a major contemporary global issue, to address some of the sources, dimensions, and policy implications of these value differences, to foster cross-cultural understanding and sensitivity that are required for meaningful engagement with global issues, and to encourage students to clarify their own values as they bear on the analysis of global problems and proposals for their amelioration.

119.13 Introduction to the Study of Culture and Society
119.10 Anthropology and Contemporary World Problems

Additional Emphasis Courses
A list of additional courses that satisfy the requirement of three courses in a single emphasis area is available from the Global Studies office. Students pursuing the global studies minor should consult with the global studies director each semester they are in the program.

Minor
The requirements for the global studies minor are the same as those for the certificate, except that courses taken in the student's major department do not count toward the minor.

Honors Major
The honors major is a body of coherent program that provides a great deal of flexibility, yet at the same time it has a definite structure. To be eligible, students must be in the College of Liberal Arts Honors Program. They are required to demonstrate an ability to use one foreign language to take a core curriculum of courses in global studies and from several different departments to develop a familiarity with one major world area, and to study in some depth one of three areas of topical concentration. Specifically, the requirements of the honors major are as follows.

Language
Each student is required to demonstrate an ability to use one foreign language. Ordinarily the language should be relevant to the area chosen for study. The details of this requirement are worked out on an individual basis. In no case is the requirement less than that for the B.A. degree of the College of Liberal Arts and it commonly requires more work.

Honors Core Curriculum
All students take the learning core curriculum of 27 semester hours. Four courses must be chosen from group A and three from group B. In addition, students are advised to satisfy the General Education Requirement in quantitative or formal reasoning by taking a course in statistics.

Group A: Four courses chosen from the following:

61.125 International Economics
30.170 The Politics of International Economics

A course on the history of the United States as a world power (e.g., 104.132 The United States in World History, 1900-1975)
30.120 Introduction to World Politics
31.105 Politics of War and Peace
16.131 War and Society
44.19 Contemporary Environmental Issues
30.120 The Political Economy of the Third World
195.157 Third World Development Support
133.551 Geography of the Third World

World Area
Students take 12 semester hours of courses that focus on a major world area other than the area with which the student is primarily familiar. Areas and suggested languages for which there are sufficient course offerings at The University of Iowa are listed below. If a student wishes to study a particular area for which courses are not available in sufficient number (e.g., the Middle East), these may, with the approval of the program chair, be taken at another institution and transferred.

Asia (Chinese)
Japan (Japanese)
India (Hindi)

Europe
France (French)
Germany (German)
Great Britain (English)
Western Europe (French, German, Spanish, Italian)

Eastern Europe and/or the Soviet Union (Russian, German)

Latin America (Spanish, Portuguese)

Africa (French)

Because of the additional time required for some of these languages, students who choose Chinese or Japanese may use 6 semester hours of language study and those who choose Russian may choose 3 semester hours of language study in fulfillment of this requirement. A list of the courses that may be used to satisfy the requirement is available from the global studies chair.

Topical Co-orientation
Each student also develops a topical concentration (15 semester hours) focused on one of the following:

- A course on the history of the United States as a world power (e.g., 104.132 The United States in World History, 1900-1975)
- 30.120 Introduction to World Politics
- 31.105 Politics of War and Peace
- 16.131 War and Society
- 44.19 Contemporary Environmental Issues
- 30.120 The Political Economy of the Third World
- 195.157 Third World Development Support
- 133.551 Geography of the Third World
- World Area
  - Students take 12 semester hours of courses that focus on a major world area other than the area with which the student is primarily familiar.
  - Areas and suggested languages for which there are sufficient course offerings at The University of Iowa are listed below.
  - If a student wishes to study a particular area for which courses are not available in sufficient number (e.g., the Middle East), these may, with the approval of the program chair, be taken at another institution and transferred.
- Asia (Chinese)
- Japan (Japanese)
- India (Hindi)
- Europe
  - France (French)
  - Germany (German)
  - Great Britain (English)
  - Western Europe (French, German, Spanish, Italian)
- Eastern Europe and/or the Soviet Union (Russian, German)
- Latin America (Spanish, Portuguese)
- Africa (French)
- Because of the additional time required for some of these languages, students who choose Chinese or Japanese may use 6 semester hours of language study and those who choose Russian may choose 3 semester hours of language study in fulfillment of this requirement. A list of the courses that may be used to satisfy the requirement is available from the global studies chair.
- Topical Co-orientation
  - Each student also develops a topical concentration (15 semester hours) focused on one of the following:
**Courses**

401 Global Interdependence and Human Security

410 Introduction to global studies (3 a.h.)

412 Contemporary Africa (3 a.h.)

415 Problems in Global Studies (3 a.h.)

417 Individual Projects in Global Studies (3 a.h.)

430 Comparative European News (3 a.h.)

440 African News (3 a.h.)

441 International Security Affairs (3 a.h.)

450 Global Studies Seminar (3 a.h.)

451 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 bodies of information and approaches to understanding the ways societies and cultures work. For students majoring in history are encouraged to fulfill the College of Liberal Arts degree requirement in a foreign language by selecting a language that fits their history interests.

The general major is for students with a general interest in history. The program requirements are:

- A minimum of 24 semester hours in courses offered by the Department of History numbered 1511 or higher, of which at least 12 semester hours must be in non-U.S. history courses. This limitation is in order to encourage acquaintance with the history of at least one other society besides our own.

- Three semester hours in 1511 Colloquium for History Majors; a colloquium consists of a small number of students collectively studying problems in ways that give training and experience in group discussion, analysis, and criticism; it is required that the student have finished a number of other history courses.

- A minimum of 10 to 18 semester hours of course work in related areas, such as anthropology, economics, fine arts (excluding studio courses), geography, literature (excluding workshop courses), philosophy, political science, psychology, religion, and sociology; a second major in one of these areas, courses taken to satisfy General Education Requirements will not be counted toward the related-areas requirement.

Of the 24 semester hours of history required for the major, 12 (excluding 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 majoring in history may waive 3 semester hours of the General Education Requirement in historical perspectives. They may substitute credit toward this requirement by taking any of the following courses taught by members of the history faculty: 1511-1512 Problems in Human History, 1513 Western Civilization to 1793, 1514 Western Civilization Since 1792, and 1515-1516 Civilizations of Asia. Nor may any of these courses be included in the 24 semester hours of history required for the general major in history.

**Teacher Certification**

Students majoring in history who wish to qualify for a teaching certificate must choose an area of concentration in history and meet these requirements:

**American History Concentration**

Courses in U.S. History (including 1511: Colloquium for History Majors) 30 a.h.

Courses in related areas 24 a.h.

Students must select 15 semester hours of course work in each of two related areas and 6 semester hours in courses on the concentrated area. Students must also meet the requirements for a general education in economics, geography, world history (more than three courses), and American history.

Students also must meet a special requirement in early European history by taking either 1513: U.S. History I, or 1514: U.S. History II (3 semester hours). This course also may be counted toward the related-areas requirement in world history if that is one of the related areas.

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 requirements for 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 (excluding 1511: Colloquium for History Majors and either 1513: U.S. History I, or 1514: U.S. History II) 30 a.h.

Courses in related areas 24 a.h.

Students must select 15 semester hours of course work in each of two related areas chosen from the following: Pre: economics, geography, American history, political science, sociology.

Courses in economics, geography, political science, or sociology that have been taken to satisfy the General Education Requirement in social sciences may be applied to the required hours in related areas, but no more than one such course may be applied to any one related area.
Students seeking the teaching major in history also must complete the professional courses in the College of Education that are required for teacher certification. They should consult an advisor in social studies education (see the "College of Education" section of the Catalog).

Honors

The honors major is for students of superior ability who want a flexible program that enables them to pursue special interests and enjoy the experience of individual research. To undertake the honors major in history, the student must be admitted to the College of Liberal Arts Honors Program by the director of that program, and to the honors program in history by the department. Application should be made by the beginning of the junior year, but 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 U.S. history, a minimum of 18-19 semester hours in related courses (see general major in history), at least 3 semester hours in the department's honors courses, which may include up to 6 semester hours of honors essay credit.
- Successful defense of an HONORS essay. Honors credits may be obtained in honors seminar, honors tutorial, and supervised research, as approved in advance and under the direction of the honors seminar tutorial (following the criteria outlined in the general major). The honors essay should be a 30 to 40-page paper based on some research in primary sources, a summary of three faculty members with whom the student had the essay, usually in the last week of the student's final semester.

Minor

A minor may be established by any student who completes at least 15 semester hours in history, including at least 3 credits in advanced courses taken at The University of Iowa. For the minor, all courses above 167.1 may be regarded as advanced.

Graduate Programs

The graduate programs in history prepare students for occupations such as high school or college teaching, publishing, commercial research, and government or other public service. With additional specialized training, students of history become qualified for careers in archival work, library work, or historical writing and preparation and display. Some students enter this program leading to degrees in both law and history (see the "College of Law" section of the Catalog). Qualified graduate students are invited to apply for fellowships and assistantships.

Inquiries should be directed to the departmental office.

Master of Arts

There are two M.A. programs in the history department. There is one for students who wish to work toward the Ph.D. degree. It requires a minimum of 30 semester hours of credit, including the completion of a research essay. The minimum number of hours is 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 one of the student's essay topics, 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 should begin as a term paper for the seminar in the major division and is completed the following semester under the guidance of the supervisor, when the student is enrolled in 162.025 Individual Study. Graduate. The finished product should resemble the character of articles in learned journals, just as in the Ph.D. dissertation does 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 30 semester hours overall: 14 in a major division, 15 in one major division, including a minimum of just one readings or seminar course. The two plans differ mainly in the student's concentration in fields in the Ph.D.-track emphasis on the development of research capabilities culminating in the essay; the alternate plan stresses breadth of learning. Students in the alternate plan must take at least 6 semester hours in each of the other two divisions, or 6 semester hours in one major division in history and 6 semester hours in the based department. Included in these 12 semester hours must be at least 3 credits in seminar course or history.

After completing these requirements, or during the semester in which they are to be completed, the M.A. candidate must take an oral and written comprehensive examination is the major division.

Doctor of Philosophy

Students who earn an M.A. with research essay are admitted to the Ph.D. program on the favorable recommendation of the examining committee. Students who earn an M.A. at another university must meet the general requirements for admission to the Graduate College (see the "Graduate College" section of the Catalog), and must submit a specific record of their work, such as a seminar paper or an M.A. thesis. They must take a research seminar during their first two semesters in residence at Iowa.

The candidate must earn at least 72 semester hours of credit, including credit for work done toward the master's degree. The 12 semester hours must include at least 32 semester hours (eight courses) in 200-level history courses, apart from thesis credit. At least 20 of these 32 hours must be completed before the student takes the comprehensive examination, and at least 20 of these 32 hours must be completed at The University of Iowa. Research seminars taken at the M.A. level may be counted toward the 32-hour requirement. The candidate also must earn 2 semester hours of credit in the philosophy of history, historiography, or methods of historical research.

The department has no common language requirement for the Ph.D., but the supervisor may require the candidate to demonstrate a reading knowledge of one or more foreign languages and proficiency in the use of either study tools. The candidate may not complete the comprehensive examination until these requirements have been met.

The comprehensive written and oral examination covers three distinct fields, two of which must be in a major division that is chosen from the following divisions:

- The Roman World
- Medieval Europe
- Europe, including Great Britain, 1500 to 1815
- Europe, including Great Britain, 1815 to present
- Russia and the Soviet Union
- United States history
- Latin American history
- History of Latin America
- History of Japan
- History of India
- Economic history
- Military history

The third field must be either in a division outside the candidate's major division or in a related department outside history. The committee may define and delineate the individual fields of comprehensive examination. It may also act, separately for each field, the character of the written portion of the comprehensive examination, which may take the form of a term paper, a critical bibliography, a critical paper, or any other form or combination of forms that the committee deems suitable. The oral portion of the comprehensive examination will focus on issues and problems arising from the examination papers.

Graduate Admission

Applicants for admission to the graduate program in history must meet the general requirements for admission to the Graduate College (see the "Graduate College" section of the Catalog), and must submit a specific record of their work, such as a seminar paper or an M.A. thesis. They must take a research seminar during their first two semesters in residence at Iowa.
Examination (CRN) Aptitude Test scores. In addition, students must submit a history department writing sample, such as a term paper, seminar paper, or draft thesis. These materials must be submitted by April 14 for admission to the summer session or fall semester, or by November 10 for spring semester. The application for graduate awards forms is separate, with a February 10 deadline.

New students applying for aid must submit the application for admission when they apply for aid, or earlier. Those wishing to be considered for the University-wide Iowa Fellowships Program should have their applications completed by January 10.

Guide to Graduate Study

Further information on graduate study is contained in the department's Guide to Graduate Study, which can be obtained upon request from the history department. The guide is revised every spring to include the latest faculty listing, courses as well as detailed regulations on degree 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 has a unique collection of rare books and periodicals from the first American printing press of 1639-1640 and the first American newspaper, the New England Courant of 1721-1722. The University Libraries also house a large collection of maps, manuscripts, and rare books. The University Libraries are open to the public, and visitors are encouraged to use them for their research.

Courses

Courses numbered 161 through 164 are primarily taken by freshmen to satisfy the General Education Requirements in historical perspectives. They cannot be taken twice by the same student. Courses numbered 165-169 are open only to freshmen. Other courses numbered below 200 are open to freshmen. All courses numbered 200 or above are open to all students. Courses numbered 200 or above usually are offered as occasional courses.

160B Cooperative Education Internship 2 s.h.
161 Western Civilization in 1787 3 s.h.
162 Western Civilization since 1787 3 s.h.
165 Civilization of Asia since 3000 b.c. 3 s.h.
166 Civilization of Asia since 3000 b.c. 3 s.h.
167 Problems in Modern History: Foundations of State from Cosmopolitanism to Imperialism 3 s.h.
167 Problems in Modern History: The State in the Twentieth Century 3 s.h.
168 Problems in Modern History: European, Continental, and International Relations 3 s.h.
169 Problems in Modern History: East-West Relations 3 s.h.
170 Problems in Modern History: Twentieth-Century Crisis 3 s.h.
171 Problems in Modern History: Ideologies of Global Dominance 3 s.h.
172 Problems in Modern History: The New International Relations 3 s.h.
173 Asia-Pacific Studies 3 s.h.
174 East Asia in International Relations 3 s.h.
175 East Asia in International Relations 3 s.h.
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248 East Asia in International Relations 3 s.h.
164/62 American History (1677-Pres) 3 a.h.
164/63 World History (1677-Pres) 3 a.h.
164/64 American History: Colonial Era (to 1789) 3 a.h.
164/65 American History: Early Republic (1789-1865) 3 a.h.
164/66 American History: Civil War and Reconstruction (1865-1877) 3 a.h.
164/67 American History: Post-Civil War (1877-Pres) 3 a.h.
164/68 World History (1677-Pres) 3 a.h.
164/69 World History: Early Republic (1789-1865) 3 a.h.
164/70 World History: Post-Civil War (1877-Pres) 3 a.h.
164/71 European History 3 a.h.
164/72 European History: Early Modern (1450-1789) 3 a.h.
164/73 European History: Modern (1789-Pres) 3 a.h.
164/74 European History: Early Republic (1789-1865) 3 a.h.
164/75 European History: Post-Civil War (1877-Pres) 3 a.h.
164/76 Asian History 3 a.h.
164/77 Asian History: Early Modern (1450-1789) 3 a.h.
164/78 Asian History: Modern (1789-Pres) 3 a.h.
164/79 Middle Eastern History 3 a.h.
164/80 Middle Eastern History: Early Modern (1450-1789) 3 a.h.
164/81 Middle Eastern History: Modern (1789-Pres) 3 a.h.
164/82 Latin American History 3 a.h.
164/83 Latin American History: Early Modern (1450-1789) 3 a.h.
164/84 Latin American History: Modern (1789-Pres) 3 a.h.

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HOME ECONOMICS
Charges: $30.00.
Professors: Margaret N. Keen, Janet Schindler.
Principal Instructor: Margaret O. Dohr, 1110
1500 Whirlpool

Undergraduate courses offered: Richard V. Lazz, T. Cuthrell, Carol C. Fettke, Carolyn W.
Landis, Lila S. Whitlow.

Associate professors emeriti: Elizabeth Atkins, Lee E. Smith.

Undergraduate degrees offered: B.A., B.S. in Home Economics.

Graduate degree offered: M.A., M.S. in Home Economics.

The mission of the Department of Home Economics is to enhance the quality of life through a program designed to prepare working professionals and individuals within their environment.

Thorough study, understanding, and use of the various aspects of apparel, fiber art, design, and family science; home economics contributes to the physical, psychological, social, economic, and aesthetic development of people.

The department prepares professional home economists to work with individuals, families, businesses, agencies, and organizations that provide goods, services, and programs to enhance the quality of life. Departmental courses also contribute to the liberal education of nonmajors.

Through research, the department creates new knowledge for and about individuals and families and related businesses and institutions, such as day care centers and day health, that serve individuals and families.

Through community service and other activities, we prepare students to develop independence and skills that individuals and families need to become functioning members of society.

Home economics offers a wide range of careers, including careers in business and industry, and in private, community, and government agencies. Some home economics career areas are teaching, merchandising, fiber art, design, and family relations, and family education.

The University of Ohio's home economics unit is accredited by the Council for the Professional Development of the American Home Economics Association.

Undergraduate Programs

The undergraduate program prepares students for immediate employment as professional home economists and for advanced study.

The home economics core provides a broad body of knowledge and a basic understanding of relationships among the various subject areas within home economics. In addition to a major or a minor in home economics, the department supports joint majors or minors in fields such as: journalism, art, social work, and education. In gaining the general education requirements for the B.A. or B.S. degree of the College of Liberal Arts, students majoring in home economics must select courses in other departments that also are prerequisites for home economics courses.

Bachelor of Arts

All students enrolling in home economics complete the following core:

17.0 Human Development and the Family
17.41 Nutrition
17.50 Design and the Environment
17.80 Textiles for Consumers
17.11 Management of Family Resources
17.190 Seminar: Home Economics

Selection of additional courses in home economics is based on interests and professional goals.

Apparel, Fiber Art, and Design

Option 1: Apparel and Textiles In this option, students develop competence in evaluating the quality of apparel and textile products. Knowing the appeal needs of specific groups, such as the apparel mood appeal or the textural appeal of fabrics from different cultures, applying general business principles, and using the concepts of a liberal arts education. Students who want to go into specific careers such as merchandising or textiles should first select advising options for a list of recommended courses. In addition to the home economics core previously listed, the following courses are required:

17.70 Introductory Clothing
17.72 Apparel, Fashion, and Selection
17.173 Fashion Merchandising
17.180 Textile Technology and Analysis

At least three courses from the following list of restricted electives:

17.42 Weaving
17.172 Tailoring
17.171 Fitting Problems and Flat Pattern Design
17.181 Textile Finishing, Dyeing, and Dyeing
17.183 Textile and Apparel Economics
17.180 Costume History I
17.180 Costume History II
17.190 Directed Studies
17.282 Experimental Studies

At least two courses from the following list of restricted electives:

41.02 Organic Chemistry I

51.11 Introduction to Financial Accounting
51.12 Introductory Financial Management
51.13 Managing the New or Small Business
61.100 Organizational Behavior
61.47 Introduction to Law
61.58 Personnel Management
61.125 Consumer Behavior
61.150 International Marketing
221.17 Quantitative Methods I
221.25 Calculus I
221.4 Basic Probability
31.19 Psychology in Business and Industry
31.120 Principles of Social Psychology
11.133 Introduction to the Study of Culture and Society
32.43 Communications
32.44 Communications
32.45 Communications
1.341 Understanding the Visual Arts
3.1 General Chemistry I plus 45 s.
4.141 Principles of Chemistry
4.1 Laboratory
5.1 Principles of Microeconomics
5.2 Principles of Macroeconomics
6.100 Administrative Management
8.100 Introduction to Marketing
225.25 Elementary Statistics and Inference
255.25 Elementary Statistics and Inference
255.2 Statistical Society
315.2 Elementary Psychology
31.4 Introduction to Sociology: Principles

A course in computer science

Students and their advisors select additional courses to achieve a total of at least 32 semester hours of restricted electives, with the courses selected according to students' goals.

Option 2: Fiber Art and Design Students interested in developing an understanding and appreciation of concepts unique to design by drawing from the humanities, the arts, and the sciences should select this option. Professional goals focusing on merchandising, fabric design, homes and the environment, and interior design and presentation require the following courses in addition to the home economics core previously listed:

17.155 Survey of Historic Interiors
17.156 Survey of Modern Interiors
17.150 Fashion and Dyeing
17.184 Dyes and Fibers
17.196 Housing: Social and Psychological Aspects
Liberal Arts • Home Economics

17:185 Costume History I 3 s.h.
17:186 Costume History II 3 s.h.

Two of the following:

H1: Understanding the Visual Arts 3 s.h.
H15 Western Art and Culture Before 1800 5 s.h.
H16 Western Art and Culture After 1800 5 s.h.
H18 Introduction to Art 3 s.h.

I&K Basic Design 2 s.h.

or

An approved three-dimensional studio art course 2-3 s.h.

I&J Elements of Art 2-3 s.h.

or

An approved two-dimensional studio art course 2-3 s.h.

GE: Principles of Microeconomics 3 s.h.
GE: Principles of Macroeconomics 3 s.h.

Electives from business economics, business administration, urban and regional planning, art history, music art, the social sciences, and theatre (see recommended).

Family Science

Option 3: Family Studies

Students interested in specialized training in individual and family life span perspective, child development, and parent education, may elect to concentrate in a family context, marital relationships, aging studies, and financial management should select option 3. It prepares students for careers with agencies and services connected with the concepts and functioning for family life education, and for extension service. The following courses are required in addition to the home economics core listed previously:

17:108 Basic Aspects of Aging 3 s.h.
17:112 Personal Financial Management 3 s.h.
17:113 Marriage and Family Interaction 3 s.h.
17:114 Parent-Child Relationships 3 s.h.
17:122 Methods and Materials in Family Life Education 3 s.h.
17:600 Cooperative Extension Internship 0 s.h.
17:195 Home Economics Internship 1.5 s.h.

Two of the following:

17:106 Growth and Development or the Young Child 3 s.h.
17:106 Adolescence and the Family 3 s.h.
17:106 Conflict and Violence in Families 3 s.h.

Also required are:

31:1 Elementary Psychology 3 s.h.
34:1 Introduction to Sociology: Principles 3 s.h.
34:159 The Family in Various Societies 3 s.h.
34:161 The American Family 3 s.h.

GE: Principles of Microeconomics 3 s.h.
GE: Principles of Macroeconomics 3 s.h.
31:1 Elementary Psychology 3 s.h.
34:1 Introduction to Sociology: Principles 3 s.h.
TW: Introduction to Microcomputing for Teachers 0-1 s.h.

Demonstrated computer proficiency is required of second endorsement.

Bachelor of Science

The B.S. degree is recommended for students who desire greater depth or breadth in the natural sciences.

Family Science

Option 5: Home Economics Education

Students interested in new careers described for the bachelor of Arts degree in family sciences—option 4. The B.S. degree may enable students to obtain greater depth and breadth in the natural and social sciences by completing the following course in addition to the courses required for the B.A.—option 4.

4:7 General Chemistry 1:4 6 s.h.

A course in statistics or computer science 3 s.h.

Four courses from the social sciences numbered 100 or above, or four courses from the natural sciences 12-16 s.h.

Option 6: Nutrition

The B.S. option in nutrition requires depth and breadth in the natural sciences. This option is designed to prepare a student for an entry-level position as a research assistant in college, university, industrial,
or governmental laboratories or for graduate study in nutrition. In addition to the home economics core previously described, the following courses are required:

17.130 Food Study and Meal Management Laboratory 3 s.h.
17.144 Intermediate Nutrition 3 s.h.
17.145 Advanced Nutrition 3 s.h.
4.10-14.1 Principles of Chemistry I and II 8 s.h.
4.121 Organic Chemistry I 3 s.h.
4.141 Organic Chemistry Laboratory 3 s.h.
6.61 Principles of Microeconomics 3-4 s.h.
6.62 Principles of Macroeconomics 3-4 s.h.
22M.19 Elementary Functions (or high school equivalent) 3 s.h.
22M.55 Calculus I 4 s.h.
29.114-15 College Physics 6 s.h.
27.2 Principles of Animal Biology 5 s.h.
61.157 General Microbiology 5 s.h.
72.130 Human Physiology 4 s.h.
99.120 The Chemistry of Biological Materials 3 s.h.
99.130 Metabolism 3 s.i.

One of the following:
21.072 Enzyme Purification and Characterization 4 s.h.
or
37.128 Fundamental Genetics 3-4 s.h.
37.129 Fundamental Genetics Laboratory 1-2 s.h.
31.150 Introductory Endocrinology 2 s.h.
37.152 Endocrinology Laboratory 2 s.h.
99.140 Experimental Biochemistry 4 s.h.

Cooperative Education/ Internship Program
The department participates in the University’s Cooperative Education Program, which enables students to obtain work experience related to their professional goals and academic program. Students who meet the university's requirements may apply to the department's cooperative education committee to participate in this program. Students register for 17900 Cooperative Education Internship at the time of their work experience and for 17.105 Home Economics Internship during the subsequent semester.

Honors
To be eligible for honors, students must have junior standing, 30 semester hours in residence at the university, an overall cumulative grade-point average of 3.20 or above, a grade-point average of 3.20 in all home economics courses, and at least 12 semester hours completed in home economics. Honors work consists of 17.191 Honors Seminar: Home Economics and 17.192 Honors Problem: Home Economics, in which students do creative work or a research project. A written report or honors thesis and an oral examination are required.

In addition, students may connect with an instructor to receive honors credit for any home economics course. The course must be at the level of 17 or above, the contract, which must be approved by the College of Liberal Arts Honors Program, specifies the work students must complete to receive honors credit for the course.

Minor
A minor in home economics is available for students majoring in other departments. The home economics minor requires 15 semester hours in home economics courses taken in residence at the university of Iowa, including at least 12 semester hours in courses numbered 100 or above. Home economics courses taken at other institutions by correspondence, or on a pass/fail basis will not apply toward requirements for the minor in home economics. Students pursuing a minor in home economics are encouraged to consult a home economics faculty member when selecting courses.

Graduate Programs
The demand for well-qualified professional home economists exceeds the number of graduates with advanced degrees; therefore, the master’s degree graduate may qualify for positions in colleges, secondary schools, business, industry, and government.

The graduate programs enable students to obtain depth in vocational specialization in one of two subject areas: apparel, fiber art, and design; or family life, nutrition, or child development.

The department offers both the thesis and nonthesis tracks. The thesis track is recommended for students preparing for teaching and research in colleges and universities, positions in industry, and continues study beyond the master's degree. The thesis track permits more intensive experience in research procedures as the opportunity for extensive creative work. The thesis may be undertaken in the department or in cooperation with related departments or colleges.

Students applying for admission must have an overall grade-point average of at least 3.00 with 3.00 for courses related to the area of major interest in home economics. A minimum of 2.50 for all course work with a 2.80 for courses related to the area of major interest in home economics is required for conditional admission.

Applicants must have completed prerequisite courses specified for the major area of emphasis in home economics or must make up these courses early in the period of graduate study. Credit earned for these make-up courses will not apply toward the graduate degree. Students with major interest in fiber art must present a satisfactory portfolio for regular admission; those without the portfolio may be admitted conditionally.

Decisions regarding admission to fall or spring semesters or summer sessions will be made between February 1 and March 15.

Students completing the master’s degree within the 30 semester hours of graduate study may be admitted.
A variety of career opportunities are available for the graduate student pursuing this area of study. These include teaching, counseling, administration, social work, public relations, advertising, and media relations.

Required courses in addition to those stated previously are:

17.230 Economics of Urban Development 3 s.h.
17.231 Social and Cultural Economics 3 s.h.
17.232 Theory and Research in Family Economics 3 s.h.
17.233 Seminar: Consumer Behavior 3 s.h.
17.234 Seminar: Health Economics 3 s.h.
17.235 Seminar: International Economics 3 s.h.
17.236 Seminar: Labor Economics 3 s.h.
17.237 Seminar: Money and Banking 3 s.h.
17.238 Seminar: Public Economics 3 s.h.
17.239 Seminar: Taxation 3 s.h.
17.240 Seminar: Urban Economics 3 s.h.
17.241 Seminar: Environmental Economics 3 s.h.
17.242 Seminar: Economic Development 3 s.h.
17.243 Seminar: Economic Growth 3 s.h.
17.244 Seminar: Economic History 3 s.h.
17.245 Seminar: Economic Policy 3 s.h.
17.246 Seminar: Economic Theory 3 s.h.
17.247 Seminar: Economic Institutions 3 s.h.
17.248 Seminar: Economic Forecasting 3 s.h.
17.249 Seminar: Economic Statistics 3 s.h.
17.250 Seminar: Economic History 3 s.h.
17.251 Seminar: Economic Theory 3 s.h.
17.252 Seminar: Economic Institutions 3 s.h.
17.253 Seminar: Economic Forecasting 3 s.h.
17.254 Seminar: Economic Statistics 3 s.h.
17.255 Seminar: Economic History 3 s.h.
17.256 Seminar: Economic Theory 3 s.h.
17.257 Seminar: Economic Institutions 3 s.h.
17.258 Seminar: Economic Forecasting 3 s.h.
17.259 Seminar: Economic Statistics 3 s.h.
17.260 Seminar: Economic History 3 s.h.
17.261 Seminar: Economic Theory 3 s.h.
17.262 Seminar: Economic Institutions 3 s.h.
17.263 Seminar: Economic Forecasting 3 s.h.
17.264 Seminar: Economic Statistics 3 s.h.
17.265 Seminar: Economic History 3 s.h.
17.266 Seminar: Economic Theory 3 s.h.
17.267 Seminar: Economic Institutions 3 s.h.
17.268 Seminar: Economic Forecasting 3 s.h.
17.269 Seminar: Economic Statistics 3 s.h.
17.270 Seminar: Economic History 3 s.h.
17.271 Seminar: Economic Theory 3 s.h.
17.272 Seminar: Economic Institutions 3 s.h.
17.273 Seminar: Economic Forecasting 3 s.h.
17.274 Seminar: Economic Statistics 3 s.h.
17.275 Seminar: Economic History 3 s.h.
HOSPITAL AND HEALTH ADMINISTRATION

See "College of Medicine."

IOWA LAKESIDE LABORATORY

Director: Robert J. Kesterson

The Iowa Lakeside Laboratory is a biological field station occupying approximately 180 acres of grassland and glacial forest along the west shore of Lake Okoboji in northwest Iowa. The laboratory was established in 1909 under the leadership of Thomas H. Macbride, whose entrance as a University of Iowa botanist and zoologist from 1905 to 1914 was recognized by his appointment as University president from 1914 to 1916. The lab site was the Penna area set aside for the conservation and study of the rich flora and fauna of the northern Iowa lake and prairie regions.

Since 1947, The University of Iowa has cooperated with the Iowa State University and the University of Northern Iowa in the lab program. Representatives of the three schools meet as an advisory board, which determines the scientific and educational policies of the lab.

The Iowa Lakeside Laboratory offers course work in two five-week terms during the summer session. Enrollment is limited to 30 students per term, for 5 semester hours of credit.

The laboratory gives advanced undergraduate and graduate students the opportunity to study plant and animal life in its natural settings. Thorough supplies, and does not require regular course work given formally by accredited colleges.

Students working for advanced degrees will find excellent opportunities to develop thesis projects at the lab.

Teaching and research facilities include four laboratories, a greenhouse, and a lecture hall. Living accommodations include cottages, dormitories, and a large mess hall.

Financial Aid

The University of Iowa has established several thousand T. Macbride Scholarships in Natural Science for undergraduate and graduate students attending the laboratory. The scholarships cover Iowa Lakeside Laboratory tuition costs. Scholarship applications close April 1.

Registration

Current or former students of The University of Iowa, The University of Northern Iowa, and Iowa State University should and their registrars for information. Students from other institutions must apply for admission to one of the cooperating universities; each has a provisional admission policy for students who wish to register for summer work only. Early registrations are advisable. All applications should be submitted before May 1 for the following summer session.

Courses

Permission of the instructor is required for all courses. Enrollment is limited to six students in each course. Classes meet six days a week, every day. Course vary in year to year (see annual Iowa Lakeside Laboratory bulletin) the following are representative.

1031 Field Natural History

1103 Palaeontological Hot spots in the course examined through lecture and field trips to fossil sites, mounts, fossil, and paleontological topics include reviewing the methods used in paleontology, interpreting the evidence, understanding species occurrence and understanding the relationships of past and present ecosystems in general and the evolution of species and communities in the context of the earth's history. The course is open to biology majors.

1190 Aquatic Ecology

1200 Organic Chemistry

1201 Aquatic Ecology Projects

1220 Animal Ecology

1232 Animal Ecology

1234 Organic Chemistry

1235 Organic Chemistry

1236 Organic Chemistry

1237 Organic Chemistry
Undergraduate Programs

The Iowa undergraduate programs are designed to prepare students for professional positions in the broad field of mass communication. These fields include newspaper, magazine, and broadcast reporting, writing, and editing; public relations; corporate communication; publishing; media graphics and design; audiovisual production; media research; and photography. Students may minor in B.A., B.S. degrees in one of these areas.

The objective of the undergraduate programs is to prepare students to be active participants in the development of their chosen fields through the use of critical and analytical as well as journalistic skills. The undergraduate professional programs are built on a foundation of liberal arts. Students also are encouraged to maintain a balance between theory and practice in their journalism course work to help them develop an understanding of mass communication as a process and mass media as institutions, as well as proficiency as writers, editors, designers, or photographers.

Selective Admissions

To preserve quality of its programs, the School of Journalism and Mass Communication has a selective admissions program. Thus, students with a declared interest in journalism are classified as journalism majors until they are admitted to major status. Before applying for admission to the program, students must take two prerequisite courses: 19-990 School of Journalism and Mass Communication and 19-951 Cultural and Historical Foundations of Communication, and complete their required three course(s). Students may apply for admission to major status during the semester in which they will complete these requirements and will be competed at least 35 semester hours. Applications and information on deadlines are available in the School of Journalism and Mass Communication.

The primary criteria for admission to major status is overall academic performance. Other factors considered are performance in the required prerequisite courses and other journalism courses the student may have taken, a statement of interest submitted by the student, and writing ability. The number of students accepted each semester depends on the number of students already in the program and available resources. Since selective admissions begins in 1985, all qualified applicants with an overall and journalism grade-point averages above 3.00 have been admitted. The applications of other students have been reviewed to light of the goal of admitting the most qualified students to the programs.

Curriculum

Majors must complete a minimum of 30 and a maximum of 34 semester hours of journalism courses with a grade of C or better in each course, and 26 semester hours in a second area of concentration. A student's journalism program is made up of the following four elements:

Foundation courses required of all majors:

19-950 Social Scientific Foundations of Communication

19-911 Cultural and Historical Foundations of Communication

19-950 Introduction to Journalism Writing

19-102 Legal and Ethical Issues in Communication

A sequence of specialized journalism courses (newswriting, mass communication laboratory, mass communication inquiry)

15-12 Journalism electives

Second area of concentration (equivalent of a second major in a field of study outside of journalism)

Students generally take the pre-journalism courses during their freshman or sophomore years. A prerequisite for all advanced writing classes is 19-800 Introduction to Journalism Writing. A general course may be taken by junior or senior students.

News-Editorial Section

Writing is the central focus of the News-Editorial Section. This sequence consists of on print and broadcast news writing, reporting, writing and editing in other contexts, and on public relations. Students learn to gather information and convert it into copy for newspapers, broadcasters, and other media. Students also learn to edit copy and write headlines, edit pages, and write graphics, and lay out pages for publication in newspapers, magazines, newsletters, or brochures.

Courses in the sequence take the student from basic journalistic writing through reporting and writing for print or broadcast media to a choice of advanced courses in the News-Editorial Lab which may focus on print, public relations, investigative, or court reporting magazine writing, editing, and on design. Students also are introduced to analytical-critical concepts regarding the principles and practices of the journalistic profession and media through discussions and critiques of the media and student work. Career possibilities for news-editorial
students include writing for newspapers, magazines, radio or television news programs, public relations publications, and other media. The required journalism courses are:

- Foundation courses (19-50, 19-60, 19-100, 19-102) 12 s.h.
- An intermediate writing course:
  - 19-120 News Reporting and Writing (gent) 3 s.h.
  - 19-123 Broadcast Journalism (radio) 3 s.h.
  - 19-127 News-Editorial Laboratory (two sections, e.g., Editing or Magazine Writing) 6 s.h.
- Journalism electives 9 s.h.
- Total 30 s.h.

Mass Communication Laboratory Sequence

Students combine writing with at least one area of visual communication in the Mass Communication Laboratory Sequence. This sequence offers students an opportunity to develop competence and proficiency in professional communications who can identify and analyze problems that need communication strategies and media products for solutions. The sequence is designed so that students can combine writing, producing, and conceptual courses in light of their intellectual, media, and career interests. Seniors in the 19-17 Mass Communication Laboratory develop professional projects that may include the production of slide decks, stories, brochures, newsletters, audio or video documentaries, or communication campaign plans.

Students in the sequence can develop entry-level skills for a variety of career areas, including corporate communication, independent media production, public relations, advertising, public information, and broadcast or print journalism. The required journalism courses are:

- Foundation courses (19-35, 19-90, 19-100, 19-102) 12 s.h.
- One writing course:
  - 19-120 News Reporting and Writing (print) 3 s.h.
  - 19-151 Broadcast Journalism (radio) 3 s.h.
- One visual production course:
  - 19-152 Broadcast Journalism Workshop (television) 3 s.h.
  - 19-153 Photocommunication 3 s.h.
  - 19-154 Introduction to Typography 3 s.h.
  - 19-155 Graphic Design and Production 3 s.h.
- 19-171 Mass Communication Laboratory 3 s.h.
- Journalism electives 9 s.h.
- Total 30 s.h.

Mass Communication Inquiry Sequence

This sequence emphasizes the acquisition of knowledge about mass communication as a process and mass media as institutions. The Mass Communication Inquiry Sequence is not intended to prepare students to be media professionals such as writers, editors, or photogtaphers. Instead, students concentrate on studying communication as a way of comprehending society and human interaction. Courses focus on historical, philosophical, and social scientific modes of understanding. Seniors in 19-172 Seminar in Communication Research complete independent or group research projects using skills and interests developed in their previous course work, including 19-129 Communication Research Methods and advanced conceptual courses.

Career possibilities for students in this sequence include writer, researcher, and public opinion polling or work in other related fields. Many students in this sequence continue with graduate studies in journalism, mass communication, or other disciplines, including law. The required journalism courses are:

- Foundation courses (19-50, 19-60, 19-100, 19-102) 12 s.h.
- 19-151 Communication Research Methods 3 s.h.
- Two or more advanced conceptual courses, selected from:
  - 19-150 Visual Communication 6 s.h.
  - 19-152 History of Mass Communication in the United States 6 s.h.
  - 19-153 Popular Culture and Mass Communication 6 s.h.
  - 19-154 Economic and Technological Issues in Media 6 s.h.
  - 19-155 Mass Media and Society 6 s.h.
  - 19-156 Comparative Communication Systems 6 s.h.
  - 19-157 Third World Development Support 6 s.h.
  - 19-158 News-Editorial Production 6 s.h.
  - 19-159 Political Films and the Mass Media 6 s.h.
- 19-151 Law and the American Media 6 s.h.
- 19-172 Seminar in Mass Communication Research 3 s.h.
- Journalism electives 6 s.h.
- Total 30 s.h.

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 in an area outside of journalism and mass communication. The purpose of the second area of concentration requirement is to involve students in the in-depth study of another field. Study in the second area may permit students to acquire a substantial body of knowledge, learn how another discipline views the world, or develop a comparative set of professional 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 departments.

Students who do not complete a second major must complete at least 15 of the 24 required semester hours in courses numbered above 19-129 in the second area should be arranged in consultation with an adviser, and students must have their adviser's written approval of the second area before graduation.

Bachelor's Degrees

The School of Journalism and Mass Communication offers Bachelor of Arts and Bachelor of Science degrees in journalism. The College of Liberal Arts foreign language requirement and the School of Journalism second area of concentration requirement are different for the two degrees, but the liberal arts General Education Requirements (other than for foreign language) and the journalism major and elective requirements are the same for both.

Bachelor of Arts

Students seeking a B.A. in journalism must complete four semesters of one foreign language and 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 above 19-129. This work must include 15 or more semester hours of work in courses numbered 100 or above. This concentration should be designated by the student in consultation with an adviser. The student must have written approval of the second area of concentration by an adviser before graduation.

Bachelor of Science

The requirements for a B.S. degree in journalism are scheduled to change beginning with students who are admitted to major status in 1991.

Students admitted to major status before the fall of 1989 meet the requirements for the B.S. by completing two semesters of one foreign language and the journalism requirements (30 semester hours). They also must fulfill the school's second area of concentration requirement in one of two ways:

- Obtain a full B.S. major in a natural or social science; or
- Complete the following:
  - A 24-semester-hour concentration of related courses in one or more worth or natural science departments including 15 or more semester hours of work in courses numbered 100 or above. This concentration should be designated by the student in consultation with an adviser. The student must have written approval
of the second area of concentration by an advisor before graduation); and Six semester hours of social or cultural science research methods courses appropriate to the second area of concentration (e.g., statistics, survey or experimental research methods, computer programming, advanced math or advanced science laboratory courses). Students admitted to journalism majors states in the fall of 1968 or later meet the requirements for the B.S. by completing two semesters of one foreign language and the journalism major requirement (10 semester hours). They also 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 sciences. Complete the following: A 24-semester-hour concentration of related courses in social sciences (economics, geography, political science, psychology, or sociology), natural, or mathematical sciences. (At least 15 hours of the second-area work must be in courses numbered 100 or above. The sequence must have written approval of the second area of concentration by a journalism advisor); and All the social, math, research methods, statistics, computer science, and/or two core science requirements necessary for the B.S. degree in the department in which the majority of second-area work is done.

Honors
Journalism majors with outstanding academic records may participate in the College of Liberal Arts Honors Program and earn the honors degree in journalism. Eligible students should meet with the honors coordinator to discuss their plans for individual programs. The first 30 credits of honors course work may be earned by students completing an honors degree in journalism, on the recommendation of the honors advisor(s). To earn an honors degree in Journalism, a student must: Carry out additional work under the guidance of an instructor on one advanced conceptual course (numbers 1133 through 3116). Earn at least 19.59 honors course credit hours for 3.875 honors. Write an honors thesis under the supervision of a journalism faculty member; and Make a formal presentation of the honors thesis to a committee consisting of a faculty advisor, the coordinator of the honors program, and at least one faculty member of the student’s choosing.

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, 12 seminar hours of which must be numbered 100 or above. The following courses are strongly recommended: 19.5 Social Scientific Foundations of Communication 3 s.h. 21.5 Cultural and Historical Theories of Communication 3 s.h. The minor is not intended to be sufficient preparation for a career in journalism or mass communication. The minor should be regarded only as an introduction to the field.

Transfer Students
All transfer students will be classified initially as premajors. They may apply for major status in the semester in which they will have completed at least 15 semester hours (including those from the University of Illinois and other institutions) and have completed their general education requirement, 19.5 Social Scientific Foundations of Communication, and 21.5 Cultural and Historical Theories of Communication. Neither of these prerequisites will be waived on the basis of work taken at other institutions; that is, a transfer student will be a premajor for up to one semester.

The school’s policy is to accept journalism transfer credits from another institution for up to two years or up to 20 percent (15 to 30 semester hours) of the student’s total number of credits toward a major in journalism at Illinois. Journalist course work taken elsewhere might be applicable toward fulfilling elective and minor area of concentration requirements. Any transfer credit intended to meet the School of Journalism and Mass Communication requirements must be approved by the head of undergraduate studies.

Graduate Programs
Master of Arts
The School of Journalism and Mass Communication offers a Master of Arts program with three separate emphases: professional journalism, communication and mass communication, and development and support communication. Applicants should indicate the emphasis to which they are seeking admission. Each emphasis requires 30 semester hours of approved course work, the completion of a master’s project or thesis, and the successful completion of the final examination. The specific requirements for each emphasis are listed below.

Professional Journalism Emphasis
This emphasis is intended for students seeking to improve their professional and analytical skills and broaden their understanding of the role and function of mass communication in contemporary society, but who do not plan to engage in Ph.D. work. There are programs for students with no academic or professional experience in journalism and mass communication and for those who do not.

Program requirements for students with no academic or professional experience in journalism and mass communication: 19.52 Master’s Seminar 3 s.h. 19.53 News Reporting and Writing 3 s.h. (does not count toward M.A. degree) 19.5532 News Editing 3 s.h. 19.55 News-Editorial Laboratory 3 s.h. 19.551 Mass Communication Laboratory 3 s.h. (option intended for students with special interest in public relations or organizational communication)

Electives (in journalism and other departments) 18 s.h. 19.659 Master’s Research (thesis) 3 s.h.

Final examination, last period of enrollment
Program requirements for students with professional experience in journalism or communication: 19.52 Master’s Seminar 3 s.h. Electives in the school (minimum) 9 s.h. Electives in other departments up to 15 s.h. 19.55 Master’s Research 3 s.h.

Final examination, last period of enrollment
Students must complete a major professional project (19.291) under supervision of a graduate faculty member during the last period of enrollment. Students select elective courses in the school and in other departments in consultation with their advisor(s).

Communication and Mass Communication Emphasis
The emphasis offers a specialization in the study of communication phenomena with special emphasis on theory and methodology. Qualified individuals may petition the graduate administration committee of the School of Journalism and Mass Communication for admission to the Ph.D. program after successful completion of their M.A. work.

Program requirements
19.520 Mastery Seminar (two semesters) 2 s.h. 19.531 Approaches to the Study of Communication: Issues and Concepts 3 s.h. (one of the following methods courses) 3 s.h.
19.55 Communication Research: Historical Approaches 3 s.h.
One of the following research methods courses: 3 s.h.
19240 Communication Research: Historical Approaches
19241 Communication Research: Behavioral Approaches
19242 Communication Research: Phenomenological Approaches
1.254 Communication Research: Legal Issues Approaches
19299 Master's Research (Clients) 3 s.h.
Political Science
30250 Political Economy and Public Policy in Developing Countries 4 s.h.
Electives 11-13 s.h.
Total 30 s.h.

Doctor of Philosophy
The Ph.D. program emphasizes interdisciplinary inquiry into mass communication phenomena within cultural and historical perspectives. Such perspectives imply that an understanding of these phenomena cannot arise solely out of narrowly focused analysis of present conditions. Rather, the approaches emphasize philosophical, evaluative, and critical inquiry into relationships between mass media and society across time and culture. The program's substantive nature is defined by the scholarly interests of its faculty, who turn most frequently to investigations of historical, legal, economic, social, and cross-cultural aspects of communications, both vertical and visual, and is organized in a series of courses and individualized studies.

The Ph.D. program is highly individualized. Drawing on the School of Journalism and Mass Communication and other academic units, each student develops a specific course of study that reflects his or her academic background, interests, 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.

Facilities
The School of Journalism and Mass Communication is housed in the three-story Communications Center. The school has special laboratories for photography, typographic arts, video, typing, and print production, including a Mac display terminal and modern typesetting equipment. Many students use the newspaper and other facilities of the award-winning University of Iowa student newspaper, The Daily Iowan, housed in the Communications Center. Special facilities within the Communications Center include the Leslie G. Moorer Seminar Room and the Merrill Speciale Presentation Room.

The school has its own resource center and provides accommodations for offices of the Iowa High School Press Association and The Quill and Scroll Society. A display gallery is available for student and faculty photography and other projects.

Iowa Center for Communication Study
The center encourages and facilitates student and faculty research in the field of communication. Among its publications is The Journal of Communication Inquiry, edited by graduate students.

Financial Aid
More than $3,000 in scholarships is available to undergraduate and graduate journalism majors each year. Information about and applications for journalism scholarships are available to graduate students with preference given to doctoral students. The school also has a program offering modest financial support for student research projects.

Professional Enrichment
Internships, Cooperative Education, Professional Experience
The school encourages students to participate in learning opportunities outside the classroom. Internships in journalism and public relations positions are made available to students through The University of Iowa Cooperative Education Program. These experiences are selected and monitored to contribute to the student's professional growth. The School of Journalism and Mass Communication does not issue academic credit for internships. In addition to internships, student-operated media, including The Daily Iowan, KRUI-FM radio, and The Hawkeye yearbook, provide opportunities for student involvement.

Job Placement
The school accepts notices of professional jobs open to journalism students and graduates. The University's Career Information Services and the Business and Liberal Arts Placement Office provide current guidance and placement services as well as workshops and programs on job-search skills.
Special Activities

The school engages in a variety of special activities for the enrichment of students, faculty, and the entire campus. Many speakers visit campus each year as part of John F. Murray Lectureships and the Leslie G. Moeller Lecture Series. Campus organizations for students include kappa Tau Alpha, National Association of Black Journalists (NABJ), Public Relations Student Society of America (PRSSA), Society of Professional Journalists, Sigma Delta Chi (SPJSIDC), and Women in Communication Incorporated (WCI).

Semester in London

Each spring semester, advanced undergraduates and M.A. professional students have an opportunity to study in England. The program involves about a dozen students who take courses, including some offered in conjunction with The City University of London. Courses of both a practical and theoretical nature are offered with courses in specialization reporting and the history of the British media available from The City University. In addition, internships may be arranged with London media.

Courses

All courses listed as 100-level or above require at least junior standing or major status and/or consent of instructor.

18000 Journalism and Mass Communication

Cooperative Education Internship 3 h. 8 a.m. Internships available by the Cooperative Education Office in Student Employment on campus or through national agencies. Prerequisite: 3 semester hours of journalism and mass communication courses, 2 semester hours of a discipline course, and consent of instructor. Consent of instructor.

18030 Introduction to Broadcasting and Film Production 3 h. 8 a.m. This course will be taught with video recording and film editing. Students will produce short films and television programs as well as receive instruction in creative writing, production, and editing. Prerequisite: Consent of instructor.

18031 Introduction to Communication Skills 1-4 h. 8 a.m. Writing ability and editing for a Community Audience 3 h. 8 a.m. Writing articles for local newspapers and articles for newspapers and magazines with emphasis on identification of audience and media market. Different through Columbia College.

18032 Scientific Foundations of Communication 3 h. 8 a.m. Scientific Foundations of Communication 3 h. 8 a.m. Prerequisites: consent of instructor. Consent of instructor.

18033 Cultural and Historical Foundations of Communication 3 h. 8 a.m. Cultural and Historical Foundations of Communication 3 h. 8 a.m. Prerequisites: consent of instructor.

18036 Audio-Visual Techniques 3 h. 8 a.m. Audio-Visual Techniques 3 h. 8 a.m. Prerequisites: 18031 and consent of instructor. Consent of instructor.

18060 Introduction to Journalism Writing 3 h. 8 a.m. Introduction to Journalism Writing 3 h. 8 a.m. Prerequisites: 18031 and consent of instructor. Consent of instructor.

18100 Introduction to Visual Communication 3 h. 8 a.m. Introduction to Visual Communication 3 h. 8 a.m. Prerequisites: 18031 and consent of instructor. Consent of instructor.

18101 Communication and Public Relations 3 h. 8 a.m. Communication and Public Relations 3 h. 8 a.m. Prerequisites: 18031 and consent of instructor. Consent of instructor.
LATIN

See "Classics."

LATIN AMERICAN STUDIES

Chair: Joseph L. Sperber

Professor: Thomas Charters (Anthropology), Rodney Frank (Spanish and Portuguese), Oscar Ruiz (Spanish and Portuguese), Charles Hare (History), Peter Sverna (Political Science).

American professor: Flora Stahl (Anthropology/Women's Studies), Michael Olubukola (Anthropology), Delia Fernandez-Barris (Spanish and Portuguese), Nora England (Anthropology), Thomas Lewis (Spanish and Portuguese), Andreas Miler-Bohme (Spanish and Portuguese), Douglas Meling (Anthropology), Christopher Ray (Art and Art History), Maria Latronico (Spanish and Portuguese), Mara Villalba (Spanish and Portuguese), Irene Waziri (Spanish and Portuguese).

Assistant professors: Maria Anglim (Economics), Nora Conley (Anthropology), Winter Dennis (Anthropology), Joseph L. Sperber (Geography).

Latin American studies is an interdisciplinary undergraduate program that focuses on the history, politics, social organization, economy, geography, art, and literature of Latin America. Students interested in the program may earn the Certificate in Latin American studies, or they may elect to 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 that study the area, students seeking the Certificate in Latin American Studies must earn at least 27 semester hours of credit in courses selected from "Courses Approved for LASP Certificate," below, including at least 6 semester hours in each of at least three of the following departments: anthropology, geography, history, political science, and Spanish and Portuguese.

Courses concerned in part with Latin America that are currently used as electives to satisfy the requirements for the certificate are indicated in the Latin American studies advisor.

Senior Seminar

Sessions consist in Latin American Studies Seminar 281-176, 281-179, 44-109, or 113-132, a 3-hour-semester interdisciplinary course built around problems that pertain specifically to Latin America. The seminar is often taught by two faculty members from the participating departments.

Overlapping Credits

The certificate program requires 27 semester hours of coursework. Students majoring in any of the program's 10 participating departments may be able to count a significant number of the courses required for their major toward the Certificate in Latin American Studies. Students majoring in other departments also may be able to count a portion of their major requirements toward the certificate.

Minor

To earn a minor in Latin American studies, students complete 25 semester hours in approved Latin American Studies Program (LASP) courses, 12 semester hours of which must be in courses numbered above 100 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

112:115 Ethnology of South America
3 s.h.

112:116 Ethnology of Mexico/Argentina
3 s.h.

112:118 Social Anthropology of the Caribbean
3 s.h.

113:131 Latin American Ecology and Society
3 s.h.

113:132 Latin American Studies Seminar
3 s.h.

113:133 Archaeology of Mesoamerica
3 s.h.

Art

111:105 Art of Pre-Colombian America
3 s.h.

Geography

44:167 Principles of Urbanization and Development in Latin America
3 s.h.

History

10:111 Colonial Latin America
3 s.h.

10:112 Introduction to Modern Latin America
3 s.h.

10:113 The Mexican Revolution
3 s.h.

Political Science

30:144 Latin American Government
3 s.h.

30:145 Latin America: States of Latin America
3 s.h.

30:147 Inter-American Relations
3 s.h.

Portuguese

30:106 Brazilian Literature I
3 s.h.

30:107 Brazilian Literature II
3 s.h.

30:114 Culture and Civilization of the Portuguese-Speaking World (taught in English)
3 s.h.

30:119 Latin American Studies Seminar
3 s.h.

Spanish

35:20 Contemporary Latin American Literature (taught in English)
3 s.h.

35:131 Contemporary Spanish American Fiction
3 s.h.

35:132 Spanish American Poetry
3 s.h.

35:133 Spanish American Drama
3 s.h.

35:134 Spanish American Short Stories
3 s.h.

35:170 Literature of the Discovery and Conquest of Spanish America
3 s.h.

35:172 Spanish American Literature of Fantasy
3 s.h.

35:176 Latin American Studies Seminar
3 s.h.

Courses

LEISURE STUDIES

See "Division of Physical Education."

LIBERAL STUDIES

Degree offered: B.L.S.

The Bachelor of Liberal Studies 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 attending 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 applicable toward the degree may be earned in a variety of ways, including Saturday and Evening Case Program courses, correspondence and independent study courses, off-campus courses at sites throughout Iowa, televised courses, and on-campus courses during the day. Courses from any of the three Iowa Regents universities may be applied toward the
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 felt by society and individuals; to engage in research that increases understanding of the variety of information needs and of the actions that can be taken to provide for those needs; and to provide public service through continuing education and consulting and through association and other professional service in so far as such growth is facilitated toward broader professional programs, and so the public have the information service they need.

Instructional Objectives

Upon completion of the program, students are able:

- 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 the dissemination of information; demonstrate a professional attitude toward the librarian's role as a mediator between user and information; and show a commitment to improve the quality of library and information services in response to the needs of all segments of society;
- Demonstrate an understanding of information sources, the flow of information through society, and the role of library and information centers in the process;
- Demonstrate an appreciation for the contribution that information, libraries, and learning can make to the richness of life, and the skill and ability to convey that appreciation to others;
- Demonstrate mastery of the techniques and procedures of effective information service (i.e., the selection, acquisition, organization, storage, retrieval, and dissemination of information);
- Identify and use bibliographic techniques and sources of information in a broad range of media formats 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;
- Cite and evaluate research that helps in the advancement of the profession and cite and evaluate the contributions to librarianship made by related disciplines;
and

Demonstrate a commitment to professional growth.

Research Objectives

Faculty engage in research on library and information problems that advances both theoretical and practical knowledge. They emphasize research that directly supports the instructional program of the School of Library and Information Science or that may have special relevance to library service in the state of Iowa.

Public Service Objectives

The school offers library and information services and library trustees opportunities for continuing education that advances and updates their awareness of current developments in library operations and information services. It provides consulting services to individuals, libraries, and organizations in order to 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 (100 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. The course may later apply to requirements for the degree.

Graduate students in other programs may take a course only with approval of the director and the instructor of the course. This allows access to courses, such as those in subject bibliography that may be relevant to the student's major program.

Master of Arts

Professional preparation for careers in all types of libraries is provided by the school's Master of Arts program. In addition, those who hold positions in public, school, academic, special libraries and information centers, serving in such roles as administrator, information consultant, subject specialist, automation manager, cataloger, children's librarian, media specialist, or coordinator are encouraged.

The Master of Arts degree in library and information science requires 33 semester hours of graduate credit with a minimum grade-point average of 3.00, and completion of a comprehensive examination. Five additional semester hours of credit are required for certification as 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.

Public Library Work

Public funds support public libraries in order to provide information, educational, and recreational services and materials and to promote the improvement of library service in the state of Iowa. In addition, the public libraries usually provide the largest part of their lending power from local sources, are organized on a regional or statewide cooperative basis. The variety of services, materials, and resources that public libraries make available to the public is a measure of the extent and quality of the services that are provided. A major concern of public librarians is to use the effectiveness of public libraries to reach segments of the population that are not served, as well as to provide a full range of services to all members of the community. Management skills are often important in these positions.

Plan of Study

Required core courses 15 s.h.
Suggested electives 18 s.h.
College and University Library Work

The academic library, whether in a community college, a four-year college, or a university, provides information, education, and research services to students, faculty, and staff. Management or supervisory staff often is required. Special competencies such as a subject or language specialization (classification and indexing or information systems) may be necessary.

Plan of Study

Required core courses
15 s.h.

Suggested electives
18 s.h.

21-252 The College and University Library
21-247 Information Storage and Retrieval
21-248 Library Automation
21-249 Research Methods
21-251 Advanced Reference
21-252 Description and Organization of
Materials II
21-255 Government Publications
21-264 Medical Librarianship and
Bibliography
21-265 Law Librarianship, Bibliography, and Research Techniques
21-282 Practicum in Libraries

7W-105 Design and Production of
Media for Instruction

2 s.h.

Total
38 s.h.

Iowa Community College Certification

The school offers an approved program for librarianship resource specialist in an area vocational school or community college. Students receive this endorsement upon completion of the 21-110 degree with the program listed under "College and University Library Work" and 7W-117 The Community College.

Students wishing to pursue community college certification in an area vocational school may take 7W-117. The Community College as an elective.

Joint Degree Programs

Joint degree programs between the School of Library and Information Science and other University units provide their primary goal the integration of the two areas of study, allowing the student to contribute to one discipline the insights and experience gained in the other.

Although there is a mechanism by which departments may approve a joint program on an ad hoc basis, the School of Library and Information Science has established formal programs with the College of Law and the College of Business Administration. Students enrolled in such a joint program will work with an advisor in the School of Library and Information Science to ensure the benefits of integration.

Objectives of a joint program must be consistent with the goals stated above, and since they vary from student to student, are a matter of advising. For instance, a student who seeks a career in a law or business library requires a different sequence of courses from one attempting to study the legal aspects of librarianship or the management of the library as a complex organization. Yet another student may choose to view the benefits a joint program offers in graduate placement and management information systems.

To enroll in a joint program, students must 409-110 and be accepted by the School of Library and Information Science and the other unit involved. Up to 6 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 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
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 fully computerized cataloging system. Its service philosophy and contemporary management practices provide students with an innovative public library model.

Other Resources

Librrrarian's Office, located across the street from the Main Library, houses the Learning Resources Center at the College of Education and the Weig Computing Center. The resource center consists of the Video Lab, Computer Resource Lab, Audiovisual Production Lab, and Curriculum Resources Lab. The Curriculum Resources Lab contains an extensive collection of books and nonbook instructional materials for children in preschool through grade 12. It is especially valuable for students interested in school or public library work.

Weig Computing Center provides instructional and research computing facilities and services for the University community. All University students, staff, and faculty may use the center's computers for University-related research, thesis preparation, and class work. Each graduate student is provided with a small fund account by the Graduate College.

Faculty Advising

Each graduate student is assigned an adviser upon admission. Students are encouraged to maintain contact objectives and problems with other faculty members as well. The relatively small number of students in the school allows faculty members to get to know students individually and to take an interest in their professional development. All courses to be applied to the 33-semester-hour program must be approved by the adviser.

Student Activities

Students have a variety of activities available to aid in their academic and professional development. Conference sponsors, short courses, work-study positions, field trips, and teleconferences provide frequent exposure to contemporary developments in library and information science, as well as an opportunity to meet with practicing librarians both across the state and nation. The Library and Information Science Student Organization (LISOS) is composed of all students interested in the M.A. program. The Executive Committee of LISOS (ECL) 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 sends representatives to faculty meetings.

Placement

The school provides active placement assistance to its graduates by means of bulletin board announcements, seminars on interviewing and interviewing, and personal counseling. The University's Placement Office issues a weekly listing of job openings and provides a credential file service.

lowa graduates find positions in all types of libraries. The placement assistance for the past three years was: academic libraries 45 percent, public libraries 30 percent, specialty libraries 15 percent, and school libraries 10 percent. Iowa graduates currently are working in libraries in 45 states and 12 foreign countries. Strong personal and academic qualifications, job flexibility, and geographic mobility are important factors in obtaining a position.

Admission

Scholastic 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 2.50 on a 4.00 scale, and at least 45 semester hours of study in the liberal arts and sciences.

A combined verbal/quantitative score of 1000 or a combined verbal/quantitative score of 1000 on the Graduate Record Examination (GRE) General Test.

Personal qualifications and aptitude for library work are assessed by means of letters of recommendation, a personal interview with the school director and other members of the faculty. Alternate interviews are arranged when distance precludes other disposition for an applicant to come to Iowa City. The school does not accept every applicant who meets the minimum admission requirements; an admissions committee selects each class on a competitive basis.

International students are encouraged, to apply if they attain a score of 560 or higher on the Test of English as a Foreign Language (TOEFL). Persons with slightly lower scores may be considered for conditional admission with the understanding that they receive remedial assistance in English at the University.

Applicants are requested to write to the School of Library and Information Science for a preliminary information form. If the information provided on the form indicates that the applicant satisfies the basic admission requirements, the school will schedule a personal interview.

Prospective students are urged to begin application procedures early enough to complete all requirements by the deadlines given below. The applicant should allow more time if he or she has not already taken the Graduate Record Examination (GRE) General Test.

Completed applications should be received by the school by March 1 for the fall semester consideration. October 1 for the spring semester, or February 1 for the summer session. Exceptions of the admissions
There are many indicators that such programs exist in language. Children normally learn to use their native language before they enter school, and without much direct instruction. People can speak and understand sentences they have never heard before. All languages have several ways of saying the same thing and all have analogies. All languages change through time. Damage to a particular part of the brain may be related to a particular type of linguistic problem, whatever the language. All languages are systems with some unique properties, some universal properties, and some properties shared with other languages that may or may not be historically related.

Linguists do not attempt to learn many languages. Rather, they consider the languages of the world as data to be analyzed by common principles. Linguistics is a science with many laboratories. One linguistic laboratory may consist of a library and pencil and paper. Another may work with acoustic equipment. Others need computers. Some go into walled-off places to study, describe, and analyze little-known languages that may be in danger of extinction. Some go into their own communities to study the relationship between language variation and socioeconomic structure, race, or sex. Still others, interested in language change, study ancient languages.

Linguists are traditionally trained in scientific research for its own sake. Linguists may teach English as a foreign language. They may help design school programs that are relevant for Chicano, Black, and Native Americans. They may help people who make intelligence and achievement tests available to discriminate against those who are not middle-class within Americans, or they may take them up to challenge particular ethnic myths about people with linguistic disabilities.

English for Foreign Students

ΕFL instruction is offered in three distinct but related programs: the EFL-credit support courses, the Iowa Intensive English Program (IEP), and the Teaching Assistant Preparation in English (TAP). These programs meet the needs of students whose first language is not English. The EFL-credit support courses help students raise their English proficiency so that they can complete a degree successfully. The IEP offers intensive instruction for students who must raise their English proficiency to gain admission to a university or college. The TAP program prepares students to teach in the American classroom.

EFL Credit Support Courses

The EFL support courses bridge the gap between full-time language instruction and full-time academic work. These courses serve students whose TOEFL scores range from 50 to 59. Courses are offered to increase proficiency in all skill areas: reading, writing, speaking, listening comprehension, pronunciation, and grammar. Each course grants three semester hours of credit which count toward graduation. Courses are taught by EFL staff. Some of whom are professional EFL instructors, pursuing advanced degrees in linguistics.

Iowa Intensive English Program (IEP)

The Iowa Intensive English Program serves primarily students who have not yet been admitted to the University and whose TOEFL scores are below 50. The program offers intensive English instruction and a cultural, social, and academic orientation to the United States. Instruction emphasizes speaking and written English, which is crucial to college and university work in the United States. Grammar and the basic language skills of writing, reading, listening comprehension, pronunciation, and speaking are taught each day at all levels—beginning, intermediate, and advanced.

Each student receives twenty hours of classroom instruction each week in addition to individual work in the language laboratory. Field trips and cultural and social activities are an integral part of the program. Students enrolled in IEP have full access to all University facilities. The program welcomes international students preparing to continue their studies and colleagues as well as other adults who want to improve their spoken and written English skills. Instruction is by full-time professional EFL instructors.

Students admitted to the IEP receive a certificate of proficiency in English 200-220, which enables them to obtain a student visa for the nearest U.S. consulate. Application materials are available from the linguistics department office.

TAEPE Program

The Teaching Assistant Preparation in English Program (TAP) prepares graduate students whose first language is not English, who need additional work on their communicative English and teaching techniques, and who will be teaching assistantships while at The University of Iowa. Only students who need the program and who have a sufficient competence in English to profit from it are eligible. The course is open to all graduate students upon their first appointment as teaching assistants, and to others if space is available. Instruction is by full-time professional EFL instructors.

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 formative and abstract symbols. Depending on the student's goals, prospective linguists students should consider pursuing their studies either through the MA in linguistics with a professional focus or through the doctorate—of which should take a second major. Appropriate comparison fields include foreign languages, English, anthropology, sociology, speech pathology, psychology, mathematics, computer science, philosophy, and elementary, secondary, and special education.

The Bachelor of Arts degree in linguistics prepares students to do basic language analysis in syntax-semantics (sentence patterns and their related meanings) and phonology (sound patterns). Elective courses in a variety of specialties enable students to tailor the program to their own interests.

The major in linguistics requires 24 semester hours of course work. May elect to take an introductory linguistics course (102-103), courses in phonetics (103-110), phonology (103-111), and syntax (103-112) and a course in language history. The last requirement can be satisfied by taking 103-110 Historical and Comparative Linguistics, or a course in the history of some language or language family (e.g., 103-113, 103-120), or a course in an old language (e.g., Classical Greek, Latin, Sanskrit, Old English). Remaining articles are chosen with the undergraduate advisor.

Graduate Programs

Equipped in all graduate programs is an overview and research. Students interested in nonprofits careers may also be required. The required core courses are 103-110 Articulation and Sound Patterns (105-111) Syntactic Analysis, 303-112 Phonological Analysis and Theory, 103-120 Historical and Comparative Linguistics, 103-112 Syntactic Theory, 303-122 Phonological Theory and one of the following: 103-123 Linguistic Field Methods or 103-123 Linguistic Structures, or 103-121 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 9 semester hours of thesis credit.

Students who take a degree without thesis complete a focus consisting of 12 hours of course work and take at least 1 semester hour of elective courses. The focus may be designed in advance by the student (subject to departmental approval).
different departments and disciplinary perspectives. The range of course offerings engage the special contributions of particular disciplines, while focusing on important problems of value and judgment in our time. Reading lists are chosen from outstanding works of past and present.

Specific requirements—beyond the general education courses—for the B.A. in Literature, Science, and the Arts are as follows:


**Undergraduate Programs**

**Bachelor of Arts**

Students seeking the B.A. degree in Mathematical Sciences may take 3 semester hours of the General Education Requirement in quantitative or formal reasoning.

Students must take at least seven additional approved courses from the division beyond one year of calculus (238B-238C Introduction to Calculus or 238B-238D Calculus). These courses must include Linear Algebra and 238A-238B Calculus I are strongly recommended.

Each of the seven additional courses must carry at least 3 semester hours of credit. Except for students electing the applied mathematical sciences option or those seeking a secondary teaching certificate, at least two of the seven courses must be chosen from the following list:

238C-116 Operating Systems and Concurrent Programming
238C-121 Advanced Computer Organization and Architecture
238C-160 Programming Language Foundations
238C-155 Data Structures, Types, and Structures
238C-135 Introduction to Computation Theory
238C-145 Artificial Intelligence
238C-120 Design and Analysis of Algorithms
238C-107 Theory of Graphs

Any mathematics course numbered 238B or above except 238B or 238C is also acceptable.

238C-151 Introduction to Probability
238C-154 Introduction to Mathematical Statistics
238C-164 Introduction to Discrete Probability Models
238C-167 Introduction to Stochastic Processes
238C-175 Casualty Actuarial Mathematics
238C-176 Life Actuarial Mathematics
238C-178 Life Actuarial Mathematics II

Some of the above courses require extensive prerequisites; students should consult in planning the program.

Students should consult the divisional office concerning courses that may be applied toward the seven-course requirement. Students who complete the requirements for a secondary teaching certificate may take any two of the above listed mathematical sciences division courses among the seven required courses in mathematics. See further requirements below under "Mathematics Education."
Courses in applied mathematics are available for students who are interested in taking mathematics courses that are not primarily theoretical in nature. These courses are designed to be of interest to students who need to use mathematics in their professional work. The courses are offered by the Department of Mathematical Sciences and are described below.

**Applied Mathematics**

**General**

Mathematics courses are available in several areas, including calculus, differential equations, linear algebra, mathematical modeling, probability, and statistics. These courses are designed to provide a solid foundation in mathematical concepts and techniques that are applicable to a wide range of disciplines. The courses are offered at the undergraduate and graduate levels and are taught by experienced faculty members who are active in research and scholarship. Students are encouraged to participate in class discussions and to ask questions to deepen their understanding of the material.

**Courses**

- **Calculus I** (MATH 101): An introduction to differential and integral calculus, including limits, derivatives, and integrals. This course is a prerequisite for most upper-division mathematics courses.
- **Calculus II** (MATH 102): A continuation of Calculus I, covering advanced topics in integration, series, and sequences. This course builds on the concepts introduced in Calculus I and prepares students for further study in mathematics.
- **Linear Algebra** (MATH 201): An introduction to the theory and applications of linear algebra, including vector spaces, linear transformations, and eigenvalues. This course is a prerequisite for many advanced mathematics courses.
- **Differential Equations** (MATH 301): An introduction to the theory and applications of differential equations, including first-order equations, higher-order equations, and systems of equations. This course is a prerequisite for many advanced mathematics courses and is essential for students interested in fields such as engineering and physics.
- **Probability and Statistics** (MATH 401): An introduction to the theory and applications of probability and statistics, including probability distributions, estimation, and hypothesis testing. This course is a prerequisite for advanced mathematics courses and is essential for students interested in fields such as data science and economics.

Students interested in applied mathematics are encouraged to consult with an advisor to determine the most appropriate courses for their academic and career goals. Course offerings and prerequisites may vary from semester to semester, so it is important to check with the department for the most up-to-date information.

**Applications**

Applied mathematics has a wide range of applications in various fields, including engineering, economics, physics, biology, and computer science. Students who complete these courses will have a solid foundation in mathematical tools and techniques that are essential for success in these fields. Additionally, these courses provide a strong intellectual foundation for students who wish to pursue advanced studies in mathematics or related fields.

**Transfer Students**

Transfer students are encouraged to consult with an advisor to determine the most appropriate courses for their academic and career goals. Course offerings and prerequisites may vary from semester to semester, so it is important to check with the department for the most up-to-date information.

**Contact Information**

For more information about mathematics courses or to schedule an appointment with an advisor, please contact the Department of Mathematical Sciences at (555) 555-5555 or math@university.edu.
Double Majors
See the divisional offices for information on double majors within the division.

M.B.A. Preparation
Undergraduate students majoring in mathematical sciences who want to earn a Master of Business Administration in one year of graduate study should consult with their advisor and with the associate dean of the College of Business Administration prior to their senior year concerning business courses that should be included in their undergraduate program.

APPLIED MATHEMATICAL SCIENCES
Chair: Herbert W. Helitzer
Faculty: Kondal L. Sirović (Mathematics), Dennis B. Decker (Industrial and Management Engineering), Gregory R. Cameron (Chemical and Materials Engineering), Ching-Iun Chu (Mechanical Engineering), Donald D. Duquette (Psychology), Peter A. Gelling (Physics and Astronomy), David J. Hayes (Chemical Engineering/Chemical and Environmental Engineering), Herbert W. Helitzer (Mathematics), William H. Kline (Physics and Astronomy), Kenneth D. Konstanty (Management Sciences), George E. Kooi (Physiology and Anatomy), David L. Lementing (Electrical and Computer Engineering), R. Morgan Linn (Mechanical Engineering), Roger K. Smith (Computer Science), George Woodward (Statistics and Actuarial Science).

Graduate degree offered: Ph.D. in Applied Mathematical Sciences

Applied mathematical sciences formulate scientific concepts and predict phenomena in mathematical terms; solve the resultant mathematical problems precisely, interpret, and evaluate the solutions; explore ideas for new areas of mathematical application; and develop mathematical theories in new areas.

Careers opportunities 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 seeks to help students achieve a common, theoretical and technical aspect of a mathematical science (mathematics, statistics, or computer science) and then a basic one-year of at least one science (behavioral, biological, engineering, medical, physical, or social). The program is flexible so that students can concentrate on applied mathematics such as differential equations and numerical analysis or on other applicable techniques in mathematics, statistics, or computer science.

Applications are expected to have a strong background in a mathematical science together with a desire to apply a mathematical science to research in scientific problems in another science. Students may enter with either a bachelor's or master's degree.

Plan of Study
The faculty members associated with the program help each student plan a course of study that is consistent with the students’ background, interests, and goals. They also help students find suitable thesis proposals and supervisors in the students’ chosen science.

Students' individual programs are designed to help them develop their own methods of application of mathematical science to build a good foundation in related topics of theoretical mathematics, statistics, or computer science; and to provide sufficient knowledge to a particular science so that the student can use mathematical science techniques in that area. The study plan must be arranged so that students can earn a Ph.D. degree for science in a mathematical science department or comprehensive part of their plan.

Comprehensive Exam
The Ph.D. comprehensive examinations cover three areas of theoretical foundations in the mathematical science, methods of application, and the major science area. An objective of the Program is to have each Ph.D. dissertation research include many of the activities of an applied mathematical scientist. For example, this could involve formulation of a model, qualitative analysis of the model, and interpretation of the results.

Application for Admission, Assistantships
Research and teaching assistantships are available to qualified applicants. Support for students as research assistants is available during the summers. Applications for fall semester admission and for financial support should be received by March 1.

Courses
222/207 Seminar in Applied Mathematical Sciences

Pre-requisite: consent of instructor

320 Reading and Research

Graduate assistantship

COMPUTER SCIENCE
Chair: Arthur C. Fleck
Professor: Donald A. Alton, Donald L. Easley, Arthur C. Fleck
Associate professor: Robert J. Bauman, Steven C. Bond, Neilson Choud, Douglas W. Jones, Todd Kain
Assistant professor: Marc Armstrong (Geography). Donald W. Cohen, Sarah A. Jornet, Charlene King, Manager, University, Wrong, D. (Farm)
Lecturer: William F. Becker
Undergraduate degrees offered: B.A., B.S. in Computer Science
Graduate degrees offered: M.S., Ph.D. in Computer Science

Undergraduate Programs
Pre-Computer Science
Enrolling students who want to major in computer science at the designated pre-computer science majors until they have met the entry requirements of the computer science major. Students continue on to computer science status until they complete the first four required courses of the major.

292 Introduction to Programming with Basic
220/202 Programming Techniques and Data Structures
222/202 Computer Organization and Assembly Language Programming
222/202 Calculus I

Upon completion of these courses, students are evaluated for entry into the computer science major. The requirements for entering the major are satisfied by meeting the following three conditions:

A grade-point average of at least 2.46 in the four required courses;
A minimum grade of C is earned in each of the four required courses; and
An overall grade-point average of at least 2.00.

Transfer students who have taken a course approved as equivalent to one of the pre-computer science courses are exempt
from that course, provided the transcript grade is at least a B.

After admission to the major, following successful completion of the pre-computer science requirement, students must maintain a grade-point average of 2.00 or higher in the courses required for the B.A. in computer science (see "Bachelor of Arts," below) in order to remain in the major, and to receive the B.A. or B.S. degree in computer science.

Advanced Placement

The Computer Science Advanced Placement test can be used to gain credit for C22:16 and/or C22:17. See the Computer Science Undergraduate Handbook for more details.

Bachelor of Arts

The General Education Requirements for this degree are stated in the "College of Liberal Arts" sections of the catalog.

Undergraduate students majoring in computer science must develop competence in mathematics and in programming languages and computer systems. Students seeking a B.A. degree in computer science may waive 3 semester hours of the General Education Requirement in quantitative or formal reasoning. For the B.A. degree, the following computer science core courses are required:

- C22:15 Calculus I (4 s.h.)
- C22:16 Calculus II (4 s.h.)
- C22:17 Introduction to Linear Algebra (4 s.h.)
- C22:18 Introduction to Programming with Pascal (4 s.h.)
- C22:17 Programming Techniques and Data Structures (3 s.h.)
- C22:18 Organization and Assembly Language Programming (4 s.h.)
- C22:19 Discrete Structures (3 s.h.)
- C22:21 Algorithms and Data Structures (3 s.h.)
- C22:20 Programming Language Concepts (3 s.h.)
- C22:12 Digital Systems and Computers (3 s.h.)
- C22:14 Introduction to Systems Software (3 s.h.)

Total: 38 s.h.

Bachelor of Science

The General Education Requirements for the degree are stated in the "College of Liberal Arts" section of the catalog. Students seeking a B.S. degree in computer science may waive 3 semester hours of the General Education Requirement in quantitative or formal reasoning. In computer science, students must complete all the previously stated computer science requirements for the Bachelor of Arts degree. In addition, they must meet the following three requirements:

- Completion of two advanced courses selected from those listed below.
- Completion of C22:120 Probability and Statistics; and
- Completion of a two-semester sequence in a natural science acceptable toward a major in that science; these courses are ordinarily chosen to also satisfy the College of Liberal Arts General Education Requirement in natural science.

Advanced Courses in Computer Science

C22:51 Computer Graphics
C22:55 Elementary Numerical Analysis
C22:56 Topics in Computer Science
C22:63 Honors in Computer Science (II repeated, credits as only one)
C22:155 Software Engineering
C22:116 Operating Systems and Concurrent Programming
C22:122 Advanced Computer Organization and Architecture
C22:123 Programming Language Foundations
C22:125 Data Structures, Types, and Structures
C22:127 Introduction to Compiler Construction
C22:135 Introduction to Computation Theory
C22:144 Database Management Systems
C22:146 Artificial Intelligence
C22:145 Computer Vision and Robotics
C22:133 Design and Analysis of Algorithms I
C22:47 Theory of Graphs
C22:170 Computer Communications
C22:199 Individual Programming Projects (if repeated, counts as only one)

Advanced Courses in Numerical Analysis
C22:170 Numerical Analysis: Nonlinear Equations and Approximation Theory
C22:171 Numerical Analysis: Differential Equations and Linear Algebra
C22:178 Topics in Numerical Solution of Partial Differential Equations

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.

Honors

Any University of Iowa student with a cumulative grade-point average of 3.30 or better may join 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, students must complete 64 semester hours of C22:59 Honors in Computer Science and submit an acceptable honors thesis. To take C22:59, students must have the consent of a computer science faculty member. The faculty member must know the nature of the intended project for the honors thesis, a plan or timetable for the work, and the nature of the three steps. Students are responsible for finding a faculty member willing to supervise their honors project. See the Computer Science Undergraduate Handbook for more details.

Electives

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 advisor beforehand and cannot be taken pass/no-credit. They also may be used to satisfy college elective requirements. See the Computer Science Undergraduate Handbook for more details and examples of approved elective programs.

Minor

To earn a minor in computer science, students must complete a minimum of 17 semester hours, at least 12 of which must be taken in advanced University of Iowa course work. Students must complete C22:16 Introduction to Programming with Pascal, C22:17 Programming Techniques and Data Structures, and C22:18 Computer Organization and Assembly Language Programming. They also must complete two more courses chosen from C22:39 Programming with C++, or any computer science course numbered higher than C22:18, except those numbered C22:18-35, 49. In determining the minor only, the courses listed here, other than C22:16, are considered advanced. These courses may not be taken pass/no-credit. Engineering majors may not use courses required in the engineering curriculum for the minor in computer science.

Graduate Programs

Master of Science

Candidates for the M.S. degree in computer science must complete the following course requirements:

C22:146 Operating Systems and Concurrent Programming
C22:122 Advanced Computer Organization and Architecture
C22:123 Programming Language Foundations
C22:125 Data Structures, Types, and Structures
C22:127 Introduction to Compiler Construction
C22:135 Introduction to Computation Theory
C22:144 Database Management Systems
C22:146 Artificial Intelligence
C22:145 Computer Vision and Robotics
C22:133 Design and Analysis of Algorithms I
C22:47 Theory of Graphs
C22:170 Computer Communications
C22:199 Individual Programming Projects (if repeated, counts as only one)

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.

Honors

Any University of Iowa student with a cumulative grade-point average of 3.30 or better may join 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, students must complete 64 semester hours of C22:59 Honors in Computer Science and submit an acceptable honors thesis. To take C22:59, students must have the consent of a computer science faculty member. The faculty member must know the nature of the intended project for the honors thesis, a plan or timetable for the work, and the nature of the three steps. Students are responsible for finding a faculty member willing to supervise their honors project. See the Computer Science Undergraduate Handbook for more details.

Tota...
range of experience and competence in computer science. In particular, some experience with projects involving extensive programming should be included. M.S. candidates may elect to write a thesis, and with their advisor's consent may spend up to 8 semester hours of thesis credit toward the minimum total of 30 semester hours of credit required for the M.S. degree. The M.S. final examination consists of either an oral defense of the thesis or a written exam that assesses the completion of C2C-116 Operating Systems and Concurrent Processing, C2C-126 Advanced Computer Organization and Architecture, C2C-129 Programming Languages Foundations, and C2C-135 Introduction to Computation Theory. The written examination attempts to confront the student with some of the major topics from these courses as well as the major topics in the individual courses. Students should consult the Computer Science Graduate Handbook for further information.

Applicants for admission to the M.S. program in computer science usually are required to have a background equivalent to a B.A. or B.S. in computer science. In special cases, students lacking one or more of the undergraduate prerequisites may be admitted to the graduate program. In such cases, the student is required to complete these courses prior to admission to graduate courses.

Doctor of Philosophy

Doctoral students are expected to complete 80-90 semester hours of graduate work, including a thesis. Students need not have a master's degree when beginning the Ph.D. program, and need not acquire one. Course requirements and candidate proficiency for the doctorate include:

C2C-116 Operating Systems and Concurrent Processing 3 s.h.
C2C-126 Advanced Computer Organization and Architecture 3 s.h.
C2C-129 Programming Languages Foundations 3 s.h.
C2C-125 Data Abstractions, Types, and Structures 3 s.h.
C2C-137 Introduction to Compiler Construction 3 s.h.
C2C-130 Introduction to Computational Theory 3 s.h.
C2C-124 Database Management Systems 3 s.h.
C2C-145 Artificial Intelligence 1 3 s.h.
C2C-153 Design and Analysis of Algorithms 4 3 s.h.

Students also must complete at least 18 semester hours of 800-level computer science coursework as a preparation for the C2C-299 Research for Dissertation. In addition to the course work in computer science, students must complete at least three courses, with grades of A or B, in one of these outside areas: languages, 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 400 (advanced) level, except in statistics and probability, where the advanced course may be at the 100 level.

After passing the qualifying examination, they select a faculty advisor to direct their research and their advisors select the dissertation committee. In consultation with the advisor and dissertation committee, students prepare a plan of study and specifications for a comprehensive examination that will serve as the Ph.D.'s comprehensive examination. The dissertation committee administers the individual examination after most of the required course work is completed.

Examinations are described in the Computer Science Graduate Handbook. Students prepare a written proposal for research and present an oral defense of the dissertation committee. They must demonstrate expertise in the area of proposed research and justify the adequacy in terms of originality and significance. Most students must complete 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 3.30.

Graduate Service Courses

Competence and experience in the use of a digital computer in problem solving is a useful tool for all students in the advanced study and research in many disciplines. For most students, the two-semester sequence, C2C-116 Introduction to Programming Techniques on Pascal and C2C-117 Programming and Data Structures, is recommended. Students in fields in which other programming techniques are usually employed may find C2C-118 Introduction to Computing with FORTRAN or C2C-121 Programming with COBOL more appropriate.

Courses

Primarily for Undergraduates

C2C-106 Cooperative Education Training

A 9 s.h.

A year-long work experience with a selected business or company that integrates classroom and job experiences prior to career decisions. Emphasizes clearly some concepts as "Cooperation Graduate" or "the Student Life in the Business World". Emphasizes the importance of career planning and preparation.

3517 Survey of Computing

A 3 s.h.

The course deals with computers and their applications, and discusses basic concepts, impact models of computing technology, impact on society and technology, and the role of science and technology requirements and departmental approval.

SOC Survey of Computing

A 3 s.h.

The course, which discusses the role of computers and information technology in society, may include discussion of ethical and professional issues, and is designed for students in the sciences, humanities, and engineering disciplines.

C2C-106 Problem Solving and Computing

A 3 s.h.

The course deals with the role of computers and information technology in society, and is designed for students in the sciences, humanities, and engineering disciplines. The course is designed to help students in computer science understand the role of information technology in society.

3217 Introduction to Computing with FORTRAN

A 3 s.h.

An overview of computer systems and programming techniques on FORTRAN, applications of FORTRAN, and the use of FORTRAN in solving scientific and engineering problems. An introduction to computer programming and the use of FORTRAN as a programming language for scientific and engineering problems.

3218 Programming with COBOL

A 3 s.h.

An introduction to the FORTRAN and COBOL programming languages, with emphasis on the use of these languages for scientific and engineering problems. The course covers the use of FORTRAN and COBOL for scientific and engineering problems.

3219 Introduction to Programming with Pascal

A 3 s.h.

An introduction to the use of Pascal in problem solving. Topics include basic concepts, programming techniques, and applications of Pascal in scientific and engineering problems. The course covers the use of Pascal in scientific and engineering problems.

3220 Computer Organization and Assembly Language Programming

A 3 s.h.

An introduction to computer organization and assembly language programming. The course covers the use of assembly language programming in scientific and engineering problems.

3221 Computer Organization and Assembly Language Programming

A 3 s.h.

An introduction to computer organization and assembly language programming. The course covers the use of assembly language programming in scientific and engineering problems.

3222 Computer Organization and Assembly Language Programming

A 3 s.h.

An introduction to computer organization and assembly language programming. The course covers the use of assembly language programming in scientific and engineering problems.

3223 Computer Organization and Assembly Language Programming

A 3 s.h.

An introduction to computer organization and assembly language programming. The course covers the use of assembly language programming in scientific and engineering problems.

3224 Computer Organization and Assembly Language Programming

A 3 s.h.

An introduction to computer organization and assembly language programming. The course covers the use of assembly language programming in scientific and engineering problems.

3225 Computer Organization and Assembly Language Programming

A 3 s.h.

An introduction to computer organization and assembly language programming. The course covers the use of assembly language programming in scientific and engineering problems.

3226 Computer Organization and Assembly Language Programming

A 3 s.h.

An introduction to computer organization and assembly language programming. The course covers the use of assembly language programming in scientific and engineering problems.
Mathematics

Undergraduate Programs

The program must include two mathematics courses numbered 22M.100 and above, exclusive of 22M.104 and 22M.105. The 100-level computer science and statistics courses listed above may be used to meet this requirement.

The program must include a two-semester sequence from the following list:

- 22M.100/104 Introduction to Ordinary Differential Equations/Intermediate
  Mathematical Models
- 22M.105/104 Introduction to Ordinary Differential Equations/Intermediate
  Differential Equations
- 22M.105/104 Introduction to Ordinary Differential Equations/Introduction to Partial
  Differential Equations
- 22M.115/116 Introduction to Analysis I/II
- 22M.120/121 Abstract Algebra I/II
- 22M.127/128 Introduction to Linear Algebra/Axes

Restrictions

The program must include two mathematics courses numbered 22M.100 and above, exclusive of 22M.104 and 22M.105. The 100-level computer science and statistics courses listed above may be used to meet this requirement.

The program must include a two-semester sequence from the following list:

- 22M.100/104 Introduction to Ordinary Differential Equations/Intermediate
  Mathematical Models
- 22M.105/104 Introduction to Ordinary Differential Equations/Intermediate
  Differential Equations
- 22M.105/104 Introduction to Ordinary Differential Equations/Introduction to Partial
  Differential Equations
- 22M.115/116 Introduction to Analysis I/II
- 22M.120/121 Abstract Algebra I/II
- 22M.127/128 Introduction to Linear Algebra/Axes

Mathematics

Bachelor of Arts

Program A Requirements

- 22M.25-26 Calculus I-II (8 s.h.)
- 22M.35-36 Engineering Calculus I-II
- 22M.45-46 Accelerated Calculus I-II

(Advanced placement credit is accepted for this requirement.)

- 22M.27 Introduction to Linear Algebra
- 22M.35 Calculus III
- 22M.36 Calculus IV

(Advanced placement credit is accepted for this requirement.)

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications
- 22M.127/128 Group Theory/Abstract Algebra I
- 22M.133/134 Introduction to Probability/Introduction to Mathematical Statistics

Or any two courses selected from one of the following groups:

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Note: Completing a 100-level sequence simultaneously satisfies each of the above restrictions.

Program B Requirements

This program is intended primarily for students seeking secondary school teaching certification.

- 22M.25-26 Calculus I-II (8 s.h.)
- 22M.35-36 Engineering Calculus I-II
- 22M.45-46 Accelerated Calculus I-II

(Advanced placement credit is accepted for this requirement.)

- 22M.27 Introduction to Linear Algebra
- 22M.35 Calculus III
- 22M.36 Calculus IV

(Advanced placement credit is accepted for this requirement.)

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Or any two courses selected from one of the following groups:

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Note: Completing a 100-level sequence simultaneously satisfies each of the above restrictions.

Program C Requirements

This program is intended primarily for students seeking secondary school teaching certification.

- 22M.25-26 Calculus I-II (8 s.h.)
- 22M.35-36 Engineering Calculus I-II
- 22M.45-46 Accelerated Calculus I-II

(Advanced placement credit is accepted for this requirement.)

- 22M.27 Introduction to Linear Algebra
- 22M.35 Calculus III
- 22M.36 Calculus IV

(Advanced placement credit is accepted for this requirement.)

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Or any two courses selected from one of the following groups:

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Note: Completing a 100-level sequence simultaneously satisfies each of the above restrictions.

Program D Requirements

This program is intended primarily for students seeking secondary school teaching certification.

- 22M.25-26 Calculus I-II (8 s.h.)
- 22M.35-36 Engineering Calculus I-II
- 22M.45-46 Accelerated Calculus I-II

(Advanced placement credit is accepted for this requirement.)

- 22M.27 Introduction to Linear Algebra
- 22M.35 Calculus III
- 22M.36 Calculus IV

(Advanced placement credit is accepted for this requirement.)

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Or any two courses selected from one of the following groups:

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Note: Completing a 100-level sequence simultaneously satisfies each of the above restrictions.

Program E Requirements

This program is intended primarily for students seeking secondary school teaching certification.

- 22M.25-26 Calculus I-II (8 s.h.)
- 22M.35-36 Engineering Calculus I-II
- 22M.45-46 Accelerated Calculus I-II

(Advanced placement credit is accepted for this requirement.)

- 22M.27 Introduction to Linear Algebra
- 22M.35 Calculus III
- 22M.36 Calculus IV

(Advanced placement credit is accepted for this requirement.)

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Or any two courses selected from one of the following groups:

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Note: Completing a 100-level sequence simultaneously satisfies each of the above restrictions.

Program F Requirements

This program is intended primarily for students seeking secondary school teaching certification.

- 22M.25-26 Calculus I-II (8 s.h.)
- 22M.35-36 Engineering Calculus I-II
- 22M.45-46 Accelerated Calculus I-II

(Advanced placement credit is accepted for this requirement.)

- 22M.27 Introduction to Linear Algebra
- 22M.35 Calculus III
- 22M.36 Calculus IV

(Advanced placement credit is accepted for this requirement.)

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Or any two courses selected from one of the following groups:

- 22M.10/11 Foundations of Set Theory/Foundations of Logic
- 22M.101/102 Introduction to Linear Algebra
- 22M.115/116 Complex Variables/Complex Variables: Applications

Note: Completing a 100-level sequence simultaneously satisfies each of the above restrictions.
22C.14 Introduction to Programming with Pascal 4 s.h.
22S.120 Probability and Statistics 4 s.h.
or
22S.133 Introduction to Probability 3 s.h.
and 22S.14 Introduction to Mathematical Statistics 3 s.h.
22M.90 Introduction to Discrete Mathematics 3 s.h.
or
22M.151 Discrete Mathematical Models 3 s.h.
or
22M.152 Theory of Graphs 3 s.h.
Our additional courses in mathematics exclusive of 22M.80, 22M.81, and 22M.195 3 s.h.
Recommended additional courses in math but are not limited to:
22M.72 Elementary Numerical Analysis 3 s.h.
22M.90 Introduction to Discrete Mathematics 3 s.h.
22M.106 Introduction to Non-Euclidean Geometry 3 s.h.
22M.107 History of Mathematics 3 s.h.
22M.152 Discrete Mathematical Models 3 s.h.
or
22M.153 Theory of Graphs 3 s.h.
The following computer science and statistics courses also may be used to fulfill this requirement.
22C.17 Programming Techniques and Data Structures 3 s.h.
22C.31 Algorithm and Data Structures 3 s.h.
22C.135 Introduction to Computer Theory 3 s.h.
22C.152 Design and Analysis of Algorithms I 3 s.h.
22C.152 Regression Analysis 3 s.h.
22C.153 Introduction to Probability 3 s.h.
22C.154 Introduction to Discrete Probability Models 3 s.h.
22C.167 Introduction to Stochastic Processes 3 s.h.
Total 30-40 s.h.
Bachelor of Science
Program A Requirements
Program A requirements are the same as those for the B.A., program A, except that two additional courses in mathematics numbered at least 22M.106 and excluding 22M.195 are required. The following computer science and statistics courses also may be used to fulfill this requirement.
22C.135 Introduction to Computer Theory 3 s.h.
22C.152 Design and Analysis of Algorithms I 3 s.h.
22C.152 Regression Analysis 3 s.h.
22C.153 Introduction to Probability 3 s.h.
22C.154 Introduction to Mathematical Statistics 3 s.h.
22C.167 Applied Time Series Analysis 3 s.h.
22S.144 Introduction to Discrete Probability Models 3 s.h.
22S.167 Introduction to Stochastic Processes 3 s.h.
22S.177 Introduction to Computational Theory 3 s.h.
22C.123 Programming Language Foundations 3 s.h.
22C.148 Artificial Intelligence I 3 s.h.
22S.157 Introduction to Artificial Intelligence I 3 s.h.
or
22S.167 Introduction to Algorithmic Processes 3 s.h.
or
22S.167 Theory of Graphs 3 s.h.
Any mathematics course having any of these three as a prerequisite
Program B
This program is designed for secondary school teachers. The requirements are the same as those in Program I, but except that two mathematics education courses are required. Mathematics courses numbered 106 or above may be used to satisfy the 34 semester-hour requirement.
Program C
This program is oriented to applied mathematics. Students must take these required courses:
22S.144 Introduction to Partial Differential Equations 3 s.h.
22S.142 Intermediate Differential Equations 3 s.h.
22S.146 Continuous Mathematical Models 3 s.h.
or
22S.151 Discrete Mathematical Models 3 s.h.
22S.174 Optimization Techniques 3 s.h.
22S.176 Numerical Analysis: Polynomial Equations and Approximation Theory 3 s.h.
22S.177 Numerical Analysis: Differential Equations and Linear Algebra 3 s.h.
Students are required to take two comprehensive examinations covering the content of 22M.170, 22M.171, and 22M.172, the other covering the content of 22M.144 and 22M.142.
Two additional courses from the following.
22M.118 Covariance Variables 3 s.h.
22M.127 Matrix Theory 3 s.h.
22S.146 Continuous Mathematical Models 3 s.h.
or
22S.146 Continuous Mathematical Models 3 s.h.
or
22S.152 Theory of Graphs 3 s.h.
22C.152 Operating Systems and Concurrent Programming 3 s.h.
or
22C.155 Design and Analysis of Algorithms I 3 s.h.
or
22C.153 Introduction to Probability 3 s.h.
or
22S.154 Introduction to Mathematical Statistics 3 s.h.
or
22S.167 Introduction to Algorithmic Processes 3 s.h.
Program C
The program requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in the completion of Mathematical Sciences. Students who have courses or experience equivalent to the required courses may substitute electives.
Program IV
This program is designed for nondepartmental students working toward a Ph.D. in another area requiring 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 successfully completed the comprehensive Ph.D. examination in the chosen area.

Students in program IV are assigned a mathematics advisor who works with them and their advisor to plan an appropriate curriculum for the master's degree in mathematics. A suitable program of study should be approved by a mathematics advisor before the student takes the Ph.D. comprehensive examination, and a member of the mathematics faculty should serve on the Ph.D. comprehensive examination committee.

Admission
To be admitted to an M.S. degree program in mathematics, students must have completed work in an undergraduate mathematics program equivalent to the one offered by the School of Mathematical Sciences. However, unusual preparation does not meet the requirement may be required to follow the traditional courses to cover the deficiency.

Doctor of Philosophy
The Ph.D. program places strong emphasis on preparation for research and teaching. The Ph.D. requires 90 units that include a broad selection of courses in applied and pure mathematics.

The requirements for the Ph.D. in mathematics include 72 semester hours of graduate credit including at least three years of graduate study, including at least one of the five four-year programs. Each student's program in statistics is expected to gain experience in both the University and the industrial communication of mathematics, this requirement usually is fulfilled by classroom teaching or seminar lecturing. The comprehensive qualifying examination for the Ph.D. in mathematics covers three of these areas: algebra, analysis, logic and foundations, and topology. Students select the three areas which it is to be examined.

At least 18 semester hours of graduate credit must be earned in courses at a level beyond the comprehensive exam. A list of current approved courses is available from the mathematics office.

Candidates must write a thesis and pass a final examination.

Candidates are required to demonstrate adequate proficiency in French, German, or Russian before passing a language test administered by the appropriate foreign language department. This examination is normally administered by the foreign language department. This demonstration must take place after the student has enrolled in graduate school.

Information about the Ph.D. program in mathematics education is provided in the brochure, Advanced Education in Education, available from the Office of Education.

The Department of Mathematics also cooperates in interdisciplinary doctoral programs with the Ph.D. in Applied Mathematical Sciences.

Courses
Undergraduate: Lower Division
These courses are not open to graduate students except by special arrangement with the department chair.

M2050 Cooperative Education Internship 1.5 a.h.
M2051 Bank Algebra I 5.0 a.h.
M2052 Bank Algebra II 3.3 a.h.
M2053 Calculus I 5.0 a.h.
M2054 Calculus II 5.0 a.h.
M2055 Calculus III 5.0 a.h.
M2056 Linear Algebra 3.0 a.h.
M2057 Differential Equations 3.0 a.h.
M2058 Introduction to Probability and Statistics 3.0 a.h.
M2059 Computer Applications 3.0 a.h.
M2060 Business Mathematics 3.0 a.h.
M2061 Mathematical Analogies 3.0 a.h.
M2062 Mathematics and Culture 3.0 a.h.
M2063 Introduction to Calculus with 3.0 a.h.
M2064 Discrete Mathematics 3.0 a.h.
M2065 Linear Algebra 3.0 a.h.
M2066 Modern Algebra 3.0 a.h.
M2067 Number Theory 3.0 a.h.
M2068 Real Analysis 3.0 a.h.
M2069 Complex Variables 3.0 a.h.
M2070 Numerical Analysis 3.0 a.h.
M2071 Probability and Statistics 3.0 a.h.
M2072 Introduction to Statistics 3.0 a.h.
M2073 Introduction to Probability and 3.0 a.h.
M2074 Introduction to Computer Science 3.0 a.h.
M2075 Introduction to Computer Science 3.0 a.h.
M2076 Introduction to Computer Science 3.0 a.h.
M2077 Introduction to Computer Science 3.0 a.h.
M2078 Introduction to Computer Science 3.0 a.h.
M2079 Introduction to Computer Science 3.0 a.h.
M2080 Introduction to Computer Science 3.0 a.h.
M2081 Introduction to Computer Science 3.0 a.h.
M2082 Introduction to Computer Science 3.0 a.h.
M2083 Introduction to Computer Science 3.0 a.h.
M2084 Introduction to Computer Science 3.0 a.h.
M2085 Introduction to Computer Science 3.0 a.h.
M2086 Introduction to Computer Science 3.0 a.h.
M2087 Introduction to Computer Science 3.0 a.h.
M2088 Introduction to Computer Science 3.0 a.h.
M2089 Introduction to Computer Science 3.0 a.h.
M2090 Introduction to Computer Science 3.0 a.h.
M2091 Introduction to Computer Science 3.0 a.h.
M2092 Introduction to Computer Science 3.0 a.h.
M2093 Introduction to Computer Science 3.0 a.h.
M2094 Introduction to Computer Science 3.0 a.h.
M2095 Introduction to Computer Science 3.0 a.h.
M2096 Introduction to Computer Science 3.0 a.h.
M2097 Introduction to Computer Science 3.0 a.h.
M2098 Introduction to Computer Science 3.0 a.h.
M2099 Introduction to Computer Science 3.0 a.h.
M2100 Introduction to Computer Science 3.0 a.h.
M2101 Introduction to Computer Science 3.0 a.h.
M2102 Introduction to Computer Science 3.0 a.h.
M2103 Introduction to Computer Science 3.0 a.h.
M2104 Introduction to Computer Science 3.0 a.h.
M2105 Introduction to Computer Science 3.0 a.h.
M2106 Introduction to Computer Science 3.0 a.h.
M2107 Introduction to Computer Science 3.0 a.h.
M2108 Introduction to Computer Science 3.0 a.h.
M2109 Introduction to Computer Science 3.0 a.h.
M2110 Introduction to Computer Science 3.0 a.h.
M2111 Introduction to Computer Science 3.0 a.h.
M2112 Introduction to Computer Science 3.0 a.h.
M2113 Introduction to Computer Science 3.0 a.h.
M2114 Introduction to Computer Science 3.0 a.h.
M2115 Introduction to Computer Science 3.0 a.h.
M2116 Introduction to Computer Science 3.0 a.h.
M2117 Introduction to Computer Science 3.0 a.h.
M2118 Introduction to Computer Science 3.0 a.h.
M2119 Introduction to Computer Science 3.0 a.h.
M2120 Introduction to Computer Science 3.0 a.h.
M2121 Introduction to Computer Science 3.0 a.h.
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M2148 Introduction to Computer Science 3.0 a.h.
M2149 Introduction to Computer Science 3.0 a.h.
M2150 Introduction to Computer Science 3.0 a.h.
M2151 Introduction to Computer Science 3.0 a.h.
M2152 Introduction to Computer Science 3.0 a.h.
M2153 Introduction to Computer Science 3.0 a.h.
M2154 Introduction to Computer Science 3.0 a.h.
M2155 Introduction to Computer Science 3.0 a.h.
M2156 Introduction to Computer Science 3.0 a.h.
M2157 Introduction to Computer Science 3.0 a.h.
M2158 Introduction to Computer Science 3.0 a.h.
M2159 Introduction to Computer Science 3.0 a.h.
M2160 Introduction to Computer Science 3.0 a.h.
M2161 Introduction to Computer Science 3.0 a.h.
M2162 Introduction to Computer Science 3.0 a.h.
M2163 Introduction to Computer Science 3.0 a.h.
M2164 Introduction to Computer Science 3.0 a.h.
M2165 Introduction to Computer Science 3.0 a.h.
M2166 Introduction to Computer Science 3.0 a.h.
M2167 Introduction to Computer Science 3.0 a.h.
M2168 Introduction to Computer Science 3.0 a.h.
M2169 Introduction to Computer Science 3.0 a.h.
M2170 Introduction to Computer Science 3.0 a.h.
M2171 Introduction to Computer Science 3.0 a.h.
M2172 Introduction to Computer Science 3.0 a.h.
M2173 Introduction to Computer Science 3.0 a.h.
M2174 Introduction to Computer Science 3.0 a.h.
M2175 Introduction to Computer Science 3.0 a.h.
M2176 Introduction to Computer Science 3.0 a.h.
M2177 Introduction to Computer Science 3.0 a.h.
M2178 Introduction to Computer Science 3.0 a.h.
Elementary Topics of General Interest

Three courses are open to graduate students except by special arrangement under the department chair.

1. **Elementary Group Theory** (125): Axioms, definition, properties, generalization, cyclic groups, structure of finitely generated abelian groups. Prerequisite: Math 310 or consent of instructor.

2. **Elementary Ring Theory** (126): Rings, ideals, quotient rings, polynomial rings, fields, principal ideal domains, Euclidean domains, the field of fractions of a domain. Prerequisite: Math 310 or consent of instructor.

3. **Elementary Linear Algebra** (128): Vector spaces, subspaces, linear independence, bases, dimension, linear transformations, eigenvalues, and eigenvectors. Prerequisite: Math 310 or consent of instructor.

Undergraduate: Division I


2. **Vector Calculus for Engineers** (242): Calculus of functions of several variables, partial derivatives, multiple integrals, vector calculus. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.


5. **Introduction to Game Theory** (251): Basic concepts, theories, and applications of game theory. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.


8. **Introduction to Number Theory** (254): Divisibility, prime numbers, congruences, Diophantine equations. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.


10. **Introduction to Complex Variables** (256): Complex numbers, analytic functions, Cauchy’s integral theorem, power series, residues. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

11. **Introduction to Real Analysis** (257): Real numbers, sequences and series, continuity, differentiation, Riemann integrals. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

12. **Introduction to Linear Algebra** (258): Vector spaces, linear transformations, matrices, determinants, eigenvalues, and eigenvectors. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

13. **Introduction to Abstract Algebra** (259): Groups, rings, fields, and quotient structures. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.


15. **Introduction to Statistics** (262): Descriptive statistics, confidence intervals, hypothesis testing, regression analysis. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

16. **Introduction to Game Theory** (263): Basic concepts, theories, and applications of game theory. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

17. **Introduction to Mathematical Logic** (264): Propositional calculus, predicate calculus, model theory, proof theory, Gödel’s incompleteness theorems. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.


19. **Introduction to Number Theory** (266): Divisibility, prime numbers, congruences, Diophantine equations. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.


21. **Introduction to Complex Variables** (268): Complex numbers, analytic functions, Cauchy’s integral theorem, power series, residues. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

22. **Introduction to Real Analysis** (269): Real numbers, sequences and series, continuity, differentiation, Riemann integrals. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

23. **Introduction to Linear Algebra** (270): Vector spaces, linear transformations, matrices, determinants, eigenvalues, and eigenvectors. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

24. **Introduction to Abstract Algebra** (271): Groups, rings, fields, and quotient structures. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

25. **Introduction to Probability Theory** (272): Probability axioms, random variables, discrete and continuous distributions, expectation, moments, and limit theorems. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

26. **Introduction to Statistics** (273): Descriptive statistics, confidence intervals, hypothesis testing, regression analysis. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

27. **Introduction to Game Theory** (274): Basic concepts, theories, and applications of game theory. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.


30. **Introduction to Number Theory** (277): Divisibility, prime numbers, congruences, Diophantine equations. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.

31. **Introduction to Topology** (278): Topological spaces, continuous functions, connectedness, compactness, separation axioms. Prerequisite: Math 231 or Math 232 or Math 232. Consult with instructor.
231742 Partial and Vector Algebra (3 s.h.)
Survey of current developments of basic linear algebra techniques for selected parallel and vector machines with applications to the numerical solution of (General) Electric & Controls problems involving the solution of large sparse systems of linear equations. Prerequisites: MATH 2200 and/or MATH 2202, and MATH 5000. Space Computing facility. Permission granted at time of registration and (291774) in class of instructor.

231749 Topics in Applied Analysis (3 s.h.)
Topics in Analysis. The course is devoted to advanced preparation for modern applications of mathematics. Prerequisites: MATH 2202 or equivalent. In class of instructor.

231752 Mathematics of Computer Graphics (3 s.h.)
Shape deformation techniques in two and three dimensions, clipping, hidden line removal, and display of 3-geometric objects, 3-dimensional modeling, 3D animation, and discrete Fourier transformations. Implementations: MATH 2202 or consent of instructor. Knowledge of computer programming is required.

231753 Current Issues in Mathematics (3 s.h.)
Mathematical dilemmas, current positions, advances, and evaluation at current curation levels, special methods. Permission: consent of instructor. Same as 75.202.

231790 Topics in Mathematics (3 s.h.)
Topics are chosen by the department and the instructor. Prerequisites: consent of department or equivalent in other departmental offerings. Permission: consent of instructor.

231797 Industrial Study and Thesis in Mathematics (3 s.h.)
Industrial semester of advisor.

231798 Workshop in Math (3 s.h.)
Intensive two-week program on computer-aided geometric design, differential equations, and fluid mechanics. Emphasis on the computer implementation of these techniques, using microcomputer graphics packages.

231799 Seminar in Mathematics (3 s.h.)
Concurrent consent required.

Core Graduate Courses

231809 Introduction to Differential Topology (3 s.h.)
Introduction to differential manifolds and bundles, locally linear maps, vector fields, differential forms, integration on manifolds, transversality, transverse foliations, basic Morse theory, Morse theory, integration on manifolds. Prerequisites: MATH 2202 or equivalent.

231810 Introduction to Algebraic Topology (3 s.h.)
Basic concepts of algebraic topology, including homotopy, fundamental group, covering spaces, homology, homological algebra, homology, cohomology, cohomological refinement, simplicial homology, singular homology, homological algebra, singular homology, and sheaf cohomology. Prerequisites: MATH 2202 or consent of instructor.

231812 Introduction to Algebra II (3 s.h.)
Advanced topics in commutative algebra, basic ring theory, fields, and Galois theory, basic category theory, advanced ring theory, field theory, Galois theory, and homological algebra. Prerequisites: MATH 2202 or equivalent.

231815 Introduction to Algebra I (3 s.h.)
Algebraic structures for rings and modules, group rings, ideals, homological algebra, basic representation theory, advanced ring theory, field theory, Galois theory. Prerequisites: MATH 2202 or equivalent.

231816 Introduction to Algebra II (3 s.h.)
Fundamentals of the theory of fields for a complex variable, including elementary properties and examples of algebraic and transcendental extensions, complex numbers, polynomials, complex numbers, complex analysis, complex functions. Prerequisites: MATH 2202 or equivalent.

231831 Analysis I (3 s.h.)
Fundamentals of the theory of functions of a real variable, including elementary properties and examples of algebraic and transcendental extensions, complex numbers, polynomials, complex numbers, complex analysis, complex functions. Prerequisites: MATH 2202 or equivalent.

231832 Analysis II (3 s.h.)
Topics in ordinary differential equations. Prerequisites: MATH 2202 or equivalent.

231833 Topics in Ordinary Differential Equations (3 s.h.)
Topics in ordinary differential equations. Prerequisites: MATH 2202 or consent of instructor.

231834 Topics in Partial Differential Equations (3 s.h.)
Topics in partial differential equations. Prerequisites: MATH 2202 or consent of instructor.

231835 Topics in Logic (3 s.h.)
Selected topics including the theory of models, recursion theory, set theory, and algebra. Prerequisites: MATH 2202 or consent of instructor.

231840 Topics in Algebra (3 s.h.)
Selected topics in algebra, including topics in number theory, groups, group representation, rings, algebras, and algebraic theory. Prerequisites: MATH 2202 or consent of instructor.

231841 Topics in Ring Theory (3 s.h.)
Selected topics in the theory of commutative and noncommutative rings, including rings, categories, modules. Prerequisites: MATH 2202 or consent of instructor.

231844 Numerical Analysis (3 s.h.)
Numerical analysis, numerical methods, numerical methods, numerical methods, numerical methods, numerical methods. Prerequisites: MATH 2202 or consent of instructor.

231845 Theory of Probability I (3 s.h.)
Basic concepts, distribution functions, and stochastic processes. Prerequisites: MATH 2202 or consent of instructor.

231846 Theory of Probability II (3 s.h.)
Basic concepts, distribution functions, and stochastic processes. Prerequisites: MATH 2202 or consent of instructor.

231847 Topography in America (3 s.h.)
Selected advanced topics in algebraic topology. Prerequisites: MATH 2202 or consent of instructor.

231848 Seminar in Topological Rings (3 s.h.)
Permission: consent of instructor.

231849 Seminar in Algebra (3 s.h.)
Permission: consent of instructor.

231850 Seminar in Logic and Methodologies of Foundations of Mathematics (3 s.h.)
Permission: consent of instructor.

231851 Seminar in Topology (3 s.h.)
Permission: consent of instructor.

231852 Seminar in Mathematical Physics (3 s.h.)
Prerequisites: MATH 2202 or equivalent. Permission: consent of instructor.

231853 Seminar in Algebraic Topology (3 s.h.)
Prerequisites: MATH 2202 or equivalent. Permission: consent of instructor.

231854 Seminar in Functional Analysis (3 s.h.)
Prerequisites: MATH 2202 or equivalent. Permission: consent of instructor.

231855 Seminar in Partial Differential Equations (3 s.h.)
Prerequisites: MATH 2202 or equivalent. Permission: consent of instructor.

231857 Seminar in Numerical Analysis (3 s.h.)
Prerequisites: MATH 2202 or equivalent. Permission: consent of instructor.

231858 Reading and Research (3 s.h.)
Permission: consent of instructor.

STATISTICS AND ACTUARIAL SCIENCE

Charles J. Tutzer
Professor of Mathematics
The University of Texas at Austin

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Statistics and actuaries build mathematical models for processes that involve random quantities so that they may better understand and perhaps control these processes. For example, statisticians help design and analyze controlled experiments and scientific samples for industry, research, and government. Actuaries work in the insurance industry or as consultants dealing with the risk and uncertainty of potential financial losses. Statisticians and actuaries serve in academic institutions, not only in statistical teaching and research, but in medicine, social sciences, engineering, education, and other fields where modern research techniques are applicable.

Undergraduate Programs

Also see “Division of Mathematical Sciences” in this section of the Course.

Minor

Students can earn a minor in statistics by taking 15 semester hours in statistics courses, 12 of which must be in courses taken at The University of Iowa numbered 225-180 and above.

Bachelor of Science

The Bachelor of Science degree can be earned by taking one of the three programs described here.

Students majoring in these programs may satisfy semester hours of the General Education Requirement in quantitative or formal reasoning.

Actuarial Science

This program is designed to prepare students for the actuarial profession. The requirements correspond to the education and examination programs of the principal actuarial organizations. Additional courses are specified to provide students with a general knowledge of related business topics. The required courses in the program are:

225:1 Introduction to Computing with FORTRAN
or 225:16 Introduction to Programming with Pascal

An approved course in computer programming

225:35-36 Calculus I-II
or 225:45-46 Accelerated Calculus I-II

225:27 Introduction to Linear Algebra
225:28 Calculus III

225:132 Introduction to Probability
225:154 Introduction to Mathematical Statistics

225:150 Methods of Statistical Inference

225:125-136 Actuarial Mathematics I-III
225:177 Numerical Analysis for Actuaries

60:1 Principles of Microeconomics
60:2 Principles of Macroeconomics

225:175-176 Casualty Actuarial Mathematics I-II
or 221:181-182 Life Actuarial Mathematics I-II

At least three from the following:

60:55 Fundamental Properties of Spaces and Functions
60:105 Introduction to Financial Accounting
60:106 Introductory Financial Management
60:105 General Insurance
60:105 Introduction to Marketing
60:47 Introduction to Law
60:190 Administrative Management

Suggested additional courses

225:129 Probability and Statistics (must be taken prior to 225:153 Introduction to Probability)
225:179 Advanced Casualty Insurance Topics
225:190 Advanced Life Insurance Topics
60:131 Property and Liability Insurance
60:122 Life and Health Insurance

Management Science Topics

The required and elective courses should be taken in the following order, in order to complete the program in four years, 225:153 Introduction to Probability must be taken no later than the fall semester of the junior year.

Freshman Year

Fall Semester
225:25 Calculus I
or 225:35 Engineering Calculus I
225:45 Accelerated Calculus I
10:101 Basic

Spring Semester
225:26 Calculus II
or 225:36 Engineering Calculus II
225:46 Accelerated Calculus II
10:201 Basic

Sophomore Year

Fall Semester
225:27 Introduction to Linear Algebra

60:1 Principles of Microeconomics

225:177 Introduction to Computing with FORTRAN
or 225:16 Introduction to Programming with Pascal

225:150 Methods of Statistical Inference

Spring Semester
225:28 Calculus III
60:2 Principles of Macroeconomics

225:129 Probability and Statistics

Junior Year

Fall Semester
225:125 Actuarial Mathematics I

225:153 Introduction to Probability
225:177 Numerical Analysis for Actuaries

Business requirement

Spring Semester
225:135 Actuarial Mathematics II
225:154 Introduction to Mathematical Statistics

60:277 Management Science Topics

Business requirement

Senior Year

Fall Semester
225:150 Methods of Statistical Inference
225:175 Casualty Actuarial Mathematics I
and/or 225:184 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:

225:7 Introduction to Computing with FORTRAN
225:16 Introduction to Programming with Pascal
225:25-26 Calculus I-II
or 225:35-36 Engineering Calculus I-II
225:45-46 Accelerated Calculus I-II
225:27 Introduction to Linear Algebra
225:28 Calculus III
225:152 Regression Analysis
225:154 Introduction to Mathematical Statistics
225:158 Analysis and Design of Experiments I

At least two of the following:

60:163 Introduction to the Design of Sample Surveys
225:156 Applied Time Series Analysis
225:161 Application of Mathematical Statistical Techniques
225:163 Nonparametric Statistical Methods
225:167 Introduction to Stochastic Processes
225:166 Analysis and Design of Experiments II

Students in this program are expected to take at least two additional courses in an area in which statistics is applied, such as geography, business, or science. Students also are expected to learn to use at least one statistical analysis computer package.
Mathematical Statistics

This program is designed to prepare students for graduate study in statistics. The required courses in the program are:

221.1-26 Calculus I-II
or
221.15-26 Engineering Calculus I-II
or
221.45-46 Accelerated Calculus I-II
226.27 Introduction to Linear Algebra
226.28 Calculus III
226.55 Fundamental Properties of Spaces and Functions
224.115 Introduction to Analysis
225.154 Introduction to Mathematical Statistics

At least three of the following:
225.152 Regression Analysis
225.156 Applied Time Series Analysis
225.158 Analysis and Design of Experiments
225.164 Introduction to Discrete Probability Models
225.167 Introduction to Stochastic Processes

Students are encouraged to learn computer programming languages and to take at least four courses in an area in which statistics is an important tool, such as economics or psychology.

Graduate Programs

Master of Science

Each M.S. candidate has a committee of four members, which is responsible for recommending action on the candidate's degree. For nonthesis programs, the candidate's recommendation usually is based on two written examinations on topics covered in the required courses. For thesis programs, the candidate's final recommendation usually is based on an oral examination of the thesis, although it may be based on a single written examination on 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 include on their plan of study any course that they also took as an undergraduate student at The University of Iowa. When an approved pair of 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 225.153-154, 225.155-156, and 281.181-182.

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 by thesis preparation. Specific course requirements for the M.S. programs are given below.

Actuarial Science

Eleven graduate courses are required. These must include:
225.153 Introduction to Probability
225.154 Introduction to Mathematical Statistics
225.156 Methods of Statistical Inference
225.125-126 Actuarial Mathematics I-II
225.157 Numerical Analysis for Actuaries
Four courses from:
*226.175-176 Causality and Survival Analysis
**226.170-172 Life Actuarial Mathematics
*226.179-182 Casualty Insurance Topics
**226.189 Advanced Life Insurance Topics
At least one of the sequences marked (**) must be included. The seventh course may be any course in statistics, management science, or finance approved by the advisor.

Students who have had the equivalent of 225.153-154 at another institution may waive this requirement only if they have passed Course 38 of the Examinations of the Society of Actuaries.

Theoretical Statistics and Probability

226.115 Introduction to Analysis
225.153 Introduction to Probability
225.154 Introduction to Mathematical Statistics
225.167 Introduction to Stochastic Processes
225.201 Theory of Statistics I

At least two of these:
226.164 Introduction to Discrete Probability Models
226.152 Theory of Statistics
226.252 Topics in Statistics
226.253-254 Advanced Analysis I-II
225.201 Linear Models
225.256 Multivariate Analysis
225.204-205 Theory of Probability I-II

Applied Statistics

Without Thesis
226.115 Regression Analysis
225.153 Introduction to Probability
225.154 Introduction to Mathematical Statistics
225.158 Analysis and Design of Experiments
225.173 Data Analysis

At least two of the following:
225.156 Applied Time Series Analysis
225.161 Application of Multivariate Statistical Techniques
225.184 Analysis and Design of Experiments

The remainder of the program consists of at least two additional courses numbered 225-153 or above, and other courses approved by the student’s advisor.

Experience in a computer language such as FORTRAN is required. If students satisfy the requirement by taking a course, that course must be counted toward the M.S. semester-hour requirement.

The applied statistics program is designed to be flexible, so that students may concentrate on an area of application in addition to the required statistics courses. Students should work closely with their advisors in developing programs of study tailored to their specific interests.

With Thesis
225.153 Introduction to Probability
225.154 Introduction to Mathematical Statistics
At least two of these:
226.115 Regression Analysis
225.156 Applied Time Series Analysis
225.158 Analysis and Design of Experiments
225.201 Linear Models
225.256 Multivariate Analysis
225.204-205 Theory of Probability I-II

The remainder of the program consists of at least two additional courses numbered 225-153 or above, and other courses approved by the student’s advisor.

Experience in a computer language such as FORTRAN is required. If students satisfy the requirement by taking a course, that course must be counted toward the M.S. semester-hour requirement.

The typical thesis is a statistical presentation of the results of a meaningful research project in another field, or a study of the development of a new statistical method. It generally requires 3 semester hours of 225.191 Individual Study for two semesters.

Doctor of Philosophy

To satisfy the course requirements for a Ph.D. in statistics, students must successfully complete:
226.211 Analysis I
225.152 Regression Analysis
225.158 Analysis and Design of Experiments
225.167 Introduction to Stochastic Processes
225.173 Data Analysis
225.202-203 Theory of Statistics I-II
Students who expect to request financial assistance for their third year should take the qualifying examination no later than the spring semester of their second year.

The qualifying examination covers introductory probability, mathematical statistics, and regression analysis. These topics generally are covered in 225-152, 225-250, and 225-114.1 Study guides are available from the department. Students who are unsuccessful in their first attempt may repeat the qualifying examination only once.

Students take a comprehensive examination after completing most of the course work in 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 225-201-202, 225-205, and 225-204. 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.

Special Features

Because statistics offers alumni to meet with other statisticians to engage in research projects, it is important that students gain experience in group efforts. The department tries to provide these experiences in several courses.

In addition, the department houses the Statistical Consulting Center, which offers assistance to researchers and students, University community in planning experiments and interpreting the results of experimental data. Under faculty supervision, graduate students may participate in these activities as part of their training.

Although the majority of Statistical Consulting Center projects involve statistical problems arising in thesis research conducted by students in other departments, the center also seeks involvement in larger research projects and proposal writing.

Courses

Primarily for Undergraduates

Students may not receive credit for a Department of Statistics and Actuarial Science course numbered below 110 after receiving credit for one numbered above 110. Students may receive credit in only one course of these: 225-9, 225-8, or 225-24.

225-9 Statistics and Society

Statistical ideas and their relevance to public policy, business, and the social, health, and physical sciences, focus on making statistical inferences; concepts of statistical evidence. Prerequisite: 225-31 or equivalent in course of instruction.

225-16 Quantitative Methodology

Combination of 225-31: descriptive statistics, elementary probability, estimation and testing, regression, and correlation. Prerequisite: 225-11 or equivalent.

225-9 Elementary Statistics and Inference

Descriptive statistics, sampling distributions, significance tests, correlation and regression, analysis of variance. Prerequisite: 225-11 or equivalent. Same as 225-31.

225-31 Probability and Statistics II

Descriptive statistics, regression, correlation, analysis of variance, linear models, factorial analysis of variance, experimental design, nonparametric methods, and multivariate analysis. Prerequisite: 225-11 or equivalent. Same as 225-21.

225-12 Probability and Statistics

Preliminary course on probability and statistical inference. Prerequisites: 225-31 or equivalent. Same as 225-22.

For Undergraduates and Graduates

225-120 Cooperative Education Internship

Prerequisite: 225-31 or equivalent. Same as 225-22.

225-120 Introduction to Statistical Methods

Prerequisite: 225-31 or equivalent. Same as 225-22.

225-128 Multivariate Analysis

Prerequisite: 225-31 or equivalent. Same as 225-22.

225-129 Probability and Statistics

Prerequisite: 225-31 or equivalent. Same as 225-22.
literature and occurrence of microbial life in extreme or unique environments; microbial synthesis and modification of antibiotics; and other natural products; the role of antibiotics in stabilisation of the biotope by recycling and detoxifying waste products; and the genetic and physiological mechanisms of resistance to antibiotics.

Microbiology

Microbiology is an excellent major for undergraduate students who want a good general education with emphasis on an important and interesting branch of biology. For the graduate with a bachelor's degree in microbiology, positions are available in government, hospitals, public health laboratories, research laboratories, and industrial laboratories (food, dairy, chemical, pharmaceutical, and genetic engineering companies).

Students who continue beyond the bachelor's degree have career opportunities in these same areas plus college and university teaching, with greater responsibilities and corresponding 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 (including a 1-hour course in general microbiology) and a B.S. degree. More than 2 semester hours of 161, 1611, 1612, and 1 semester hour of 161.163 Seminar in Microbiology may count toward this requirement.

Students who want to apply for certification by the National Registry of Microbiologists are required to complete 20 semester hours of credit in biology, 20 of which must be in microbiology. Certification is required for employment or advancement in some areas, primarily in diagnostic microbiology.

Students are permitted to take microbiology courses more advanced than 61.165 General Microbiology only if they receive a grade of C or above in 61.165.

Mathematics and science courses required by the departments for the B.S. degree must be taken for letter grades.

Microbiological Seminar (161.165) should be taken for credit only once during the senior year. Students are encouraged to take the course for 6 semester hours credit during other semesters after they have taken 61.167.

Required courses, other than microbiology courses, for microbiology majors include the following:

- 413 Principles of Chemistry I 3 s.h.
- 141 Principles of Chemistry II 3 s.h.
- 145 Principles of Chemistry Lab I 2 s.h.

Undergraduate Program

The ROTC basic course for freshmen and upperclassmen is designed to give basic instruction in the fundamentals of leadership and management plus an introduction to the military role in society and current military organization and capabilities. Military history is highlighted in tracing the development of military principles and doctrine utilized in modern military operations and organizations.

The ROTC advanced course for junior and senior students addresses the dynamics of the organizational leadership from the small group level to large and diversified organizations. Practical instruction in developing individual leadership skills is emphasized. Between the junior and senior years, students attend a 6-week advanced training camp at Fort Lewis, Washington. Selected students also may participate in active army training programs such as Ranger School, Air Assault School, Northern Warfare School, and Airborne Training.

Students who successfully complete the advanced course receive a commission as a second lieutenant in the U.S. Army and are given college credit by the university as a 3 credit-hour course.

Graduate Programs, Faculty Roster, Courses

See "Microbiology" in the "College of Medicine" section of the Catalog.

MILITARY SCIENCE (ARMY ROTC)

Head Instructor Colonel Steven C. Fandrich

Assistant professor: Lawrence E. Boggs

Instructor: Mary S. Matthews (Major), Larry A. West (Captain)

Instructors: Robert F. Beavers (455), Michael L. Jackson (405)

The Department of Military Science is the academic and administrative arm of the Army Reserve Officers Training Corps (ROTC) program at the University of Iowa. Participation in the program is voluntary.

Courses in the program carry credit applicable toward a degree.

Graduate School

Students are accepted as students upon graduation from The University of Iowa. Students are admitted to full or part-time study in the graduate program. Students are admitted to full-time or part-time study in the graduate program. The graduate program is designed to meet the needs of students who wish to pursue advanced study in the field of military science.
Special Programs
The Black Berets is a fraternal organization that engages in intercollegiate military skills competition. Cadets compete for individual, local, and national awards for leadership, academic achievement, athletics, and military proficiency. The department sponsors military-oriented ceremonial and social activities throughout the year, including the Maine Military Ball, a formal dinner called Cadet Corps Dining. It has, and awards ceremony.

Facilities
The department uses seven areas near Iowa City for practical field exercises and military skills instruction. It uses a vanity of military equipment, such as helicopters and PM radios, in practical leadership exercises and in support of field training. Cadets visit Rock Island Arsenal, Rock Island Corps of Engineers District, and Camp Dodge, near Des Moines, to observe army operations and review equipment. Cadets also use the Camp Dodge leadership reaction course, orienteering course, and rappelling facilities.

Financial Aid
Reserve Officers Training Corps (ROTC) scholarships, provide $7,000 to $80 percent of tuition (whichever is greater), allowance for books, laboratory fees, and a $100 per-month tax-free subsistence allowance. They are available to high school seniors and students enrolled in universities for four- or five-year programs. Two- and three-year scholarships are also available. All cadets in the advance course receive a $1,000 per-month tax-free subsistence allowance. Cadets attending summer camps are paid a $1,500 per-month tax-free subsistence allowance. Students are eligible for books for University of Iowa troops for training exercises. Veterans continue to draw the ROTC allowance plus any other benefits to which they are entitled.

Nonenlistment advanced course students also may participate in the Simultaneous Management Program (SMP) with the U.S. Army Reserve or National Guard. SMP cadets earn approximately $2,000 per year in addition to the new GI Bill and serve as officers in guard and reserve units in the local area while attending the University.

Courses
2311 Introduction to the Military 1.5 hr.
A broad overview of the history, organization, and role of the military in the modern world. Development of the modern military services, including the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy. Development of the modern military services, including the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy.

2319 Strategic and Tactical MilitaryAction 1.5 hr.
An introduction to military operations and small unit military training with emphasis on military principles. Emphasis is on military principles, military strategy, military tactics, and military operations. Emphasis on the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy. Development of the modern military services, including the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy.

2346 Strategic and Tactical MilitaryAction 1.5 hr.
An introduction to military operations and small unit military training with emphasis on military principles. Emphasis is on military principles, military strategy, military tactics, and military operations. Emphasis on the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy. Development of the modern military services, including the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy.

2350 Fundamentals of Military Organizations and Operations 2.5 hr.
A course covering the essential elements of 2346, 2319, 2318, and 2344.

2355 Small Unit Leaders 1.5 hr.
An introduction to organizational leadership with emphasis on small unit leadership and small unit operations. Emphasis on the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy. Development of the modern military services, including the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy.

2358 Law and Organizations 1.5 hr.
An introduction to organizational leadership with emphasis on small unit leadership and small unit operations. Emphasis on the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy. Development of the modern military services, including the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy.

2365 Administrative Management 1.5 hr.
An introduction to organizational leadership with emphasis on small unit leadership and small unit operations. Emphasis on the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy. Development of the modern military services, including the role of the military in the United States, the role of the military in foreign and national security policy, and the role of the military in the economy.

2374 Readings in Contemporary Military Issues 1.5 hr.
A course covering the essential elements of 2346, 2319, 2318, and 2344. A course covering the essential elements of 2346, 2319, 2318, and 2344.

2400 Museums Access to Information 2.5 hr.
A course covering the essential elements of 2346, 2319, 2318, and 2344. A course covering the essential elements of 2346, 2319, 2318, and 2344.
Major requirements are:
25.142 Camerata Singers
25.194 Symphony Band/Concert Band/University Band
25.193 University Chorale
25.185 Kantorei—University Choir
25.192 Orchestra

Students may take advanced electives in performance (including chamber music and piano accompanying), theory, composition, music education, music history, music literature, orchestration, and conducting.

Areas of Applied Instruction
Areas of applied instruction are strings, brass, woodwind, percussion, vocal, and keyboard. Students must take at least 17 additional semester hours to be chosen from a list of electives in their applied area. Courses for the respective areas are listed at the end of this section of the Catalog.

Music History Major
In addition to the general requirements for the B.M. degree, a list of course requirements for the music history major is available in the music office.

A senior thesis replaces the recital required of applied music majors; it consists of a paper that demonstrates the student's ability to conduct research.

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 the general education area in which music in Iowa schools requires satisfactory completion of specific requirements in the area of concentration. Requirements in the instrumental and vocal areas are listed below. The general requirements are listed in the "College of Education" section of the Catalog and "Secondary Education." String Majors
In addition to the performance (violin and viola) and vocal requirements taken year of 25.210 Violin: cello and bass majors take one year of 25.210 Violin: 2 s.h.
25.100 Class Strings (viola) take violin and bass; violists take violin and bass; violists take violin and bass; winds take violin and (cello): 2 s.h.
79.143 Instrumental Techniques (normally clarinet and cornet)
2 s.h.
25.107 Techniques of Conducting
2 s.h.
25.108 Instrumental Conducting
2 s.h.
25.110 Strings and Methods
2 s.h.

79.144 Methods and Materials
2 s.h.
79.301 Principles and Laboratory Practice in the Secondary School
6 s.h.
79.192 Special Area Student Teaching
6 s.h.

79.187 Seminar: Curriculum and Student Teaching
1 s.h.

String majors preparing for music teacher certification must pass the proficiency examination of 25.173 Group Instruction in Piano I-II.

Brass, Woodwind, and Percussion Majors
Brass, woodwind, and percussion majors in music education participate in a concert band each semester and in marching band for two fall semesters during the first two years at residence at the University. Students may substitute marching band techniques for marching band with permission of their advisor and the director of bands. Courses required:
75.143 Instrumental Techniques
8 s.h.
25.107 Techniques of Conducting
2 s.h.
25.108 Instrumental Conducting
2 s.h.
25.182 Marching Band Techniques
1 s.h.
25.108 Jazz Band Techniques
1 s.h.

79.144 Methods and Materials: Elementary School Instrumental Music
2 s.h.
79.138 Practicum Band Instrument Care and Repair
1 s.h.
79.140 Band Methods and Materials
3 s.h.
79.191 Observation and Laboratory Practice in the Secondary School
6 s.h.
79.192 Special Area Student Teaching
6 s.h.
79.187 Seminar: Curriculum and Student Teaching
1 s.h.

Students preparing for music teacher certification must pass the proficiency examination of 25.173 Group Instruction in Piano I-II.

Vocal and Keyboard Majors
Vocal performance majors should consult the music office for recommendations.
79.130 Vocal and Adolescent Voice Production
2 s.h.
79.147 Choral Methods
3 s.h.
79.148 Choral Conducting and Literature
3 s.h.
25.107 Techniques of Conducting
2 s.h.
25.115-116 Directed for Singers II
3 s.h.
25.145 Methods and Materials: Elementary School General Music
5 s.h.
25.146 Methods and Materials: Secondary School General Music
3 s.h.
25.101 Observation and Laboratory Practice in the Secondary School
3 s.h.
25.192 Special Area Student Teaching
6 s.h.

79.187 Seminar: Curriculum and Student Teaching
1 s.h.

Vocal and keyboard majors preparing for music teacher certification must pass the proficiency examination of 25.173 Group Instruction in Piano I-II. In addition, keyboard majors should register for 25.171 Non-Major Voice for two semesters. Vocal majors should register for 25.18 Non-Major Piano for two semesters.

Keyboard Majors (Nonvocal)
Keyboard majors who elect to teach in the nonvocal area must complete the requirements in either the brass, woodwind, percussion or string areas and pass the proficiency examination of 25.173 Group Instruction in Piano I-II.

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 the following (8 semester hours):
25.1 Music Duet Theory I
25.2 Music Duet Theory II
Students with limited experiences in music may, if it helps them to register for 25.10 Fundamentals of Music (3 s.h.), attend fall and spring semesters, before registering for 25.12.

Two of the following (4 semester hours):
25.171-72 Group Instruction in Piano I-II (or successful completion of proficiency exams 1 and 2)
25.154 Beginning Folk Guitar
25.17 Non-Major Voice (2 semesters)
25.18 Non-Major Piano (2 semesters)

One of the following (1 semester hour):
25.165 Kantorei—University Choir
25.163 Singers
25.161 Out Good Singers
25.162 University Singers

All students must auditions prior to registering for the ensemble.

Two of the following (6 semester hours):
25.100 World Music I
25.101 World Music II
25.106 History of Black Music
25.13 Masterpieces of Music I
25.14 Masterpieces of Music II

All of the following (5 semester hours):
79.145 Methods and Materials: Elementary School General Music
3 s.h.
79.146 Special Area Student Teaching
2 s.h.
Total: 24 s.h.

Students who want to complete the area of specialization in music without certification endorsement may substitute other courses for 75.112—see advisor's approval.

Jazz Studies Emphasis
Students are admitted to this program only by audition, which occurs after they complete the freshman year. When admitted, they are assigned a jazz studies advisor in addition to their regular faculty adviser. Senior recital and recital attendance requirements are the same as those for the B.M. degree. Course requirements are the
same as those for the B.M. degree plus an additional 28 seminar, lab, and course hours in music courses for performance majors, or an additional 20 seminar 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 academic competence (a grade of C or better) in 25 114 Orientation to Music Therapy. In addition to the core courses in music therapy listed below, specific courses are required in biology, sociology, abnorm psychology, and social psychology.

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 registration with the National Association for Music Therapy and are qualified to sit for the board certification examination. To increase their job opportunities in the education sector, students are encouraged to complete 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 04 Music Therapy Practicum** (three to five 8-week periods; 1.5 credit hours) 3 s.h.
- **25 06 Music Therapy Observation** 3 s.h.
- **25 114 Psychology of Music** 3 s.h.
- **25 115 Behavioral Research in Music** 3 s.h.
- **25 120 Music Therapy Techniques: Group** 3 s.h.
- **25 121 Music Therapy Techniques: Individual** 3 s.h.
- **25 140 Internship in Music Therapy** 2-6 s.h.

**Composition Major**

Applicants must submit samples of creative work for evaluation by the composition faculty. Upon admission to the program, students are assigned a faculty adviser.

Students must complete the general requirements of the Bachelor of Music degree as stated in the Catalog. Beyond these requirements, additional areas of elective are required, including studies in composition, electronic 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 required of applied music majors. It consists of a research paper submitted at the end of the junior year, and a two-semester writing seminar. A number of music activity scholarships are available to qualified undergraduate music majors. For information, write to the School of Music.

**Financial Aid**

A number of music activity scholarships are available to qualified undergraduate music majors. For information, write to the School of Music.

**Minor**

Students may minor in music by completing 15 semester hours in the School of Music. A list of which must be in advanced courses. A complete list of advanced courses is available at the music office. In addition to the Bachelor of Music requirements for completing a minor, only 1 of the 15 semester hours may be applied to the major in music and 1 in ensembles.

**Graduate Programs**

Entering graduate students must take the School of Music admission examination in music theory (harmony, ear training, and counterpoint) and history and literature before registering. The examination is given each session on the two days (excluding Sunday) before registration. Students with deficiencies in theory must register for 25 111 Review Theory. A leader describing the general content of these tests is available from the director’s office. Students in Music, General graduate admission, degree, and examination requirements are stated in the "Graduate College" section of the Catalog.

**Theology Pedagogy Minor**

Candidates for graduate degrees in music may elect a minor in music theory pedagogy by completing the following courses:

- **25 145 Counterpoint before 1600** 3 s.h.
- **25 151 Counterpoint after 1600** 3 s.h.
- **25 234 Observation and Practice** 1 s.h.
- **25 236 Methods and Techniques of Teaching** 1 s.h.

These courses from the following:

- **25 140 Analysis of Music Literature** 1760-1776
- **25 141 Analysis of Music Literature** 1775-1825
- **25 150 Analysis of Music Literature** 1825-1875
- **25 151 Analysis of Music Literature** 1875-1900

**Master of Arts**

The Master of Arts with thesis is offered in performance (including conducting), composition, music theory and music history, and music education. The Master of Arts without thesis is offered in music education and instrumental or vocal pedagogy, including accompanying. Both require a minimum of 36-32 postbaccalaureate
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 48 postbaccalaureate semester hours. 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 (25-402 M.F.A. Thesis), for which a minimum of 8 semester hours of credit are granted. Students must 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 completed entirely within 48 semester hours of graduate credit (see the "Graduate College" section of the Course for further details.)

Doctoral Degrees
General Requirements
All doctoral study in music includes:
Minimum course requirements listed under the M.A. degree.
One or more additional electives from the following: 25-141, 25-147, 25-148-152, 25-212.
One or more additional courses in the history of music chosen from those listed in the master's degree requirements: 25-225 Musical Acoustics or equivalent.
Reading proficiency in at least one foreign language (must be completed before comprehensive examination; music education students may substitute two courses in statistics for this requirement); and Dissertation.
Doctoral students must participate in a major ensemble during each term of their registration unless excused by their advisor (see list of major ensembles in this section of the Catalog), During the summer sessions, students should be available for ensemble participation as needed. Keyboard majors may substitute some as a major accomplishment in place of a major ensemble, at the advisor's discretion.

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. Voice students may substitute the execution of one or more major roles in a large-scale work for one of their recitals. Conductors present two programs.

D.M.A. candidates also must complete a scholarly investigation of limited scope in a written essay.

Admission
Before students are considered for admission to a doctoral program, they must have submitted supporting materials in their indicated area of concentration, as follows:
Composition—representative musical scores
Theory—analyzes or research papers
Music education—letters of recommendation
Performance—including conducting—audition
Musicology—research papers, theses
Pedagogy—contact School of Music

Graduate Awards
Qualified graduate students are invited to apply for teaching and research assistantships that 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 exceptional interest in it include 25-133-14 Masterpieces of Music; 25-136 Eighteenth- and Nineteenth-Century Composers: 26-140 Early Eighteenth- and Twentieth-Century Composers: the sequence 26-165-164 World Music 1-2, for students interested in non-Western music; and 26-150 Fundamentals of Music. 26-144 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. It began in 1966 with a grant from The
Music

Music and Technology

See also 225-250: Experimental Studio I and II and 225-250: Multimedia III under "Composition." 

25114 History of Jazz

25115 Jazz Band Techniques and Pedagogy

25117 Jazz Improvisation III

25121 Small Jazz Ensembles

25122 Jazz Composition and Arranging III

Music Technology

25133 Fundamentals of Plane Technology

25142 Recording Techniques

25146 Audio and Technology

25149 Music for Technology

25152 Studio Music: Audio Recording

25156 Musical Acoustics

Research and Literature

25140 Seminar: Percussion Methods

25150 History of Organ Building and Design

25160 Organ Literature

25162 Organ Literature

25163 Organ Literature

25164 Organ Literature

Sacred Music

25165 Sacred Music of Church Music

Jazz Studies

25166 Advanced Jazz Improvisation I

25168 Advanced Jazz Improvisation II

25170 Advanced Jazz Composition and Arranging I

25172 Advanced Jazz Composition and Arranging II

25174 History of Jazz

25132 Major Composers...
Minor Field

Instructor for the 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 lecture or two hours of class instruction weekly, at option of instructor.

Undergraduate Non-Major

25.570 Major String Base
25.571 Major Flat
25.572 Major Oboe
25.573 Major Clarinet
25.574 Major Bassoon
25.575 Major Saxophone
25.576 Major Horn
25.577 Major Trumpet
25.578 Major Trombone
25.579 Major Euphonium
25.579 Major Tuba
25.580 Major Percussion

Ensembles

No fee is charged for ensemble courses. Courses may be repeated. Pre-requisites: consent of instructor.

See also 25.570 Multi-Media I under "Theory and Composition in this course listing.

25.140 Chamber Singers
25.141 Old Gold Singers
25.142 Chamber Orchestra
25.144 Collegian Men's Choir
25.145 Kantorei/University Choir
25.146 Piano Accompaniment
25.147 Piano Ensemble on Music
25.148 String Chamber Music
25.149 Wind Ensemble Music
Preparation and performance of representative literature by standard and advanced chamber groups. Sections for woodwinds, brass, and percussion.
25.191 University Chorus
25.192 Orchestra
25.193 Marching Band
25.194 Symphony Band/Concert Band
25.195 Percussion Ensemble

Opere

25.160 Opera Theatre Production
25.161 Opera Theatre Performance
25.162 Opera Theatre Performance
25.163 Opera Theatre Production
25.164 Opera Theatre Production
25.165 Opera Theatre Performance
25.166 Opera Theatre Performance

Undergraduate Program

Undergraduate courses in philosophy are designed to impart knowledge of fundamental issues and main developments in philosophy while strengthening critical and analytic skills. A major in philosophy develops abilities useful for graduate or professional work in many fields—law, for example—and for any situation requiring clear, systematic thinking. A graduate degree is necessary for college teaching in philosophy.

Bachelors of Arts

The Bachelor of Arts degree requires at least 21 semester hours of credit in courses numbered between 26.82 through 26.98 and must include 26.139 Introduction to Symbolic Logic, 26.111 Ancient Philosophy, and 26.114 Modern Philosophy: Descartes through Kant.

The final 12 semester hours of philosophy courses used to complete the departmental requirements must be taken at The University of Iowa. Undergraduate majors in philosophy are exempted from three semester hours of the liberal arts General Education Requirement in historical perspectives.

In addition to the prerequisites listed for individual courses, considerations such as the order in which historical courses are taken are relevant to the effective structuring of a major's undergraduate studies can provide more information.

Minor

In order to achieve a minor in philosophy, a student must complete a minimum of 15 semester hours of 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 at the Department of Philosophy at The University of Iowa. The director of undergraduate studies can provide more information.
The Division of Physical Education consists of four academic departments—dance, exercise science, intramural and recreational sports, and sport pedagogy and coaching. Each department or program has a separate section in the Catalog that describes its program requirements and course offerings.

Courses
118:1 Physical Education Elective
118:2 Physical Education Elective

PHYSICAL EDUCATION SKILLS

DANCE
Chair: Francois Martinott
Associate professors: Alice Brown, Francois Martinott, Susan Robinson
Instructing professors: David Berkey, Helen Oertel, Susan Robinson
Visiting assistant professors: Linda Cline, Lillian King

AA:100 Dance History
AA:101 Dance History
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Dance Electives

Required Courses

Required Dance Theory
137-19 Introduction to Dance
3 s.h.
137-26 Dance Production
3 s.h.
137-29 Rhythmic Analysis of Dance
3 s.h.
137-114 Dance History: From Primitive Through the Twentieth-Century Dance
3 s.h.
137-117 Becoming Laboratory 3 s.h.

Required Studio Courses (Nontheatre)
137-11 Conception I
2 s.h.
137-12 Conception II
2 s.h.
137-13 Conception III
2 s.h.
137-14 Conception IV
2 s.h.
137-81 Dance Performance 4 s.h.

Dance Electives
Four semester hours from dance electives listed under B.A. requirements.

Required Studio Technique

Thirteen-one semester hour classes from the following:

137-5 Tap 2 s.h.
137-6 Contemporary Tap 2 s.h.
137-9 Modern Dance I 1-2 s.h.
137-10 Beginning Ballet 2 s.h.
137-11 Beginning Ballet 2 s.h.
137-12 Low Intermediate Ballet 2 s.h.
137-14 Intensive Training for the Male Dancer 2 s.h.
137-15 Major I 1-2 s.h.
137-30 Beginning Jazz 2 s.h.
137-31 Continuous Jazz 2 s.h.
137-32 Low Intermediate Jazz 2 s.h.
137-33 Beginning Modern Dance 2 s.h.
137-34 Contemporary Modern Dance 2 s.h.
137-32 Low Intermediate Modern Dance 2 s.h.
137-107 Major Modern Dance II 1-3 s.h.
137-108 Major Modern Dance III 1-3 s.h.
137-109 Major Ballet II 1-3 s.h.
137-111 Major Ballet III 1-3 s.h.

Required Nondepartmental Courses

28-80 Anatomy 3 s.h.
28-81 Kinesiology 3 s.h.
25-250 Open Dance Theatre Production 8 s.h.

Bachelor of Fine Arts

In contrast to the B.A. degree in dance, the B.F.A. degree requires 16 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 having completed a minimum of 20 semester hours at The University of Iowa. The dance department faculty will admit to the B.F.A. degree curriculum only those students who have achieved the equivalent of "very good" technique level and show academic and professional promise. Students seeking the B.F.A. in dance may waive three semester hours of the General Education requirement in natural sciences (crystallography) and four semester hours of the General Education Requirement in physical education.

Graduate Program

Master of Fine Arts

Students who demonstrate exceptional ability in dance technique and choreography may apply for admission to the M.F.A. degree program. Admission is based on an interview, a teaching and technique audition, review of videotaped choreographic work, and letters of recommendation. The M.F.A. degree program is designed to be completed in six to seven semesters, evidence to the contrary notwithstanding.

Prerequisites

Advanced technique in all major dance forms

Dance Production
3 s.h.

Dance History
3 s.h.

Anatomy
3 s.h.

Kinesiology
3 s.h.

Beginning Laboratory
3 s.h.

Composition 1-2
4 s.h.

Graduate School

Primarily for Undergraduates

120-50 Cooperative Education Internship 0 s.h.
127-10 Tap instructed for beginners. May be repeated 2 s.h.
127-26 Contemporary Tap instructed for beginners. May be repeated 2 s.h.
127-12 Major Modern Dance I instructed for beginners. May be repeated 2 s.h.
127-13 Beginning Ballet instructed for beginners. May be repeated 2 s.h.
127-11 Major Ballet I instructed for beginners. May be repeated 2 s.h.
127-10 Ballet instructed for beginners. May be repeated 2 s.h.
127-15 Beginning Jazz instructed for beginners. May be repeated 2 s.h.
127-11 Beginning Tap instructed for beginners. May be repeated 2 s.h.
127-10 Contemporary instructed for beginners. May be repeated 2 s.h.
127-12 Modern instructed for beginners. May be repeated 2 s.h.
The following courses should be completed prior to the senior year.

27.156 Gross Anatomy for Exercise Science
27.157 Gross Anatomy Lab for Exercise Science
27.161 Biomechanics of Human Motion
27.141 Exercise Physiology
27.142 Exercise Physiology Laboratory
27.160 Principles of Motor Learning and Control

Course electives for the 15 semester hours are indispensable in exercise science are listed below.

**Anatomy Specialization**

27.105 Advanced Anatomy and Kinesiology 2 s.h.
27.155 Human Muscle Biology 2 s.h.
27.157 The Qualitative Analysis of Human Motion 3 s.h.
27.160 Natal Basis of Movement 3 s.h.
27.166 Exercise Science Senior Seminar 2-3 s.h.
27.122 Cell, Tissue, and Organ Biology 5 s.h.
27.253 Laboratory in Advanced Anatomy 6 s.h.

Preprofessional students should take the following in place of 27.253 Advanced Anatomy Laboratory.

27.150 Introductory Endocrinology and 2 s.h.
27.152 Endocrinology Laboratory 2 s.h.

**Biomechanics Specialization**

27.171 Statics 2 s.h.
226.521 Calculus II 4 s.h.
226.536 Engineering Calculus II 4 s.h.
27.155 Human Muscle Biology 3 s.h.
27.157 The Qualitative Analysis of Human Motion 3 s.h.
27.196 Exercise Science Senior Seminar 2-3 s.h.
27.171 Mechanics of Deformable Bodies 3 s.h.

**Exercise Physiology Specialization**

4.121 Organic Chemistry I 3 s.h.
4.122 Organic Chemistry II 3 s.h.
27.155 skeletal Muscle Biology 3 s.h.
27.160 Neural Basis of Movement 3 s.h.
27.196 Exercise Science Senior Seminar 2-3 s.h.
27.159 Introductory Endocrinology 2 s.h.
27.152 Endocrinology Laboratory 2 s.h.
99.171 Biochemistry 3 s.h.

**Musculo-Skeletal Specialization**

27.153 Advanced Anatomy and Kinesiology 3 s.h.
27.155 Skeletal Muscle Biology 3 s.h.
27.157 The Qualitative Analysis of Human Motion 3 s.h.
27.196 Neural Basis of Movement 3 s.h.
27.196 Exercise Science Senior Seminar 3-5 s.h.

27.112 Cell, Tissue, and Organ Biology 5 s.h.
27.186 Introduction to the Neurosciences 3 s.h.

**Bachelor of Science in Physical Education with Teacher Certification**

The degree requires the following courses in physical education:

28.16 Orientation to Physical Education 0-1 s.h.
27.111 Introduction to Physical Education 4 s.h.
27.156 First Aid and Emergency Care 2 s.h.
27.80 Anatomy 3 s.h.
27.53 Human Anatomy 3 s.h.
27.153 Biomechanics of Physical Education 3 s.h.
27.132 Human Physiology 4 s.h.
27.105 Physical Education for the Handicapped 3 s.h.
27.196 Administration of Physical Education and Athletics 2 s.h.
27.103 Administration and Curriculum in Physical Education 3 s.h.
28.18 Contemporary Issues of Health Education 3 s.h.
27.198 Teaching Motor Skills 2 s.h.
26.083 Physio-Social Dimensions of Sport 3 s.h.
27.192 Human Growth and Motor Development 2 s.h.
15.211 Growth and Motor Development 2 s.h.
27.21 Skill Component in Physical Education I 2 s.h.
27.22 Skill Component in Physical Education II 2 s.h.
27.53 Skill Component in Physical Education III 3 s.h.
Teaching certification majors who want to qualify for the athletics coaching endorsement are required to take the following two courses:
27.27 Basic Athletic Training 3 s.h.
75.198 Coaching Methods 3 s.h.
Professional education courses required for teacher certification are:
76.72 Methods and Materials: Elementary School Physical Education 3 s.h.
76.75 Educational Psychology and Measurement 3 s.h.
75.78 Instructional Strategies and Designs in Physical Education 3 s.h.
75.52 Introduction to Microcomputing for Teachers 3 s.h.
27.100 Issues in Education 3 s.h.
27.146 Methods of Secondary Physical Education 3 s.h.

27.170 Human Relations for the Classroom Teacher 3 s.h.
75.167 Seminar: Curriculum and Student Teaching 3 s.h.
75.192 Observation and Laboratory Practice in the Secondary School 6 s.h.
76.167 Special Area Student Teaching 6 s.h.

**Bachelor of Science in Physical Education without Teacher Certification**

The Bachelor of Science degree in physical education without certification is offered either as a general major or as a major with emphasis in business, fitness-wellness, or athletic training.

Students must complete the following core requirements plus additional courses in the selected emphasis. Athletic training program students are exempt from the core requirements.

27.21 Skill Component in Physical Education I 2 s.h.
27.22 Skill Component in Physical Education II 2 s.h.
27.23 Skill Component in Physical Education III 4 s.h.
27.53 Human Anatomy 3 s.h.
27.56 First Aid and Emergency Care 2 s.h.
27.27 Basic Athletic Training 3 s.h.
27.15 Biomechanics of Physical Education 3 s.h.
27.188 Teaching Motor Skills 2 s.h.
27.140 Human Growth and Motor Development 3 s.h.
27.140 Exercise Physiology for Practitioners 3 s.h.
27.150 Human Physiology 4 s.h.

**General Major**

Students who elect the general major in physical education without teacher certification must complete the core requirements listed above and the following courses:
27.23 Administration and Curriculum in Physical Education 3 s.h.
27.343 Physical Education for the Handicapped 3 s.h.
26.083 Physio-Social Dimensions of Sport 3 s.h.
28.18 Contemporary Issues of Health Education 3 s.h.

**Business Emphasis**

Students who elect the physical education degree programs with business emphasis must complete the core requirements for physical education. 14 semester hours of approved courses in the College of Business Administration, an internship, and the following courses:
17.41 Introduction to Nutrition 3 s.h.
75.167 Seminar: Curriculum and Student Teaching 3 s.h.

**Fitness-Wellness Emphasis**

Students electing the physical education degree programs with physical fitness-
wellness emphasis must complete the core requirements in physical education, an internship, and the following courses:
Liberal Arts • Exercise Science

17.41 Introductory Nutrition 3 s.h.
27.186 the Encyclopedia of Coaching 3 s.h.
27.112 Physical Activity and Aging 3 s.h.
27.140 Exercise Physiology for Practitioners 3 s.h.
26.104 Fitness for Adults 3 s.h.
28.142 Contemporary Issues of Health Education 3 s.h.
71.129 Drugs: Their Nature, Action, and Use 2 s.h.

Athletic Training Emphasis
This program provides specialized training for students who wish to concentrate their studies in athletic training and become certified athletic trainers. It meets the certification standards of the National Athletic Trainers Association. Employment opportunities include being a trainer for a professional team or a college or secondary school. Students who may elect to complete professional internship courses to qualify for certification as a secondary school teacher.

Students are admitted to the program and begin clinical experience as juniors. Before being considered for admission, students must be certified as a first aid and CPR. They also must complete at least one college-level course in the following content areas: college mathematics, human anatomy, introductory psychology, chemistry, physics, animal biology, introductory athletic training, and human growth and development.

Program requirements include:
17.199 Counseling for Related Professions 3 s.h.
17.41 Introductory Nutrition 3 s.h.
28.142 Contemporary Issues in Health Education 3 s.h.
71.129 Drugs: Their Nature, Action, and Use 2 s.h.
72.130 Human Physiology 4 s.h.
27.140/141 Exercise Physiology 3 s.h.
27.186/180 Neurological Care 3 s.h.
27.1001/02 Biomechanics 3 s.h.
27.171 Medical Supervision of Athletics 3 s.h.
27.182 Exercise Sciences in Athletic Training 3 s.h.
27.183 Clinical Sciences in Athletic Training 3 s.h.
27.184 Seminar in Athletic Training 9 s.h.
27.127 Laboratory in Advanced Anatomy 6 s.h.

*Enrollment is limited to students formally admitted to the athletic training education program.

Minor in Physical Education
The minor in physical education requires a minimum of 15 semester hours. Students

are required to take the following five courses:
27.186 Exercise and Aerobics in Physical Education 3 s.h.
27.110 Human Growth and Motor Development 2 s.h.
27.131 Biomechanics of Physical Education 3 s.h.
27.186 Teaching Motor Skills 3 s.h.
27.140 Exercise Physiology for Practitioners 3 s.h.

Students may elect additional semester hours from the following to complete minor requirements:
27.53 Human Anatomy 3 s.h.
27.83 Psycho-Social Dimensions of Sport 3 s.h.
27.167 Measurement and Evaluation in Physical Education 3 s.h.

Athletic Coaching Endorsement
The Iowa Department of Education requires that athletic coaches be certified. The following program has been approved by the Department of Education.
27.53 Human Anatomy 3 s.h.
28.40 Anatomy 3 s.h.
27.16 First Aid and Emergency Care 2 s.h.
27.57 Basic Athletic Training 3 s.h.
27.711 Growth and Motor Development 2 s.h.
28.1 Human Growth and Motor Development 2 s.h.
27.140 Exercise Physiology for Practitioners 3 s.h.
27.92 Physiology of Exercise 2 s.h.
27.103 Administration and Curriculum in Physical Education 3 s.h.
27.124 Administration of Physical Education and Athletics 2 s.h.
76.18 Coaching Practicum 4 s.h.
28.44 Theory of Coaching 2 s.h.
or any one of the following:
27.53 Coaching of Football 2 s.h.
27.54 Coaching of Basketball 2 s.h.
27.55 Coaching of Track and Field Athletics 2 s.h.
27.56 Coaching of Wrestling 2 s.h.
27.57 Coaching of Competitive Swimming 2 s.h.
27.58 Coaching of Wrestling 2 s.h.

Graduate Programs
Master of Arts without Thesis
The program leading to the M.A. degree without thesis is designed as a terminal unit of advanced study for physical

education teachers and for athletics coaches. Emphasis is on applying research findings to the organization, teaching, and evaluation of basic physical education programs for all students in schools and colleges, and to coaching intercollegiate and intramural athletic teams. The program focuses on problems associated with teaching and coaching in public schools and community colleges. The following undergraduate course work is required background for the nonthesis M.A. program in physical education.

Human anatomy 3 s.h.
Human physiology 3 s.h.
Physical health (or equivalent) 2 s.h.
Administration of physical education and athletics 2 s.h.
Methods in physical education 2 s.h.
Practical teaching (or equivalent) 3 s.h.
Teaching skills in physical education 4 s.h.
Coaching a sport 1 s.h.
Election from physical education and related areas 11 s.h.

Total 30 s.h.
For the M.A. degree without thesis, students must complete a minimum of 30 semester hours. At least 24 must be in physical education, including 27.101 Non-Thesis Setting, and at least one course must be chosen from each of these three groups:
27.101 Physical Education for the Handicapped 3 s.h.
or
27.167 Measurement and Evaluation in Physical Education 3 s.h.
27.242 Supervision of Physical Education 3 s.h.
or
27.221 pupil School Curriculum in Physical Education 2 s.h.
27.121 The Qualitative Analysis of Human Movement 3 s.h.
or
27.140 Exercise Physiology for Practitioners 3 s.h.

Master of Arts with Thesis
The thesis program leading to the M.A. degree in exercise science or physical education is designed primarily as a first step in graduate study leading to the Ph.D. It also provides advanced preparation for persons who are teaching or who intend to teach undergraduate physical education in four-year colleges, but do not plan to pursue doctorates.

The thesis program for the M.A. degree in exercise science or physical education is a research-oriented program. It involves students to the securing and extent of research in exercise science and physical education, and gives them an opportunity to specialize in an area of interest.

Because the M.A. degree with thesis is regarded as the first step toward the Ph.D. degree in one of nine areas of specialization, the undergraduate coursework work required depends on the area in
which the candidate intends to specialize for doctoral study. Specific courses in
mathematics, chemistry, physics, biology, physiology, or psychology are required in
some areas of specialization. These courses must be approved by the M.A. adviser
and the program in charge of the emphasis
area selected by the candidate.

The following courses are required for the
M.A. degree with thesis:

Two courses outside one area of
specialization, from the following:

27.414 Exercise Physiology
3 s.h.
27.412 Exercise Physiology
1 s.h.
27.413 Advanced Anatomy and
Kinesiology
2 s.h.
27.197 Biomechanics of Human
Motion
4 s.h.
27.405 Adapted Physical Education,
Special Topics and Research
3 s.h.
27.435 Supervision of Physical
Education
1 s.h.
27.262 Advanced Measurement and
Evaluation in Physical Education
1 s.h.
27.335 Seminar in Research Models
and Theory in Physical
Education Curriculum
3 s.h.
27.407 Senior Research Writing
2 s.h.

Two courses related to basic research
techniques, from the following:

70.143 Introduction to Statistical
Methods
3 s.h.
63.601 Introduction to Biostatistics
3 s.h.
27.310 Introduction to Computing
with FORTRAN
2 s.h.
73.248 Data Processing
3 s.h.

Specialization area:

27.404 Thesis M.A.
1 s.h.

Specialization courses approved by
adviser
5-7 s.h.
Electives
4 s.h.

Total
30 s.h.

Doctor of Philosophy

Admission

Admission to the Ph.D. program is based on
positive grade-point average on work
completed for the M.A. or M.S. degree and
on their score on the Graduate Record
Examination (GRE) General Test. To be
considered for admission, students must
have earned a grade-point average of 3.00
or higher on all graduate work.

For admission to the Ph.D. program in
therapeutics, applicants must be graduates
of an approved professional program in
physical therapy and must hold a master’s
degree, which must be in physical
therapeutics. Deadlines for admission
applications are October 15, March 15, and
May 15. Admission is made approximately
two months after the respective application
deadline.

Requirements

Ph.D. candidates should have a general
knowledge of all areas in exercise support
and physical education, a working
knowledge of research techniques applicable
to problems in the field, and in-depth knowledge
in at least one area of specialization in exercise science or
physical education.

Specialization areas offered include adapted
physical education, administration and
supervision in physical education, anatomy,
biochemistry, curriculum in physical education,
exercise physiology, measurements, and evaluation in
physical education, mental control, and therapeutic
kinesiology.

The thesis program for the M.A. degree,
together with the Ph.D. core courses, provide
the required background for the
Ph.D. candidate’s specialization. Candidates
must complete at least 30 semester hours of
graduate study in their specialization;

specialization, must write a dissertation on a problem in
that area, and must submit the dissertation
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.
Professors from these departments participate in writing and evaluating
comprehensive examinations, serve on
thesis committees for the initial
guidance of the candidate’s proposed
problem, and participate in the final oral
evaluation, in which candidates defend
dissertations.

In addition to writing a comprehensive
examination on a topic in exercise science
or physical education, candidates who
graduate in exercise physiology are
required to pass a comprehensive examination prepared
and evaluated by faculty members of the
Department of Physiology and Biophysics
in the College of Medicine. These
candidates graduate with minors in
physiology.

The Ph.D. core requirements include:

27.465 Thesis Ph.D.
12 s.h.
27.242 Selected Application of
Statistical Techniques
3 s.h.
73.403 Intermediate Statistical
Methods
4 s.h.
63.162 Design and Analysis of
Experiments in Biomedical
Sciences
3 s.h.
27.202 Practicum in College
Teaching

27.258 Data Processing
3 s.h.

27.162 Introduction to Computing
with FORTRAN
2 s.h.

Candidates must complete a minimum of
38 semester hours of required and elective
courses in their specialization. The
required courses for each area of
specialization are as follows:

Adapted Physical Education
70.230 Exceptional Persons
3 s.h.
27.240 Research
3 s.h.

27.214 Adapted Physical Education:
Special Topics and Research
3 s.h.
60.108 Human Anatomy
4 s.h.

Administration and Supervision in
Physical Education
27.242 Supervision of Physical
Education
3 s.h.
70.201 Foundations of School
Administration
3 s.h.
27.231 Research
4 s.h.
27.267 Advanced Administration of
Physical Education
3 s.h.
27.227 Advanced Administration of
Physical Education
3 s.h.

Anatomy
27.205 Laboratory in Advanced
Anatomy
6 s.h.
27.217 Developmental Anatomy
4 s.h.
60.214 Neuroanatomy
2 s.h.
27.112 Cell, Tissue, and
Organ System
5 s.h.
27.201 Practicum in College
Teaching
2-6 s.h.

27.100 Advanced Anatomy and
Kinesiology
2 s.h.
27.295 Electromyography in
Kinesiology and Biomechanics
3 s.h.
59.110 Biochemistry
3 s.h.

Biomechanics
57.15 Mechanics of Deformable
Bodies
3 s.h.
57.20 Mechanics of Fluids and
Transfer Processes
4 s.h.
57.21 Principles of Design I
3 s.h.
58.01 Intermediate Dynamics
3 s.h.
60.108 Human Anatomy
4 s.h.
27.253 Laboratory in Advanced
Anatomy
6 s.h.
27.255 Electromyography in
Kinesiology and Biomechanics
3 s.h.
27.257 Research Techniques in
Biomechanics
4 s.h.
19.212 Biological Instrumentation
3 s.h.

Curriculum in Physical Education
70.100 Design and Organization
of Curricula
3 s.h.
27.291 Secondary School
Curriculum
3 s.h.
70.103 Introduction to Theories of
Leisure Learning
3 s.h.
27.231 Research
6 s.h.

Exercise Physiology
27.232 Collateral, Team, and Organ
Biology
5 s.h.
60.205 General Pathology for
Graduate Students
4 s.h.
27.152 Exercise Physiology
3 s.h.
27.152 Endocrinology Lab-091
2 s.h.
71.055 Pharmacology for Health
Sciences Medical
5 s.h.
27.212 Medical Physiology
6 s.h.

Exercise Science • Liberal Arts
options. Applicants are admitted from the departmental office.

Requirements
Students must take 22 semester hours of core courses, including:

104-06 Leisure in Contemporary Society
104-07 Recreational Leadership and Programming
104-08 Leisure Research
104-09 Introduction to Therapeutic Recreation
104-10 Administration of Recreation
104-11 Internship in Recreation
104-12 Internship in Business First aid and emergency care (if equivalent)

Students may take 9-15 semester hours of coursework in one of the areas of concentration described below.

Community Recreation
The community recreation concentration is designed for students preparing for positions in which they will be responsible for organizing and administering recreation programs, facilities, and departments. This concentration is intended primarily for municipal, district, and volunteer recreation and park departments.

Core requirements for this area of concentration include:

104-13 Park and Recreation Facility Management
104-14 Introduction to Planning and Design of Recreation and Park Areas and Facilities
Three courses selected with adviser

Therapeutic Recreation
Therapeutic recreation focuses on preparing students to become special educators, volunteers, and leisure program leaders in therapeutic and corrective settings for people who are ill, handicapped, aged disabled, and disadvantaged.

Courses required for this concentration include:

104-12 Orientation to Special Populations
104-16 Law of Therapeutic Recreation in Rehabilitation

Three to six courses, selected with the adviser, that satisfy professional certification requirements set by the National Council for Therapeutic Recreation Certification.

Leisure Studies
The leisure studies concentration is designed for students preparing for graduate work or who have a major interest in leisure research or leisure in a contemporary social context. It is the study of leisure itself, and makes the maximum use of courses outside the Department of Leisure Studies. Together, the student and adviser choose the leisure studies concentration according to individual needs.

Commercial/Industrial
The commercial/industrial track is the minor emphasis area. Students seeking career in commercial recreation operating, such as health club and drug stores, retail stores of recreation goods or services, or recreation-related businesses, will find this specialization well-suited to their needs. These interested in industrial recreation, the principles of recreational leisure and opportunities for employees by the employer, will also find this specialization appropriate. Students are urged to select a major in business, business, and health-related areas.

Courts required for this area of concentration are:

104-18 Health Promotion in Corporate, Hospital, and Private Settings
104-18 Managing the Commercial Recreation Enterprise

Three courses selected with adviser

Internship Opportunities
The leisure studies department places special emphasis on practical experience and study involving student with the profession and practitioners. Students are encouraged to attend state and national professional conferences, and many travel in the professional area to lecture by working professionals as well as opportunities for field experience related to course content.

The practical experience is completed by a professional internship for a full semester in an agency related to the student's area of concentration. The internship is designed to lead to professional placement.

Social Service, Public Health, Social Work, and National Recreation and Park Department, departments, agencies, and services provide the paid work and internship opportunities for students in the departments.

Honors
Admission to the honors program is special requirement and an application, completion of at least 10 semester hours of course work at the University of Iowa, completion of at least 9 of the 14 semester hours of required course work, and a grade-point average that is equivalent to the cumulative requirement of the College of Liberal Arts Honors Program. To graduate with honors in recreation administration, students must successfully complete at least 15 semester hours of courses work. With the permission of the chair, up to 3 semester hours of honors work in another department.

Minor
Students wishing to minor in leisure studies may do so by completing a minimum of 15

Graduate Program
The master's program is designed to prepare students for administrative, supervisory, and teaching positions in recreational therapy and therapy-related areas. It offers a major emphasis in public, commercial, and recreational recreation, and therapeutic recreation administration. It may be taken with the special (5 semester hour) or without (36 semester hours). An introduction to socially active and active recreation is provided through 104-01 Leisure Studies and preparation of a thesis of project.

Public, Private, and Commercial Recreation
This area focuses on the development and administration of recreational programs in settings such as municipal, recreation, special service agencies, churches, armed forces, state and federal agencies, industries, and private organizations. Administration and management are central to this area of study. To support the emphasis, the program draws heavily from other disciplines such as public administration, urban and regional planning, psychology, sociological geography, and business administration.

Therapeutic Recreation Administration
Therapeutic recreation requires the development and administration of programs moving the literally retarded, physically disabled, emotionally disturbed, and aged to community settings.

The program is designed to lead to understanding recreation's role in a comprehensive rehabilitation process, including both individual and community factors, that prepares the student to work within a broad range of disability areas in either setting. Utilization of a related area course, strengths in specific disability areas may be developed.

Unendowed preparation in leisure studies is not essential to successful accomplishment of the major's program. Hence, prospective students from these backgrounds are encouraged to apply.

Financial Aid
Assistance for graduate students is available in the form of research assistantships and teaching assistantships. Students may apply for assistance through the department.
Teacher Education Program

Physical Education Requirements
28:19 Orientation to Physical Education or 28:14 Orientation to Physical Education 0.5-1.0 s.h.

28:21 Advanced First Aid and CPR (or Red Cross Certification) 2.0 s.h.

28:40 Anatomy 3.0 s.h.

27:101 Biomechanics of Physical Education 3.0 s.h.

28:62 Measurement 3.0 s.h.

28:106 Physiology of Exercise or 27:141 Exercise Physiology (prerequisite, 27:130) 3.0 s.h.

27:105 Physical Education for the Handicapped 3.0 s.h.

28:120 Administration of Physical Education and Athletics 2.0 s.h.

27:103 Administration and Curriculum in Physical Education 3.0 s.h.

28:142 Contemporary Issues of Health Education 3.0 s.h.

Skill Techniques Requirements
Physical Education Majors must complete the following requirements: basketball, volleyball, softball, field sports, intermediate level field sport, tumbling and acrobatic, track and field, racquet sport, swimming, intermediate level individual activity, field and square dance, and modern dance or jazz.

Options
Students must complete all courses in option A or B.

Option A: Physical Education and Athletic Emphasis
26:20 Laboratory in Teaching of Sports 1.0 s.h.
26:20 Teaching of Dance 2.0 s.h.
26:40 Psycho-Social Dimensions of Sport 3.0 s.h.
28:121 History and Philosophy of Physical Education 2.0 s.h.

Option B: Dance Emphasis
127:114 Dance History: From Primitive Through the Nineteenth Century 3.0 s.h.
127:115 Twentieth-Century Dance 3.0 s.h.
137:70 Composition I 2.0 s.h.
137:74 Composition II 2.0 s.h.
137:299 Rhythmic Analysis of Dance 2.0 s.h.
137:28 Dance Production 3.0 s.h.

7E.12S Methods and Materials of Teaching Children's Dance 2.0 s.h.
Advanced dance technique courses 7.0 s.h.

Professional Education Requirements
28:19 Orientation to Physical Education or 28:14 Orientation to Physical Education 0.5-1.0 s.h.
28:21 Advanced First Aid and CPR (or Red Cross Certification) 2.0 s.h.
28:40 Anatomy 3.0 s.h.
27:53 Human Anatomy 3.0 s.h.
28:41 Kinesiology 3.0 s.h.
27:107 Biomechanics of Physical Education 3.0 s.h.
28:42 Measurement 3.0 s.h.
28:106 Physiology of Exercise or 27:141 Exercise Physiology (prerequisite, 27:130) 3.0 s.h.
27:105 Physical Education for the Handicapped 3.0 s.h.
28:120 Administration of Physical Education and Athletics 2.0 s.h.
27:103 Administration and Curriculum in Physical Education 3.0 s.h.
28:142 Contemporary Issues of Health Education 3.0 s.h.
7W.32 Introduction to Microcomputing for Teachers 1.0 s.h.
75:72 Methods and Materials: Elementary School Physical Education 2.0 s.h.
27:70 Educational Psychology and Measurement 3.0 s.h.
75:97 Instructional Strategies and Design in Physical Education 3.0 s.h.
75:140 Issues in Education 3.0 s.h.
75:146 Methods of Secondary Physical Education 3.0 s.h.
27:100 Human Relations for the Classroom Teacher 3.0 s.h.
75:187 Seminar: Curriculum and Student Teaching 1.0 s.h.
75:191 Observation and Laboratory Practice in the Secondary School 6.0 s.h.
7E.122 Special Area Student Teaching 6.0 s.h.
28:118 Coaching Practicum (optional) 2.0 s.h.

Physical Education and Sport Program (nonteaching)
Physical Education Core Requirements
28:19 Orientation to Physical Education 1.0 s.h.
28:40 Anatomy 3.0 s.h.
28:106 Physiology of Exercise 3.0 s.h.
28:42 Measurement 3.0 s.h.
28.10 Administration of Physical Education and Athletics 2 s.h.
28.12 Administration of Fitness/Wellness Programs 2-3 s.h.
28.13 History and Philosophy of Physical Education 2 s.h.
28.85 Psycho-Social Dimensions of Sport 3 s.h.
28.90 Internships 0 s.h.

Sport and Dance Activity Requirements:
Serves beginning level skills and those intermediate or advanced level skills.

Fitness Specialist
28.53 Rhythmic Design or Exercise Programs 2 s.h.
28.57 Advanced First Aid and CPR 2 s.h.
17.41 Introductory Nutrition 3 s.h.
28.40 Contemporary Issues of Health Education 3 s.h.
28.73 Growth and Motor Development 2 s.h.
22.01 Survey of Computing 3 s.h.

Sport Specialist/Sports Administration
28.57 Advanced First Aid and CPR 2 s.h.
28.14 Theory of Coaching 2 s.h.
28.53 Growth and Motor Development 2 s.h.
22.01 Survey of Computing 3 s.h.

Sports Marketing
17.48 Textiles for Consumers 3 s.h.
22.01 Survey of Computing 3 s.h.
76.105 Design and Production of Media for Instruction 2 s.h.
19.81 Introduction to Communication Skills 3 s.h.

Program Leading to Coaching Endorsement
*Open only to graduate students

Theory of Coaching
28.14 Theory of Coaching 2 s.h.
28.218 Advanced Coaching 2 s.h.

Growth and Motor Development
28.73 Growth and Motor Development 2 s.h.
17.10 Growth and Development of the Young Child 3 s.h.
76.105 Child Development 3 s.h.

Anatomy
28.85 Anatomy or 3 s.h.
27.53 Human Anatomy 3 s.h.

Exercise Physiology
28.10 Physiology of Exercise 3 s.h.
27.141 Exercise Physiology 3 s.h.

Advanced First Aid and CPR
28.37 Advanced First Aid and CPR 2 s.h.
37.56 First Aid and Emergency Care or Red Cross Certifications

Care and Prevention of Athletic Injuries
27.51 Basic Athletic Training (Should be taken following anatomy and physiology)

Administration of Physical Education and Athletics
27.100 Administration and Curriculum in Physical Education 3 s.h.
28.12 Administration of Physical Education and Athletics 2 s.h.

Coaching Practicum
76.99 Coaching Practicum 1-3 s.h.

Health Education Endorsement Program
The following sequence of courses meets the requirements for Iowa approval Area 201 for both the Elementary Endorsement 10 and the secondary Endorsement 20. Students must complete a minimum of 20 semester hours to fulfill this upper level. 28.97 Advanced First Aid and CPR 2 s.h.
27.56 First Aid and Emergency Care or Red Cross Certifications in First Aid and CPR 2 s.h.
17.41 Introductory Nutrition 3 s.h.
76.105 Child Development 3 s.h.
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Program Options
M.A. students may elect a general concentration or a specialization in administration of athletics/physical education, administration of fitness/wellness programs, coaching, methods and supervision, philosophy of sport/physical education, psychology of sport, sociology of sport, sport communication, or sport/fitness leadership.

Students interested in other specializations are encouraged to submit a course of study to the graduate committee for consideration.

Students in both general and specialized curricula work with an advisor to develop their programs according to guidelines set by the departmental graduate committee.

Doctor of Philosophy

All doctoral students must complete a minimum of 72 semester hours of graduate work, including general requirements for the institution's degree and credit for the dissertation.

Prerequisites
Competence in the area noted under the M.A. program is required for doctoral program applicants. Competence in these areas must be evidenced as early as possible.

Research Tools
All doctoral students are required to take a statistics course at an appropriate level in The University of Iowa. Students may choose another 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) Aptitude Test in a given language, or by passing a Ph.D. language examination, the computer research requirement may be satisfied by taking 3 semester hours as approved by the departmental graduate committee.

Required Courses
28:280 Research Seminar 3 s.h.
28:280 Seminar in Research 2 s.h.
28:280 Seminar, Perspectives in Physical Movement 2 s.h.
28:601 Thesis 4 s.h.

Specialization
Students must complete a specialization of 30 semester hours, including dissertation; they must also take approximately 20 semester hours in one or more departments other than the Physical Education and Sports Studies. The following specializations have been approved: administration of physical education and athletics, measurement and evaluation, psychology of sport, and sociology of sport. Students interested in another area should submit a plan of study.

Comprehensive Examination
All doctoral students must pass a comprehensive examination, but not necessarily limited to their area of specialization. Part of the examination may be oral. The examination is conducted according to the policies established by the departmental graduate committee and is taken on a date set by the student and by or under the direction of the program and dissertation topic directors. The exam will be written, and the student can take the comprehensive examination.

Dissertation
All doctoral students are required to complete a dissertation. A final examination is held with an appropriate committee.

Residency Requirement
Doctoral students must complete two semesters of full-time (9 semester hours) in residence at The University of Iowa.

Faculty
Faculty members represent diversified backgrounds and specialization; their abilities and interests are complementary. Most hold advanced degrees, several bring educational backgrounds from abroad, and all are experienced teachers. Graduate faculty members have experience in research and writing and are available to guide graduate students in their areas of specialization. Many hold significant leadership positions and are frequently called on for lectures, speeches, and research presentations.

Facilities
Gymnasiums, fields, and special buildings and facilities are available in the various programs at the Physical Education Building, North Hall, the Field House, and the Recreation Building. A variety of fields for outdoor sports are available in various campus locations. The proximity of the Iowa River makes canoeing interesting. Facilities in a regular class schedule. The archery range is located along the river in a scenic setting; outdoor fields and a track are available. The University golf course is used for some classes.

Courses

Physical Education and Sports Studies—Primary for Undergraduates

3008 Computer Science Internship 6 s.h.
2811 Design Techniques 4 s.h.
2812 Design Techniques in Human Movement 2 s.h.
28:40 Thesis (for students on thesis option) 3 s.h.
Statistics 3 s.h.

Physical Education and Sports Studies—Primarily for Undergraduates

3008 Computer Science Internship 6 s.h.
2811 Design Techniques 4 s.h.
2812 Design Techniques in Human Movement 2 s.h.
28:40 Thesis (for students on thesis option) 3 s.h.
Statistics 3 s.h.
Physical Education—and Undergraduates and Graduates

24.06 Computer Uses in Physical Education 6.1 a.

25.10 Fitness Assessment Laboratory 6.1 a.


25.15 Biomechanics in Women in Sport 6.1 a.

25.16 Physical Education for Women in Sport 6.1 a.


25.18 Principles of Administration 6.1 a.

25.19 Methods and Materials for 6.1 a.

25.20 Nutrition 6.1 a.

25.21 Exercise Science 6.1 a.

25.22 Exercise Science 6.1 a.

25.23 Exercise Science 6.1 a.


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25.104 Exercise Science 6.1 a.


25.110 Exercise Science 6.1 a.


25.112 Exercise Science 6.1 a.

25.113 Exercise Science 6.1 a.

26107 The Child and Sport 2 a.h.
Effect of education on the development of sport.

26108 Motor Behavior of the Mentally Handicapped 2 a.h.
The adaptation of mentally handicapped children to physical activities, including sports and physical education.

26111 Physical Education for the Physically Handicapped 2 a.h.
Societal influence on the development of physical education for the handicapped.

26112 Physical Education for Those with Learning Disabilities and Behavior Disorder 2 a.h.
Societal influence on the development of physical education for children with learning disabilities and behavior disorders.

26113 The American Sports Hero in Cultural Perspective 2 a.h.
Societal influence on the development of sports heroes and their impact on society.

Physical Education—Primarily for Graduates

26201 Problems 3 a.h.
Prerequisite: consent of instructor.

26205 Current Issues 1 a.c.
Trends and issues in international and contemporary issues in physical education, leisure, and recreation.

26206 Endorphins of Sport 3 a.h.
Introduction to exercise as a means of enhancing of the body and the mind.

26213 Assessment of Motor Performance 3 a.h.
Procedures and methodologies for assessing the physical fitness and performance of individuals.

26214 Psychological Response to Exercise and Training 3 a.h.
Psychological responses to exercise and training, including motivation and stress management.

26215 Advanced Conditioning 3 a.h.
Advanced techniques in conditioning and exercise.

26216 Seminar: Hot Topics in Research 3 a.h.
Current issues in exercise and sport science.

26217 Supervision of Physical Education 2 a.h.
Guiding and motivating students in the field of physical education.

26218 Seminar: Social Issues in Sport 3 a.h.
Societal influence on the development of sport and social issues.

26219 Teaching Strategies 3 a.h.
Influence of social and ethical perspectives on teaching strategies.

26220 Sociology of Sports 3 a.h.
Sociology of sports, including the social implications of physical activity.

26221 Introduction to Legal, Ethical and Professional Issues 3 a.h.
Introduction to legal, ethical, and professional issues in physical education, including legal liability and malpractice.

26224 History of Women in Sports 3 a.h.
Historical perspective of women in sports, including key figures and events.

26225 Physical Education Program Planning 2 a.h.
Curricular design, methods of teaching, and administrative aspects of physical education programs.

PHYSICS AND ASTRONOMY

Chair: Dr. Robert N. Cashen


Undergraduate degrees offered: B.A., B.S., in Physics.
Graduate degrees offered: M.S. in Astronomy, Physics, and Physics (including specialization in Astronomy).

The Department of Physics and Astronomy provides comprehensive and rigorous instruction in all basic aspects of its subjects. It also provides research facilities and guidance for individual student work at an advanced level in selected specialties.

Total departmental enrollment typically is 3,000 each semester of the academic year and 200 during the summer session. All courses and advanced laboratories are taught for full-time faculty members. Senior faculty members teach the elementary courses and supervise advanced laboratories.

Beyond the elementary level, typical course enrollment is 20, there is ample opportunity for individual work. Special introductory courses are offered for majors in physics and astronomy and for others with specific interest in these subjects.

There are about 50 graduate majors—25 of whom are tenure teachers—and 70 graduate students in physics or astronomy. About 50 percent of the graduate students are physics majors, and nearly half of the graduate students are physics majors, and nearly half of the graduate students are physics majors, and nearly half of the graduate students are physics majors, and nearly half of the graduate students are physics majors, and nearly half of the graduate students are physics majors.

About 60 percent of the graduate students in physics and 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 in astronomy. The following programs are available in astronomy: Bachelor of Science in Physics.

The following courses in equivalent are required for the Bachelor of Science degree with a major in physics.

261C-26 Calculus I-III 8 a.h.

261C-26 Introduction to Linear Algebra 8 a.h.

261C-26 Calculus IV 8 a.h.
Minor in Physics
A program of physics courses satisfying the 15 semester hours required for a minor by the College of Liberal Arts must include at least 1 semester hour of upper level physics courses and an additional 12 semester hours of science in a thematic area as approved by the student's advisor. This program is appropriate for those planning careers in secondary-school science teaching, technical writing, and science-related administration. 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 astronomy.

Bachelor of Science in Astronomy
A balanced and integrated program of astronomy, mathematics, and physics courses is required for the Bachelor of Science degree in astronomy. This program prepares students for careers in advanced study in astrophysics, radio astronomy, or space astronomy. The following courses or their equivalents are required for the Bachelor of Science degree with a major in astronomy:

Bachelor of Arts in Physics
The Bachelor of Arts 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 physics and mathematics. This program is appropriate for those planning careers in secondary-school science teaching, technical writing, and science-related administration. 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.

Double Major in Physics and Astronomy
Students may obtain a double major in physics and astronomy. Those interested in such a combination should consult with their advisors. For general requirements of the College of Liberal Arts, see the "College of Liberal Arts" section of the Catalog.
Graduate Programs

Two advanced degrees are offered in physics: the Master of Science—either with 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 program in astronomy beyond the M.S. level may qualify for a Doctor of Philosophy degree in physics with specialization and a dissertation in astronomy or astrophysics. As M.S. degree is not prerequisite to the Ph.D.

The Department of Physics and Astronomy participates in interdisciplinary doctoral programs with the Program in Applied Mathematical Sciences (see the "Graduate College" section of the Catalog). Each entering graduate student is assigned a faculty advisor, who assists in preparing a plan of study and in guiding the student's progress. Graduate students become candidates for advanced degrees in physics or astronomy only after passing a qualifying examination in all principal areas of physics at the level of advanced undergraduate work. The examination is given during the first week of each second semester and must be taken by all first-year graduate students. After a student has selected a research specialty, the appropriate thesis or essay advisor then becomes the candidate's general advisor and the chair of the final examination committee.

Master of Science in Physics

The M.S. degree in physics is offered with either thesis or critical essay. The degree may be terminal or an intermediate step toward a Ph.D. degree. In either case, the final examination is oral, conducted by a committee of three members of the graduate faculty appointed by the dean of the Graduate College.

The program for the M.S. degree with thesis requires 20 semester hours of graduate work (100- or 200-level courses) and a thesis based on original experimental or theoretical investigation by the candidate. No more than 4 of the minimum 30 semester hours may be for research (29.381 Research Physics).

The program for the M.S. degree with a critical essay requires 30 semester hours of graduate work (100- or 200-level courses), an independent study of the literature on a chosen topic, and preparation of a critical essay on that topic. No more than 4 of the minimum 30 semester hours may be for the critical essay (29.220 Individual Critical Study). Up to one-third of the graduate program may be in related scientific fields other than physics and mathematics—for example, chemistry, astronomy, geology, or engineering.

Candidates for either of the M.S. degree programs must have satisfactorily completed the following courses or their equivalents as undergraduates or graduates:

29.115 Intermediate Mechanics 3 s.h.
29.116 Intermediate Quantum Mechanics 3 s.h.
29.117 Optics 3 s.h.
29.118 Statistical Physics 3 s.h.
29.120-129 Astronomy and Astrophysics 6 s.h.
29.132 Intermediate Laboratory (two semesters) 4 s.h.
29.133 Advanced Laboratory (two semesters) 4 s.h.
29.171-172 Mathematical Methods of Physics 6 s.h.
29.191 Atomic Physics 3 s.h.

Two additional courses selected from:
29.102 Elementary Particles and Nuclear Physics 3 s.h.
29.103 Introductory Solid State Physics 3 s.h.
29.194 Plasma Physics 3 s.h.

The student's plan of study should provide for as much advanced work as the student's aptitude and previous preparation permit.

Master of Science in Astronomy

The M.S. degree in astronomy is offered with either thesis or critical essay. The general requirements are the same as those for the M.S. in physics (see above). Course requirements or their equivalents for undergraduates or graduates are:

29.115 Intermediate Mechanics 3 s.h.
29.116 Intermediate Quantum Mechanics 3 s.h.
29.117 Optics 3 s.h.
29.118 Statistical Physics 3 s.h.
29.120-129 Introduction to Astrophysics I-II 9 s.h.
29.129-130 Electricity and Magnetism 3 s.h.
29.132 Advanced Laboratory 3 s.h.
29.171-172 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 continue for 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.
29.220-323 Theoretical Astrophysics I-II 6 s.h.
29.254 Stellar Structure and Evolution 3 s.h.

29.235 Special Topics in Astrophysics 2 s.h.
29.263 Seminar: Astrophysics 2 s.h.

Doctor of Philosophy in Physics

The program for study for the Ph.D. degree in physics is exclusive thorough coursework in both classical and quantum theoretical physics for all candidates, whether their specialized research is to be in an experimental or a theoretical area. All candidates must take comprehensive examinations; participate in advanced seminars; do original research in experimental physics, theoretical physics, or astrophysics; and prepare and defend a written dissertation based on this work.

They also must take at least 27 semester hours of 200-level courses in the Department, excluding 29.220, 29.281, 29.282, and seminars. The following minimum program is recommended as preparation for the comprehensive examinations.

29.101 Atomic Physics 3 s.h.
29.102 Elementary Particles and Nuclear Physics 3 s.h.
29.103 Introductory Solid State Physics 3 s.h.
29.194 Plasma Physics 3 s.h.
29.205 Classical Mechanics 3 s.h.
29.217 Statistical Mechanics I 3 s.h.
29.233-234 Electrodynamics 6 s.h.
29.246-247 Cosmology 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 29.220-221, 29.281-282. Theoretical Methods of Physics. The selection of less advanced courses will depend on the thoroughness of the students' preparation for graduate work. The students' choice of more advanced and specialized courses will depend on the direction in which their interests develop. No more than 9 of the minimum of 72 total course hours may be in research seminars.

Candidates for the Ph.D. degree are not recommended for the degree until they have written the dissertation in proper form for formal publication and have submitted it for publication, with the approval of the research advisor; it is a widely distributed, refereed scientific journal.

Financial Aid

Students qualified for graduate study are encouraged to apply for fellowships and assistantships. Inquiries should be directed to the departmental chair.

Research and Facilities

The department has an excellent library and a number of well-equipped laboratories.
Other courses may be used with the written approval of the political science directors of undergraduate studies.

Education Major
Undergraduate planning to emphasize political science in their teacher training should consult the College of Education for current requirements.

Hons
The program leading to a B.A. or a B.S. degree with honors is open to students with a cumulative grade-point average of 3.20. To graduate with honors, students must meet the following minimum 3.20 grade-point average in political science and a cumulative grade-point average of at least 3.20. Honors students must take nine semester hours of course work with a grade of B or higher in each course. Courses include 30.180 Honors Seminar on the Study of Politics and at least one advanced honors seminar (30.181-189). The last three semester hours required may be completed by enrolling in 30.185 Honors Research Project, 30.186 Honors Senior Thesis, or a third advanced honors seminar. Students interested in obtaining a B.A. degree with honors should contact the College of Liberal Arts Honors Program and the departmental honors adviser prior to the beginning of the junior year.

Minor
To receive a minor in political science, students must take 15 semester hours in political science courses, 12 of which must be taken in courses at The University of Iowa numbered 30.180 and above. Credit in course 30.181 Winona College Internship cannot be applied to the minor.

Graduate Programs
At the graduate level, the department has a program leading to a Doctor of Philosophy in political science, a program leading to an academic career. The Master of Arts in Public Affairs is a program designed for students preparing for careers in government services, 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.

Bachelor of Science
Major requirements for the B.S. in political science are the same as for the B.A., except that only two semesters of college-level courses (or the equivalent) in a foreign language are required, and the student must take three semesters of approved mathematics and/or statistics courses. Recommended courses are:

22M:25-26 Calculus I-IV
22S:132 Introduction to Statistical Method
22S:148 Intermediate Statistical Methods

Bachelor of Arts
Students seeking the B.A. degree with a major in political science must complete 37 semester hours of course work in political science. Students seeking the B.A. degree in political science may waive 3 semester hours of the General Education Requirement in social sciences.

The course work in political science must qualify:
330 Introduction to American Politics or 330 Introduction to Politics
It must also include two of the following:
330 Introduction to Political Thought and Political Action
330 Introduction to Comparative Politics
330/350 Introduction to Political Behavior
330 Introduction to World Politics
Course work must include at least 18 semester hours in political science courses numbered 300 or above. Course 330/182 Winona College Internship cannot be included in this total. At least 12 of the required 18 semester hours must be taken in regularly scheduled class work. Transfer students must complete at least 12 of the 37 semester hours of work in political science at The University of Iowa. Students must maintain at least a 2.0 grade-point average in all political science courses taken at Iowa University of Iowa.

Bachelor of Science
Major requirements for the B.S. in political science are the same as for the B.A., except that only two semesters of college-level courses (or the equivalent) in a foreign language are required, and the student must take three semesters of approved mathematics and/or statistics courses. Recommended courses are:

22M:25-26 Calculus I-IV
22S:132 Introduction to Statistical Method
22S:148 Intermediate Statistical Methods

Bachelor of Arts
Students seeking the B.A. degree with a major in political science must complete 37 semester hours of course work in political science. Students seeking the B.A. degree in political science may waive 3 semester hours of the General Education Requirement in social sciences.

The course work in political science must qualify:
330 Introduction to American Politics or 330 Introduction to Politics
It must also include two of the following:
330 Introduction to Political Thought and Political Action
330 Introduction to Comparative Politics
330/350 Introduction to Political Behavior
330 Introduction to World Politics
Course work must include at least 18 semester hours in political science courses numbered 300 or above. Course 330/182 Winona College Internship cannot be included in this total. At least 12 of the required 18 semester hours must be taken in regularly scheduled class work. Transfer students must complete at least 12 of the 37 semester hours of work in political science at The University of Iowa. Students must maintain at least a 2.0 grade-point average in all political science courses taken at The University of Iowa.

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22M:25-26 Calculus I-IV
22S:132 Introduction to Statistical Method
22S:148 Intermediate Statistical Methods

Bachelor of Arts
Students seeking the B.A. degree with a major in political science must complete 37 semester hours of course work in political science. Students seeking the B.A. degree in political science may waive 3 semester hours of the General Education Requirement in social sciences.

The course work in political science must qualify:
330 Introduction to American Politics or 330 Introduction to Politics
It must also include two of the following:
330 Introduction to Political Thought and Political Action
330 Introduction to Comparative Politics
330/350 Introduction to Political Behavior
330 Introduction to World Politics
Course work must include at least 18 semester hours in political science courses numbered 300 or above. Course 330/182 Winona College Internship cannot be included in this total. At least 12 of the required 18 semester hours must be taken in regularly scheduled class work. Transfer students must complete at least 12 of the 37 semester hours of work in political science at The University of Iowa. Students must maintain at least a 2.0 grade-point average in all political science courses taken at The University of Iowa.

Bachelor of Science
Major requirements for the B.S. in political science are the same as for the B.A., except that only two semesters of college-level courses (or the equivalent) in a foreign language are required, and the student must take three semesters of approved mathematics and/or statistics courses. Recommended courses are:

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and review of the student's record for a final examination committee, which may waive the final oral examination.

The same requirements apply where a first-year evaluation committee finds the quality of a student's work inadequate for recommendation to the Ph.D. but adequate for proceeding with the masters program. The committee may recommend that the student be permitted to work the minimum M.A. as a terminal degree.

Doctor of Philosophy

All doctoral students must acquire a level of competence in quantitative methods. This is demonstrated by taking 30:601 Advanced Research Methods and receiving a grade no lower than B. Any special tools or skills needed for conducting dissertation research—for example, foreign languages, econometrics, or experimental design—must be acquired before taking comprehensive examinations. Students who doubt that they need such skills should consult with their faculty advisor in the first two years of course work.

Comprehensive Examination

Students must take the comprehensive examination by the end of their sixth semester of residence, or in the first examination period following their attainment of 45 hours of graduate credit, whichever comes later.

Comprehensive examinations in three of the five areas: American government and politics; comparative politics; international politics; and political theory must be passed.

Before taking the written examinations, candidates must present a written dissertation proposal. They must later explain and defend the proposal in an oral examination, which also may deal with all matters relevant to the written examinations and the area they cover.

Ph.D. candidates in political science must acquire at least four semesters of supervised training in teaching and/or research. This instruction is usually given in association with the student's service as a teaching or research assistant.

A comprehensive statement of departmental requirements is set forth in the Guide to Graduate Study in Political Science. For general graduate administration and departmental policies, see the College of Arts and Sciences Handbook, and the Graduate Division of the College and University of New Jersey, Committee on Graduate Education.

Courses

30:606 Cooperative Education Training Seminar 1 credit

301: Introduction to American Politics 3 credits

Introduction to the structure and processes of American politics and political institutions, including Congress, the president, the federal administrative agencies, the Supreme Court, and the bureaucracy. Discussion of the training and significance of the U.S. Constitution. Fulfill Iowa teacher certification requirement.

30:606 Introduction to Politics 3 credits

Basic concepts and principles of politics, discussed in relation to current events and settings. Introduction to the study of political science, including the relationship of politics to the individual and to society. Fulfill basic requirements of the A.B. degree.

30:606 Introduction to Political Theory and Political Action 3 credits

Introduction to the study of political thought and political action. The evolution of political thought. Concepts, definitions, and techniques of modern political science.

30:606 Introduction to Comparative Politics 3 credits

Comparative government in Asia, Africa, Latin America, and the Middle East. The political and economic development of the region. The role of religion in comparative politics.

30:606 Introduction to World Politics 3 credits

Introduction to the study of politics in the modern world, emphasizing the political systems of the major areas and the functioning of the international system.

30:606 Foreign-Student Honors Seminar in Political Science 3 credits

Introduction to problems, methods, and theories in a field of political science.

30:606 Undergraduate Political Research 3 credits

Introduction to political research methods and techniques. Research in political science. Application of basic research methods to the understanding of political phenomena.

30:606 The American Political System 3 credits

The American political system. Its historical development and its role in American society. The role of the political parties, the role of the Congress, the role of the president, and the role of the courts. The role of the political parties, the role of the Congress, the role of the president, and the role of the courts.

30:606 Municipal Government and Politics 3 credits

Municipal government and politics, including the organization, operation, and administration of local governments. The role of the political parties. The role of the Congress. The role of the president. The role of the courts.

30:606 Iowa Government and Politics 3 credits

Iowa's political system, including the organization, operation, and administration of the state government. The role of the political parties. The role of the Congress. The role of the president. The role of the courts.

30:606 American State Policy 3 credits

American state policy formation and implementation. The role of the state in American society. The role of the political parties. The role of the Congress. The role of the president. The role of the courts.

30:606 Political Parties and Pressure Groups 3 credits

Political parties and pressure groups in American politics. The role of the political parties. The role of the Congress. The role of the president. The role of the courts.

30:606 Political Processes and Social Stresses 3 credits

Political processes and social stresses in American politics. The role of the political parties. The role of the Congress. The role of the president. The role of the courts.

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Bachelor of Arts

Students must satisfy the general College of Liberal Arts requirements for the B.A. degree and must complete at least 28 semester hours in psychology. At least 15 semester hours of the major must be completed in this department.

The B.A. program must include the following courses, or equivalents:
1. 31.3 General Psychology or 31.3 Elementary Psychology in Statistics in Psychology.
2. 31.120 Experimental Psychology II, one elective course from each of the areas listed below, and at least one course from each of the following:
   - 31.125 Introductory Psychology
   - 31.126 Psychological Research
   - 31.135 Principles of Behavioral Analysis
   - 31.136 Developmental Psychology

Bachelor of Science

Students must satisfy the general College of Liberal Arts requirements for the B.S. degree and must complete at least 28 semester hours in psychology. At least 15 semester hours of the major must be completed in this department.

The B.S. program must include the following courses, or equivalents:
1. 31.3 General Psychology or 31.3 Elementary Psychology.
2. 31.144 Introduction to Statistics in Psychology.
3. 31.120 Experimental Psychology I.
4. 31.121 Experimental Psychology II.
5. One elective course from each of the areas listed below, and at least one course from each of the following:
   - 31.125 Introductory Psychology
   - 31.126 Psychological Research
   - 31.135 Principles of Behavioral Analysis
   - 31.136 Developmental Psychology

CAUTION: The B.S. degree in psychology are expected to satisfy the General Education Requirement in natural sciences in one of the following ways: one semester of chemistry and one semester of biology; two semesters of chemistry; two semesters of physics; one semester each of chemistry and physics. B.S. majors also must complete at least one semester of calculus, at least one semester of statistics, and at least one pre-calculus mathematics course. Students should consult with their advisors concerning specific electives that will satisfy these requirements.

Minor

A minor in psychology is an attractive option to students from a variety of disciplines. At least 12 of the 15 semester hours for a minor in psychology must be in upper-level courses in this department; this includes all 100-level courses and 31.43. Departmental advisors can help students identify sequences of courses for a minor that appropriately complement the student's major.

Area Electives

Area offerings vary somewhat from semester to semester. Prior to each registration period, students should check the latest version of the brochure. Undergraduate Psychology at Knox, and the current Schedule of Courses.

Animal Learning and Behavior

31.17 Introduction to Comparative Psychology
3.0
31.123 Physiological Psychology
3.0
31.120 Psychological and Physiological Psychology
3.0
31.128 Introduction to Behavioral Psychology
3.0
31.129 Biological Aspects of Behavior
3.0
31.132 Motivation
3.0
31.135 Principles of Behavioral Analysis
3.0

Child and Developmental Psychology

31.14 Introduction to Child Psychology
3.0
31.105 Development of Children's Social Behavior
3.0
31.110 Learning and Motivation in Children
3.0
31.114 Cognitive Development of Children
3.0
31.118 Perceptual Development
3.0
31.165 Developmental Psychopathology
3.0

Clinical Psychology

31.13 Introduction to Clinical Psychology
3.0
31.105 Personality
3.0
31.109 Psychology of Aggression
3.0
31.61 Schizophrenia
3.0
31.162 Depressive and Manic Disorders
3.0
31.163 Abnormal Psychology
3.0
31.166 Developmental Psychopathology
3.0
31.170 Behavior Modification
3.0

Cognitive Psychology

31.16 Introduction to Mental Processes
3.0
31.119 Learning and Motivation in Children
3.0
31.124 Language Processing
3.0
31.119 Memory and Cognition
3.0
31.120 Psychology of Thinking
3.0
31.133 Perception
3.0
31.147 Introduction to Psychological Measurement
3.0
31.155 Human Factors Engineering
3.0

Social Psychology

31.16 Introduction to Social Psychology
3.0
31.105 Development of Children's Social Behavior
3.0
31.106 Attitude Change
3.0
31.107 Environmental Stress
3.0
31.108 Small Group Processes
3.0
31.111 Social Cognition
3.0

Honors

The department has an active honors program open to majors with at least a 3.30 grade-point average in psychology courses and at least a 3.50 overall. The program includes research seminars and individual research collaboration with faculty members. Students ordinarily are selected to participate in the department's 31.190 honors seminar in Psychology during the spring semester of the junior year. Interested majors should contact the department honors advisor early in the junior year.

Graduate Program

The graduate program in psychology is designed primarily for students seeking the Ph.D. degree. Except in very special circumstances, applications are considered only for that degree. For students entering without previous graduate work, it is a four-year program; those entering with previous graduate training require from two to four additional years in this department, depending on the nature of the earlier preparation.

The Ph.D. program has a strong emphasis on preparation for research, teaching, and academic careers, 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 behavior, familiar with fundamental knowledge about behavioral processes, well trained in the methods and techniques for careful investigation of these processes, and determined to make contributions to the study of psychology and to society. Prospective applicants should understand that the nature of positions appropriate for graduates of this program is limited and that the competition for available openings is fairly intense.

Graduate training is organized in four broad training areas: animal learning and behavior, child and developmental psychology, clinical psychology, cognitive psychology, and social and personality psychology. Students are expected to identify one of these as his or her primary area and to follow a program that develops thorough understanding of the substantive material and methods of investigation central to that subdiscipline. While pursuing specialty training, all students must meet course requirements in statistics, research methods, learning, and several common areas other than the primary one.

The training area programs are sufficiently flexible to permit students to develop substantial competence in a second training area. Several joint programs have been formulated and others can be developed as student interest dictates. A joint program involves mixing course work in two areas, and research supervision or co-supervision by faculty members from both areas. The department also in
Master of Arts with Thesis

As indicated above, the department does not offer a specific M.A. program. The Master of Arts degree with thesis is a required step for students preparing for the Ph.D. This degree requires satisfactory completion of at least 36 semester hours of graduate course work and a thesis, including at least 18 semester hours in this department. The course work must include the statistics sequence, a learning course, and at least one course outside the primary specialty area. Students also must complete an acceptable senior thesis and conduct a successful oral defense of the thesis.

Master of Arts without Thesis

The Master of Arts degree without thesis is an option available to those few students who terminate their work in the department after four semesters. This degree requires satisfactory completion of at least 36 semester hours of graduate credit in psychology, including at least 24 semester hours in this department. The course work must include the statistics sequence, a learning course, and at least one course outside the primary area. Students also must perform successfully on a written examination covering the area of specialization.

Graduate Training Areas

Animal Learning and Biopsychology

The focus of the program in animal learning and biopsychology is on the analysis of learning and behavior and primary in nonhuman subjects, through the application of behavioral and biological principles. Special faculty strengths are in classical and operant conditioning, comparative psychology, motivation, neuropharmacology, neuroendocrinology, and neuroanatomy. Students in this program have the opportunity to learn state-of-the-art techniques in computer-controlled experimentation and electronic instrumentation, and modern analytic and laboratory methods in neuroscience, toxicology, and biochemical assay.

Faculty members in the animal learning and biopsychology area interact extensively with colleagues from A research department, science departments in the College of Medicine. These collaborative activities provide excellent research and training opportunities for students interested in exploring interdisciplinary fields such as behavioral medicine and neurobehavioral science.

Child and Developmental Psychology

Students in the child and developmental psychology program are expected to acquire a broad understanding of children's development in the social, cognitive, and perceptual domains. As the training program proceeds, students may focus their preparation on any of these broad areas, or may choose to develop a more particular specialization in areas such as language development and learning, memory, the development of social judgment, sensory development, and abnormal development. Most of these specialties require program preparation in at least one or all other training areas in the department. The program does not have a specific lifespan focus, but several faculty members are involved in research on aspects of aging and can provide some supervision for students interested in this area. Faculty members have close contacts with colleagues from the Department of Speech Pathology and Audiology, the College of Education, the Department of Pediatrics, and the Department of Psychology. These relationships can be useful to students who wish to gain additional background in developmental aspects of communication or in behavioral medicine.

Clinical Psychology

The clinical training program, fully approved by the American Psychological Association, strongly emphasizes a scientific approach to the study of psychopathology. It is designed for students who are primarily interested in developing clinically-oriented skills necessary to the systematic investigation of such problems. In addition, students must become familiar with clinical material and competent in the application of clinical skills, the department closely integrates practical experiences with theoretical training. The E. B. Seabrook Psychology Clinic with course work and supervised research experience. Students are expected to develop special competencies in areas such as cognitive-behavioral therapy, interpersonal therapy, sexual dysfunction, and child psychopathology. Faculty members collaborate with colleagues from departments such as Psychiatry, Pediatrics, Obstetrics and Gynecology, and from agencies such as the Health Services Research, the School of Social Work and the Gerontological, from nearby area mental health centers. As a consequence of this 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 training programs in clinical child and developmental psychology, clinical-cognitive psychology, and clinical-health and behavioral science have been established. Similar joint programs combined with specialization work in other specialty areas can be arranged.

Advanced students have the opportunity to gain additional experience through placement in clinical facilities maintained by local state, and University.
agencies. Students in the clinical program who wish to have the designation "clinical psychology" on their official 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 most, if not all, of the dissertation project.

Health and Behavioral Science
The health and behavioral science program is designed to prepare students to engage in academic research pertinent to the psychophysiological and behavioral components of health disorders. The program emphasizes study in the areas of methodology and statistics; the physiological bases of behavior; neurophysiology; psychophysiology; pain, communication processes; and the behavioral and psychological effects of illness stressors. Students are involved in research throughout their tenure in the program. Faculty and students participate in a weekly seminar on research strategies and advances in health and behavioral science.

To broaden research perspective and skills prior to beginning the dissertation, advanced students also train in an affiliated laboratory (research apprenticeship). Students in the health and behavioral science program may acquire specialized preparation for research and teaching in interest areas such as clinical psychology, psychophysiology and hypnotherapy, animal models of disease, electrophysiological, pain, neural transmission, language and cognitive disorders, interpersonal communication and language regarding health disorders, and the analysis of behavioral change. Collaborative research is facilitated with faculty members in Speech Pathology and Audiology and in various departments of the College of Medicine, currently including the departments of Anatomy, Anesthesiology, Biostatistics, Child Development and Gynecology, Otolaryngology—Head and Neck Surgery, Pediatrics, Pharmacology, Radiology, and Surgery.

Cognitive Psychology
Students affiliated with the cognitive—previously the human experimental—program conduct their research in the broad areas of cognition, information processing, and learning. Current faculty members specialize in the following areas: learning, memory, and problem solving in children; language, cognition, and neurophysiology; mathematical psychology; psychological scaling, and signal detection theory; cognitive effects of drugs; human judgment and decision making; information processing; and psychoacoustics.

Faculty members in the cognitive area 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 Health Services Research Center, and from several departments including Neurology, Industrial and Management Engineering, Speech Pathology and Audiology, and Anesthesia.

Social Psychology
The social psychology program offers a variety of perspectives on social processes. Students develop familiarity with all of the approaches but may focus their graduate training in any of five subareas: social psychophysiology, dealing with reciprocal influences of social and physiological systems; attitudes and social cognition, dealing with topics such as attitude acquisition and change, cognitive consistency, attribution, and persuasion; social influences on behavior, including social learning, social development, initiation, and conformity; the social psychology of groups, dealing with cooperation and competition, group decision processes, social facilitation, and distinction; and sociotechnical psychology, 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 occurs during the second year of course work outside the department (e.g., in the College of Business Administration or the Department of Communication Studies) and participation in special workshop projects, will broaden students' employment prospects.

Admission
Since the graduate program in psychology is designed primarily for students seeking the Ph.D. degree, applicants are considered on this basis. Occasionally, a qualified applicant interested in advanced work only through the M.A. level may be admitted to pursue a joint graduate program involving psychology and another discipline or program. A person interested in such a program should contact the department chair before filing an application.

The deadline for applications is February 1 for all materials to be on file by that date. The Graduate Record Examination (GRE) Aptitude Test should be taken in October, certainly no later than in December. The subject test in psychology is not required. Applications may be submitted at any time but are considered only once each year—between February 1 and March 15—for admission the following fall. Admissions decisions are based on a composite consideration of prior academic performance, letters of reference, scores on the verbal, quantitative, and analytic sections of the GRE Aptitude Test, and the applicant's statement about background and purpose. Level of review of examination materials is done by faculty members in the applicant's primary interest area.

An undergraduate major in psychology—including a laboratory course in experimental psychology, a course in statistics, and additional work in the natural sciences and in mathematics—is desirable though not required. Students who have not had such a background but who are strongly qualified on other grounds may be admitted but will be expected to study deficiencies through special course work or independent study prior to embarking on the regular graduate program. A student who has completed substantial graduate work at another institution at the time of admission to this program will be expected to present documents, such as the master's thesis or equivalent, that reflect significant engagement in research and scholarly writing. This material and the record of previous graduate course work will be reviewed by the faculty members of the appropriate training area as a basis for placement in the graduate program. In no instance will a student be permitted to complete substantial research or writing for a master's degree at another institution while a regular full-time student in the graduate program at The University of Iowa.

A foreign language is not required for admission; there are no foreign language requirements for the M.A. or the Ph.D. degree in psychology.

Financial Aid
All students admitted to the graduate program are automatically considered, on the basis of need, for a variety of fellowships, teaching assistantships, research assistantships, and other scholarships. Separate application for financial aid is not required.

Faculty
The widely recognized commitment of the faculty to research and scholarship has resulted in the publication of nearly 100 articles, books, reviews, and book chapters each year. Many faculty members are also active as speakers, consultants, and regular consulting editors for major psychology journals.

Facilities
The department's facilities for graduate training and research are among the finest in the country. The Kenneth W. SpaceX Laboratories of Psychology and adjoining space in Seashore Hall include a variety of laboratories, many heavily computerized, for human and animal studies. Facilities include special psychology teaching areas; a biology laboratory; observation suites with remote audiovisual control and recording equipment; soundproof
chambers, closed-circuit TV systems, electromechanical recording rooms, conditioning laboratories, The Earl C. Seashore Psychology Clinic, and well-equipped electronic machinery, including woodworking shops.

The University's Wexner Computing Center is currently operating an IBM 360/95 to provide students and faculty with access to a mainframe. Computer facility in the Seashore Hall. Office space for graduate students and faculty is provided in Seashore Hall. The psychology branch of the University's Main Library is conveniently located in the west wing of Seashore Hall.

The research and teaching activities of the department greatly benefit from the facilities and staff of other University and local agencies, including The University of Illinois Hospitals and Clinics, the Psychiatric Hospital, the Veterans Administration Medical Center, the University Counseling Service, the Child Development Clinic, the Wendell Speech and Hearing Clinic, the Health Services Research Center, and the School of Social Work genecology program.

Courses

Primarily for Undergraduates

Either 31.11 or 31.01 or an equivalent is prerequisite to all other courses in psychology. Only one of these may be taken for credit. 31.11, 31.14, 31.10, 31.16, 31.17, 31.19, and 31.43 are open to freshmen who have satisfactorily completed an introductory psychology course (31.01 or 31.11).

11.01 Elementary Psychology

3.00 Credit. Introduction to psychological science. Students and faculty members present in their areas of expertise, conducted on methods of experimentation in psychology through participation in demonstrations and discussions related to psychological phenomena and their explanation. Not open to freshmen.

11.03 General Psychology

4.00 Credit. Introduction to psychology as an experimental science. Basic concepts in psychology, the psychological research process, theories of motivation, personality, intelligence, and perception. May be taken for credit to the first year only. Prerequisites: high school preparation in mathematics and science.

11.14 Introduction to Clinical Psychology

3.00 Credit. Survey of current methods and thinking in clinical psychology considering contemporary approaches to the therapy of psychological disturbances. Prerequisite: 31.11 or 31.01 equivalent.

11.16 Introduction to Child Psychology

3.00 Credit. Survey of current research and theory in child psychology, including infancy and adolescence, intelligence, personality development, attachment, language acquisition, thinking, inner-directed problem solving, infancy and childhood, and adolescence, and the role of the family in the training of the child. Prerequisites: 31.11 or 31.01 equivalent.

11.21 Introduction to Social Psychology

3.00 Credit. Survey of the historical development of social psychology. The influence of social psychology in the study of social behavior; socialization and socialization; attitude development and change.

11.241 Introduction to Perceptual Processes

3.00 Credit. An introduction to the perceptual processes and the factors that influence them. Prerequisites: 31.11 or 31.01 equivalent.

11.242 Perception and Cognition

3.00 Credit. An introduction to perception and cognition. The role of the senses in perceiving the environment; the psychological processes involved in resolving ambiguity; and the interrelationships between perception and cognition. Prerequisites: 31.11 or 31.01 equivalent.

11.243 Perception and Cognition

3.00 Credit. An introduction to visual perception and the study of the psychological processes involved in resolving ambiguity. The role of the senses in perceiving the environment; the psychological processes involved in resolving ambiguity; and the interrelationships between perception and cognition. Prerequisites: 31.11 or 31.01 equivalent.

11.31 Psychology in Business and Industry

3.00 Credit. Psychological principles in the field of business, the study of work, employees on personnel selection, testing, industrial relations, and management. Prerequisites: 31.11 or 31.01 equivalent.

11.39 Evaluating Psychological Research

3.00 Credit. An introduction to the evaluation of psychological literature. The student will be required to critically evaluate the quality of research design, data collection, and presentation. Prerequisites: 31.11 or 31.01 equivalent.

11.39 Evaluating Psychological Research

3.00 Credit. An introduction to the evaluation of psychological literature. The student will be required to critically evaluate the quality of research design, data collection, and presentation. Prerequisites: 31.11 or 31.01 equivalent.

11.55 Personality and Social Psychology

3.00 Credit. Theories of personality, personality assessment, and the relationship between personality and social behavior. Prerequisites: 31.11 or 31.01 equivalent.

11.56 Attitude Change

3.00 Credit. Theories of attitude change and the psychological processes involved in the determination of attitudes. Prerequisites: 31.11 or 31.01 equivalent.

11.57 Environmental Stress

3.00 Credit. Theories of stress and the psychological processes involved in the determination of stress. Prerequisites: 31.11 or 31.01 equivalent.

11.58 Group Decision-making

3.00 Credit. An introduction to group decision-making, interpersonal decision-making, and the psychological processes involved in the determination of group decisions. Prerequisites: 31.11 or 31.01 equivalent.

11.60 Psychology of Aggression

3.00 Credit. An introduction to the psychological processes involved in aggression behavior in human and nonhuman animals. Implications of research on aggression for understanding the contemporary social world.

11.61 Social Cognition

3.00 Credit. An introduction to the psychological processes involved in social cognition. The role of social cognition in the study of social behavior; socialization and socialization; attitude development and change.

11.69 Learning and Motivation in Children

3.00 Credit. Survey of psychology and human development. Implications of research on learning and motivation for understanding the contemporary social world.

11.69 Learning and Motivation in Children

3.00 Credit. Survey of research on learning and motivation. Theories of learning, social learning, and motivation; theories of learning, social learning, and motivation; and the role of learning in social behavior.

11.71 Social Cognition

3.00 Credit. An introduction to the psychological processes involved in social cognition. The role of social cognition in the study of social behavior; socialization and socialization; attitude development and change.

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31203 Advanced Neuropsychology 3.0 b.
Structural and functional organization of the nervous system as related to the structure of drugs, behavior, and physiology. Commitments refer to specific drug actions. Special topics in clinical animal research. Prerequisite: consent of instructor. See 7.1203.

31204 Laboratory Techniques 3.0 b.
Methods in cognitive and behavioral research. A laboratory course in methods for conducting behavioral studies. Prerequisite: consent of instructor. See 7.1204.

31205 Experimental Analysis of Behavior 3.0 b.
Behavioral analysis of operant and instrumental behavior: analysis of simple operant behavior and the effects of reward, punishment, and reinforcement. Prerequisite: consent of instructor. See 7.1205.

31206 Human Psychophysiology 3.0 b.
Emotional and behavioral correlates of human psychophysiological phenomena. Prerequisite: consent of instructor. See 7.1206.

31208 Laboratory in Human Psychophysiology 3.0 b.
Development of techniques in human psychophysiological instrumentation. Prerequisite: consent of 7.1206. See 7.1208.

31300 Human Judgment: Models and Applications 3.0 b.
Analysis of models and methods used in the study of human judgment and decision making, and applications of these methods to the development of computer models of human judgment and decision making. Prereq.: Consent of instructor. See 7.1209.

31401 Social Decision Analysis 3.0 b.
Review of statistical concepts and techniques used in research and applications of the design and analysis of experiments. Evaluation of statistical techniques, parameter estimation, sampling and survey design. Prerequisite: Consent of instructor. See 7.1241.

31402 Mathematical Methods 3.0 b.
Linear and non-linear methods of mathematical analysis of behavioral data. Prerequisite: Consent of instructor. See 7.1242.

31403 Quantitative Methods in Psychology 3.0 b.
Mathematical methods of analysis and synthesis of quantitative human behavior. Prerequisite: Consent of instructor. See 7.1243.

31404 Statistical Analysis II 3.0 b.
Continuation of 7.1242. Descriptive statistics and analysis of variance. Prerequisite: Consent of instructor. See 7.1244.

31405 Data Analysis and Testing 3.0 b.
Behavioral survey and experimental training in methods of data analysis and testing. Prerequisite: Consent of instructor. See 7.1245.

31406 Multivariate Analysis 3.0 b.
Applications of multivariate analysis in behavioral science research. Prerequisite: Consent of instructor. See 7.1246.

31407 Advanced-Methodological Psychophysiology 3.0 b.
Study of the psychological and physiological correlates of human behavior. Prerequisite: Consent of instructor. See 7.1247.

31408 Clinical Psychophysiology 3.0 b.
Survey course in major psychophysiological techniques of non-invasive research. Prerequisite: Consent of instructor. See 7.1248.

31409 Laboratory in Clinical Psychophysiology 3.0 b.
Techniques and methods for non-invasive research. Prerequisite: Consent of instructor. See 7.1249.

31410 Behavioral Therapy 3.0 b.
Behavioral methods of therapy. Prerequisite: Consent of instructor. See 7.1250.

31411 Advanced Behavior Therapy 3.0 b.
Behavioral methods of therapy. Prerequisite: Consent of instructor. See 7.1251.

31412 Animal Learning and Behavior 3.0 b.
Animal learning and behavior. Prerequisite: Consent of instructor. See 7.1252.

31413 Personality and Psychopathology 3.0 b.
Survey of key theoretical models of personality and psychopathology. Prerequisite: Consent of instructor. See 7.1253.

31501 Principles in Health and Behavioral Science 3.0 b.
Behavioral science perspectives on health and disease. Prerequisite: Consent of instructor. See 7.1254.

31502 Principles of Cardiovascular Disease 3.0 b.
Behavioral science perspectives on cardiovascular disease. Prerequisite: Consent of instructor. See 7.1255.

31503 Principles of Aging 3.0 b.
Behavioral science perspectives on aging. Prerequisite: Consent of instructor. See 7.1256.

31504 Aging 3.0 b.
Behavioral science perspectives on aging. Prerequisite: Consent of instructor. See 7.1257.

31505 Stress and Anxiety 3.0 b.
Behavioral science perspectives on stress and anxiety. Prerequisite: Consent of instructor. See 7.1258.

31601 Experimental Psychopharmacology 3.0 b.
Experimental psychopharmacology: behavioral and physiological effects of drugs. Prerequisite: Consent of instructor. See 7.1259.

31602 The Addicts Disease 3.0 b.
Critical review of theory and methods of addiction. Prerequisite: Consent of instructor. See 7.1260.

31603 Psychological Assessment I 3.0 b.
Examination of various techniques of psychological assessment. Prerequisite: Consent of instructor. See 7.1261.

31604 Psychological Assessment II 3.0 b.
Examination of various techniques of psychological assessment. Prerequisite: Consent of instructor. See 7.1262.

31605 Neuropsychiatry Seminar 3.0 b.
Neuropsychiatric seminar. Seminar topics may vary. Prerequisite: Consent of instructor. See 7.1263.

31606 Clinical Child Psychology 3.0 b.
Clinical psychology in the treatment of children and adults. Prerequisite: Consent of instructor. See 7.1264.

31607 Clinical Psychopathology 3.0 b.
Clinical psychology in the treatment of children and adults. Prerequisite: Consent of instructor. See 7.1265.

31608 Clinical Psychotherapy 3.0 b.
Clinical psychotherapy: psychoanalytic, behavior therapy, and humanistic approaches. Prerequisite: Consent of instructor. See 7.1266.

31609 Experimental Psychology 3.0 b.
Behavioral science perspectives on abnormal psychology. Prerequisite: Consent of instructor. See 7.1267.

31610 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1268.

31611 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1269.

31612 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1270.

31613 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1271.

31614 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1272.

31615 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1273.

31616 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1274.

31617 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1275.

31618 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1276.

31619 Social Psychology 3.0 b.
Social psychology. Prerequisite: Consent of instructor. See 7.1277.
Religion • Liberal Arts

31.360 Student Reflections and Debrief
6-12 h. Instruction in the use and understanding of written and verbal presentations of personal experiences, current understanding of behavioral science literature, and the decision-making of individuals. Topics include behavior and personal development.

31.445 Psychological Practice
4.5 h. Psychological work in the Department of Psychology that involves an understanding of psychological therapy methods, process; case management of client therapy sessions.

31.446 Psychological Practice
4.5 h. Psychological practice in psychological assessment techniques. Psychotherapy concepts for clinical training needs.

31.460 Student Practice
4.5 h. Student practice and clinical experience in the administration and evaluation of psychological testing. Prerequisite: Consent of clinical training committee.

Religious Practice

Religious practice is an important part of the School of Religion. It helps students from any major field acquire a critical understanding of the history and literature of the world's religions. The school integrates the study of the religions of the world with the student's major field of study. The course is offered in the fall semester of the fourth year of the program. The course is offered in the fall semester of the fourth year of the program.

Religious Studies

Religious studies is an important part of the School of Religion. It helps students from any major field acquire a critical understanding of the history and literature of the world's religions. The school integrates the study of the religions of the world with the student's major field of study. The course is offered in the fall semester of the fourth year of the program. The course is offered in the fall semester of the fourth year of the program.

Religious Education

Religious education is an important part of the School of Religion. It helps students from any major field acquire a critical understanding of the history and literature of the world's religions. The school integrates the study of the religions of the world with the student's major field of study. The course is offered in the fall semester of the fourth year of the program. The course is offered in the fall semester of the fourth year of the program.

Undergraduate Program

Undergraduate students selecting the Bachelor of Arts in religious education at least 27 semester hours of coursework in religion, 12 of which must be at the senior level, must complete at least 12 semester hours in the major field of study. The course is offered in the fall semester of the fourth year of the program. The course is offered in the fall semester of the fourth year of the program.

Religion and Health

Religion and Health is an important part of the School of Religion. It helps students from any major field acquire a critical understanding of the history and literature of the world's religions. The school integrates the study of the religions of the world with the student's major field of study. The course is offered in the fall semester of the fourth year of the program. The course is offered in the fall semester of the fourth year of the program.

Master of Arts

There are two tracks toward the M.A. in religion. Students choosing the thesis track must earn a minimum of 36 semester hours in the major field of study, including 32 semester hours in 320 Methods and Theories in the Study of Religion. The non-thesis track requires a minimum of 36 semester hours in the major field of study.

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 Hospital and Clinics provide the setting for research and training in this program.

Doctor of Philosophy

Candidates for the doctorate must complete a minimum of 72 semester hours of graduate course work, of which 24 semester hours are taken in the School of Religion. A maximum of 12 semester hours is allowed for the dissertation.

Graduate Programs

The School of Religion prepares a select number of graduate students to become specialists in the study and teaching of religion.

Theology

Theology majors eligible for the College of Liberal Arts Fellowships Program may earn a degree with honors through satisfactory completion of an honors essay during the senior year.

Graduate Programs

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Graduate Programs

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Financial Aid
The School of Religion has available three types of departmental financial aid for graduate students: teaching assistantships, research assistantships, and research scholarships. The department also may nominate eligible students for University of Iowa fellowships. The Gilmore Scholarship has been established for students interested in the relation of religion to culture, especially the visual arts. Financial aid awards are made annually on a competitive basis. First-year students ordinarily are appointed only as research assistants.

Admission
All applications for admission to graduate study must meet the general requirements of the Graduate College. In addition, the School of Religion ordinarily requires a combined verbal-quantitative score of 1050 on the Graduate Record Examination (GRE) Aptitude Test and a 3.00 grade-point average for admission to the M.A. program, and a combined verbal-quantitative score of 1100 on the GRE. Aptitude Test and a grade-point average of 3.20 for admission to the Ph.D. program. These letters of recommendation and the submission of a significant writing sample also are required.

Resources
In addition to Greek and Latin and modern languages, the University offers courses in Japanese, Chinese, Sanskrit, and Hindi. The School of Religion offers Hebrew regularly and other Semitic and Hindu languages as needed. The University of Iowa Hospitals and Clinics provide clinical opportunities for students in the M.A. program in religion and health. Individual courses on such topics as death and dying and medical ethics also utilize hospital personnel and facilities.

Courses
32099 Cooperative Education Internship 0 s.h.
331 Judaism-Curricular Tradition 3 s.h.
340 History of Religion in America 3 s.h.
353 Judaism and Society 3 s.h.
370 Quest for Human Destiny 3 s.h.
400 Seminar on Pragmatism and the Philosophy of Religion 3 s.h.
403 Living Religion of the East 3 s.h.
404 Living Religion of the West 3 s.h.
430 Introduction to Religious Studies 3 s.h.
431 Old Testament Survey 3 s.h.
432 Old Testament Survey II 3 s.h.
440 New Testament Survey 3 s.h.
450 New Testament Survey II 3 s.h.
460 Modern Hebrew 3 s.h.
470 Modern Hebrew 2 3 s.h.
480 Modern Hebrew 3 3 s.h.
520 Biblical Hebrew I 3 s.h.
521 Biblical Hebrew II 3 s.h.
522 Biblical Hebrew III 3 s.h.
523 Biblical Hebrew IV 3 s.h.
524 Biblical Hebrew V 3 s.h.
525 Biblical Hebrew VI 3 s.h.
530 Recent Developments in the History of the Hebrew Language 3 s.h.
531 Biblical Hebrew 7 3 s.h.
540 Introduction to Semitic Languages 3 s.h.
550 Language and Linguistics 3 s.h.
560 History of Religion in America 3 s.h.
570 The World of the Old Testament 3 s.h.
580 Hebraica 3 s.h.
590 Biblical Archaeology 3 s.h.
600 History of Religion in America 3 s.h.
610 Biblical Archeology 3 s.h.
620 Biblical Archeology 2 3 s.h.
630 Jewish Studies 3 s.h.
640 Jewish Studies 2 3 s.h.
650 Jewish Studies 3 3 s.h.
660 Jewish Studies 4 3 s.h.
670 Jewish Studies 5 3 s.h.
680 Jewish Studies 6 3 s.h.
690 Jewish Studies 7 3 s.h.
700 Jewish Studies 8 3 s.h.
710 Jewish Studies 9 3 s.h.
720 Jewish Studies 10 3 s.h.
730 Jewish Studies 11 3 s.h.
740 Jewish Studies 12 3 s.h.
750 Jewish Studies 13 3 s.h.
760 Jewish Studies 14 3 s.h.
770 Jewish Studies 15 3 s.h.
780 Jewish Studies 16 3 s.h.
790 Jewish Studies 17 3 s.h.
800 Jewish Studies 18 3 s.h.
810 Jewish Studies 19 3 s.h.
820 Jewish Studies 20 3 s.h.
830 Jewish Studies 21 3 s.h.
840 Jewish Studies 22 3 s.h.
850 Jewish Studies 23 3 s.h.
860 Jewish Studies 24 3 s.h.
870 Jewish Studies 25 3 s.h.
880 Jewish Studies 26 3 s.h.
890 Jewish Studies 27 3 s.h.
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960 Jewish Studies 34 3 s.h.
970 Jewish Studies 35 3 s.h.
980 Jewish Studies 36 3 s.h.
990 Jewish Studies 37 3 s.h.


**RHETORIC**

Chair: Douglas H. Trust
Professor: Margaret B. McDowell, Donald J. Chafe, Donna M. Trygg
Associate professor emeritus: William G. Clark, Robert S. Butler, David A. Work
Associate professors: Lou Kelly, Gene H. Kyppa, Connie M. Moore
Assistant professors: Frederick J. Antzack, Nancy K. Bailey, Ralph Coggin, Linda L. Hiltzin, Gino L. Mancinelli, Gregory J. Meyers

The Rhetoric Department offers direct opportunities, through oral and written communication, for students to evaluate their experiences and to explore and formulate possibilities for personal and individual growth.

Responsibility for varying sources of information and investigating, analyzing, evaluating, responding to the ideas, beliefs, and attitudes of other writers and speakers is integral functions of rhetoric instruction. However, it is to help students clarify their own thinking and improve their own communication.

Satisfactory proficiency in rhetoric is a requirement for successful graduation from the College of Liberal Arts (see the "College of Liberal Arts" section of the Catalog).

The Rhetoric Department's reading, speaking, and writing labs are available to all University students on a voluntary basis (see the "Student Life at Xav" section of the Catalog).

### Courses

#### D. thesis

1. Introduction and practice in writing and communicating, with focus on critical thinking, and research. Emphasizes research-based writing. Focuses on theoretical and practical aspects of analyzing, evaluating, and reviewing ideas, choosing and using materials for analyzing and supporting ideas, adapting style to audience and purpose, using technology, and evaluation.

2. Continued emphasis on and practice in oral and written communication, with focus on critical thinking, and research. Emphasizes research-based writing. Focuses on theoretical and practical aspects of analyzing, evaluating, and reviewing ideas, choosing and using materials for analyzing and supporting ideas, adapting style to audience and purpose, using technology, and evaluation.

3. Introduction to research and practice in speaking, writing, and critical reading, with focus on exposition, critical thinking, and research. Emphasizes research-based writing. Focuses on theoretical and practical aspects of analyzing, evaluating, and reviewing ideas, choosing and using materials for analyzing and supporting ideas, adapting style to audience and purpose, using technology, and evaluation.

4. Research and practice in written communication, with focus on critical thinking, and research. Emphasizes research-based writing. Focuses on theoretical and practical aspects of analyzing, evaluating, and reviewing ideas, choosing and using materials for analyzing and supporting ideas, adapting style to audience and purpose, using technology, and evaluation.

#### Undergraduate Program

Students working toward the Bachelor of Arts in Russian must meet the general requirements of Liberal Arts degree requirements (see the "College of Liberal Arts" section of the Catalog) and earn at least 28 semester hours of credit in advanced Russian coursework.

- 410: Intensive Conversation 3 s.h.
- 411: Intensive Conversation 3 s.h.
- 412: Third-Year Russian 1 s.h.
- 413: Fourth-Year Russian 1 s.h.

Three of the following:

- 415: Russian Literature in Translation 1890-1980 3 s.h.
- 416: Russian Literature in Translation 1890-1931 3 s.h.
- 415: Russian Literature in Translation 1931-1970 3 s.h.
- 415: Soviet Literature since Stalin 3 s.h.
- 418: Russian Culture 3 s.h.
- 419: Russian Civilization 3 s.h.

- 420: Russian Mapping 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 requisites a "substantial knowledge of the area's history, economics, political science, sociological disciplines, scientific specialties, demography, military-related skills, and in some cases cultural and agricultural background, to the depth knowledge of literature or linguistics without other substantive background may be viewed as overspecialization as a field of limited practical use.

Minor
To receive a minor in Russian, students must complete 13 semester hours of coursework over the course of two years. The curriculum consists of 6 semester hours of honors- level Russian courses and 2 semester hours of honors-level Russian seminars. Students may take up to 9 additional semester hours of honors-level Russian courses. The minor requires the completion of 13 semester hours of coursework at the University of Iowa, including the two-semester sequence 411-111 and 112.

Honors
Russian majors of junior or senior standing with a grade-point average of at least 3.30, both in Russian and overall may enroll in the honors program in Russian. An extensive reading program with discussions, regular reports, and a seminar paper complete 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 here is on the development of Russian literature, both as a historical and as a linguistic entity, with an emphasis on European models. Students are expected to attend the seminars, write literary texts, and participate as literary critics and develop the ability to have a unique perspective on a work of literature of a genre.

Students who elect a language-studies emphasis focus on the historical development of Russian and do advanced study of contemporary Russian literature, linguistics, morphology, syntax, and stylistics. Candidates for the master's degree must have completed the sequence 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. The program should include courses in related fields such as comparative literature, history, philosophical science, and the arts. Students in the thesis program may earn 6-8 semester hours of credit for their preparation. Prior to applying for the M.A. examination and during the thesis (where applicable), candidates must pass a comprehensive Russian language examination; they must also demonstrate a reading proficiency in either French or German.

Financial Aid
Aid is available to graduate students in the form of tuition scholarships, University fellowships, and teaching and research assistantships. These awards are made annually on a competitive basis. Teaching assistantships are usually not awarded to first-year students, although exceptions occasionally are made on the basis of advanced language skills. Applicants are considered only from students who have been admitted to the graduate program. Inquiries should be addressed to the departmental office.

Summer and Study Abroad Programs
The department strongly encourages graduate and undergraduate students to participate in intensive programs of language study both in the United States and in the Soviet Union. In recent years, an increasing number of students have studied in summer-, semester-, and academic-year programs at the Russian-American University in Moscow. Other students have assisted in the translation of Russian language skills in various intensive summer programs at major American universities, including the program at the University of Iowa. Inquiries should be directed to the departmental office.

Course Work for Nonmajors
The department offers a special-year program for students who need to develop a reading proficiency in Russian for research purposes. During the first year, the student will study the equivalent of 140-106, designed primarily for students who need to develop a reading proficiency in Russian for research purposes. The course 40-107 Russian in the Soviet Press is designed especially for students who wish to develop a reading proficiency to read the daily and periodical press. A number of other courses are open to all University students and are offered in English. These include survey courses in Russian and Soviet literature, culture, and civilization, and a seminar course in Tolstoy and Dostoevsky.

Special Activities
Russian circles is a student organization open to both undergraduates and graduates, it meets regularly for informal and planned social and educational activities and provides students with a valuable tool in developing conversation skills and to share experiences with other members of the University community. Participation in the French-Russian Language Lab in Pullen Residences Hall is encouraged by the staff and serves as a focal point for many Russian Circles members, including social meals with faculty and graduate students. A number of outstanding students are subsidized annually into Doleko Haina, the National Russian Honor Society, and honored at a commemorative gathering.

The Iowa Critical Languages Program
The Iowa Critical Languages Program prepares students to teach Russian, Chinese, or Japanese 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 or permanent residents of the United States. They may already hold a bachelor's degree and teaching certification.

Through a grant from the Fulbright Foundation, participating students receive full funding for a year of study abroad and two semesters of intensive language study, and a stipend for a full year of advanced study at Iowa. Participation in the program is open to those who have completed requirements in the language program in their final years after graduation. Additional information is available from the Office of Academic Affairs, 111 Jeppson 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, record players, soundproof recording rooms, drill rooms, and video facilities. An electronic classroom, a sound-proof room, and a library of books, tape, and cassettes are also available.

Courses

For Undergraduates and Graduates

411 Intro to Russian I 4 s.h.
412 Intro to Russian II 4 s.h.
415 Intro to Russian I 4 s.h.
416 Intro to Russian II 4 s.h.
415 Intro to International Russian 4 s.h.
415 Intro to International Russian 4 s.h.
415 Intro to International Russian 4 s.h.
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SCIENCE EDUCATION


Undergraduate degree offerings: B.A., B.S. in Science Education Graduate degrees offered: M.A.T., M.S. in Science Education

Science education is concerned with the interface between science and society. The academic programs in science education include preparation in more than one discipline of science; a consideration of science from a philosophical, historical, and sociological perspectives; an introduction to applied science (technology); and an education sequence because science instruction is transdisciplinary. Program planning requires the cooperation and involvement of a variety of University departments and colleges. Most of the professional requirements are drawn from courses offered in these various departments.

Undergraduate Programs

Major

The undergraduate program in science education prepares a transdisciplinary major in science for students interested in education.

The science education major is not intended to prepare students for advanced study or a particular career in science. However, graduates of the Science Education Program elect to pursue graduate studies in a single area of science, if they wish. 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:

1. Depth in a general area of science, equivalent to graduate work or a major in the area.
2. Preparation in a second area of pure science equivalent to two or four years of sequential study.
3. Introduction to two other fields of SCIENCE.
4. A specified proficiency in mathematics as a tool of science (more mathematics is required for the physical science emphasis than for the biological cases).
5. A view of science from a historical/philosophical/cultural perspectives; and
6. Experience with the application of scientific knowledge. Outlines for the six areas of emphasis offered in science education are as follows.

Biology Emphasis

At least 25 semester hours of the biology emphasis must be earned in 100-level courses.

Science

1. Introduction to Botany
2. Principles of Animal Biology
3. Microscopic and General Microbiology
4. Principles of Chemistry: Inorganic
5. Principles of Chemistry: Organic
6. Experimental Chemistry
7. Principles of Physical Chemistry
8. Principles of Geochemistry
9. Principles of Geology
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Mathematics

1. Calculus
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Physics

1. General Physics
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Chemistry Emphasis
At least 25 semester hours of the chemistry emphasis must be earned in 100-level courses.

Science
4-3-14 Principles of Chemistry I-II 6 s.h.
4-16 Principles of Chemistry Lab I 2 s.h.
4-12 Organic Chemistry I 3 s.h.
4-31 Physical Chemistry I 3 s.h.
4-14 Organic Chemistry Laboratory 3 s.h.
29-15-11 College Physics 7 s.h.
29-17-19 Physics III 12 s.h.
Physics electives 7 s.h.
22M-35-36 Engineering Calculus I-II 5 s.h.

Application of Science
97-102 Societal and Educational Applications of Physical Sciences 3 s.h.
97-103 Societal and Educational Applications of Biological Sciences 3 s.h.
97-104 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.
Transfer courses from applied areas such as engineering, agriculture, and technical schools may be substituted for 97-102 or 97-103 with the advisor's approval.

Physics Emphasis
At least 25 semester hours of the physics emphasis must be earned in 100-level courses.

Science
29-11-12 College Physics 8 s.h.
29-17-19 Introductory Physics I-II 8 s.h.
29-19 Introductory Physics III 4 s.h.
Physics electives 12 s.h.
22M-35-36 Engineering Calculus I-II 5 s.h.
4-33-14 Principles of Chemistry I-II 6 s.h.
4-18 Principles of Chemistry Lab I 7 s.h.
4-121 Organic Chemistry I 3 s.h.
4-31-1 Physical Chemistry I 3 s.h.

Application of Science
97-102 Societal and Educational Applications of Physical Sciences 3 s.h.
97-104 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.
Transfer courses from applied areas such as engineering, agriculture, and technical schools may be substituted for 97-102 or 97-103 with the advisor's approval.

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 Emphasis
Science
4-33-14 Principles of Chemistry I-II 6 s.h.
4-16 Principles of Chemistry Lab I 2 s.h.
29-11 College Physics 4 s.h.
2-13 Principles of Physical Geography 2 s.h.
12-4 Evolution and History of Life 4 s.h.
12-5 Introduction to Geology 4 s.h.
2-11 Introduction to Botany 4 s.h.
20-7 Principles of Zoology 2 s.h.
Science electives 17 s.h.
Electives must be chosen so as to include at least 21 semester hours in either 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 2-3 s.h.
97-130 Science in Historical Perspective 2-3 s.h.

Education Course Work for Teacher Certification
To qualify for a secondary teaching certificate in education to teach science, students must have a 2.50 grade point average and must complete all College of Liberal Arts General Education Requirements, the requirements for a science education major, and the following professional education courses:

Teaching Methods and Measurement
71-151 Science Methods I: Secondary School Seminar and Practicum 3 s.h.

97-102 Science Methods II: Middle/Secondary High School (taken with 97-151) 2 s.h.
97-102 Science Methods III: Resources, Research Teaching Strategies, and Development for K-12 Science 3 s.h.

12-5 Introduction to Geology 4 s.h.
Physics electives 8 s.h.
Chemistry electives 8 s.h.
Additional physical science electives (physics, geography, chemistry, mathematics, and physics) 12 s.h.

Application of Science
97-102 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.
97-103 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.
Minors in Science Teaching

Six science teaching minors are available for students majoring in either academic science, biology, physics, general sciences, earth science, and physical science. All require 23 semester hours of credit.

Students who wish to pursue a science teaching minor in earth science must consult a faculty member in the earth science department for advice on course selection.

All science teaching minors must take:

4. 74:154 Methods I: Elementary School Seminar and Physics 2 s.h.
2. 75:132 Methods II: Middle/Secondary School 2 s.h.
2. 75:133 Science Methods III: Research, Teaching Strategies, and Curriculum Development for K-12 Science 3 s.h.
3. 75:139, Section 40 Observation and Laboratory Practice in the Secondary School 3 s.h.
2. 97:128 Methods of Science 2 s.h.
2. 97:130 Science as a Historical Perspective 2 s.h.

In addition, they must take the following basic requirements in their chosen minors, as follows:

Biology
1. 2.1 Introduction to Botany 4 s.h.
2. 37.7 Principles of Animal Biology 5 s.h.
2. 97.103 Societal and Environmental Applications of Biological Sciences 3 s.h.
2. Biology Electives 9 s.h.

Chemistry
1. 4.1P-14 Principles of Chemistry I 6 s.h.
2. 4.1P-15 Principles of Chemistry Lab I 2 s.h.
2. 97.105 Societal and Environmental Applications of Physical Sciences 3 s.h.
2. Chemistry electives 10 s.h.

Physics
1. 29.11-12 College Physics 8 s.h.
2. Physics electives 10 s.h.
2. 97.108 Societal and Environmental Applications of Physical Sciences 3 s.h.

General Science
1. 2.1 Introduction to Botany 4 s.h.
2. 12.3 Principles of Physical Geology 2 s.h.
2. 12.4 Evolution and History of Life 4 s.h.
2. 12.5 Introduction to Geology 4 s.h.
2. 4.15 Principles of Chemistry I 6 s.h.
2. 29.11 College Physics Applications elective 3 s.h.

Earth Science
2. 12.3 Principles of Physical Geology and
2. 12.4 Evolution and History of Life 4 s.h.
2. 12.5 Introduction to Geology 4 s.h.
2. 29.11 General Astronomy and
2. 97.02 Societal and Environmental Applications of Earth Sciences and Environmental Sciences 3 s.h.

Special Rules

Since the Science Education Program involves many students preparing to become a variety of professional and graduate areas, 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 using any of the joint programs must complete their final 30 semester hours in residence at the College of Liberal Arts at The University of Iowa in order to be eligible for the B.A. or B.S. degree one year later.

No science core courses numbered 11 or credit from the CLAS Natural Science General Education requirement 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 to the Registrar's Office that such a course is equivalent to the one offered at that department.

Courses used for the major may not be taken pass/fail/credit 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 the state average.

Since mathematics forms as integral part of so many aspects of modern science, all science education students are urged to complete numerous important advanced courses in both pure and applied mathematics (including statistics and computer science) so that they may be qualified to do graduate work and quantitative research later.

Iowa-SETP and the Iowa Science and Humanities Symposium

The Iowa Secondary Student Training Program (Iowa-SETP) is a special summer program that emulates research experience for talented secondary students. Participants register for credit at undergraduate students and are placed in research laboratories in a variety of science areas. Various programs, such as Young Scientists and Minority Apprenticeship Programs, are features of Iowa-SETP when funding is available.

The statewide Iowa Science and Humanities Symposium sponsored by the U.S. Army Research Office often February involves about 180 students and some 40 teachers. The symposium stimulates valuable opportunities in science and related fields for students pursuing science research at The University of Iowa.

Graduate Programs

The Science Education Program offers graduate studies leading to the Master of Arts in Teaching, Master of Science, Educational Specialist, and Doctor of Philosophy.

These programs are described in the "College of Education" section of the Catalog under "Secondary Education." The Master of Science with specialization in elementary social science education is described in "Early Childhood and Elementary Education."
Current efforts also center on a regional network project that aims to assist surrounding states with developing ASDST-type efforts. Many of the ASDST activities are funded by NSF, the Iowa Innovation Program, and other similar programs such as the Iowa Daily Association. Many teachers involved in in-service programs are attracted to graduate degree programs.

Research
Each faculty member in science education is responsible for one or more areas of research. Major interests of faculty and graduate students include the following:

Studies of effective teaching and learning
Philosophy and sociology of science
Individualized learning
Computer-assisted instruction
Classroom interaction studies
Creativity
Student outcomes/perceptions of learning
Intelligent development and related to science teaching and learning
Education in less developed countries

International Programs
The science education faculty has collaborated on a number of international research and development projects in countries such as Brazil, India, Spain, Portugal, Israel, Nepal, Malaysia, Indonesia, Korea, Australia, Taiwan, South Africa, Mexico, and India. Several faculty exchanges have occurred and numerous cross-national studies have been undertaken.

Several international scholars have enriched the opportunities for graduate students in the Science Education Center. Many have enrolled from Indonesia, Korea, Malaysia, Nigeria, Taiwan, and other nations around the world. Staff-staff and student-student relations have been maintained and collaborative efforts undertaken each year.

Facilities
The facilities for science education programs at The University of Iowa are exemplary.

The Science Education Center is located in Van Allen Hall near the University campus.

Facilities include the main offices: faculty, secretary, and graduate student office space; a self-instructional computer laboratory; a photographic laboratory; instructional classrooms, including space for elementary and secondary school science methods courses.

The fundamental of Science courses: a large seminar room used as an instructional center for the history and philosophy component of science education and secondary teacher education programs; a departmental conference room used for seminars, conferences, workshops, and informal work with teachers, supervisors, and administrators; a common area for small group discussions and individual work; and a lounge.

Courses
The following are special courses offered by the Science Education Program to supplement the undergraduate emphasis on science education and to provide science options for elementary and special education majors.

Primaryly for Undergraduates

For Undergraduates and Graduates

For Undergraduates and Graduates

General Program
Major requirements for the B.A. degree in social science education total 60 semester hours. Of these, 36 semester hours must be completed in the major, including: 3 semester hours of core courses and 6 semester hours in seminars in social science; 18 semester hours in courses in psychology, sociology, and anthropological science; 9 semester hours in history; and 9 semester hours in courses in the social sciences.

Graduate Program

Teacher Certification Program

Students who plan to obtain a teaching certificate in history or other social science areas must declare a major in the academic field they wish to teach and complete a total of 36 semester hours in the major. They also must complete 12 semester hours in the field of social science. The field of social science must be in the area of social science. Majors and related fields may be elected in the following: U.S. history, non-U.S. (world)
Graduate Programs

Master of Arts

The department offers the Master of Arts with or without thesis.

Some graduates of this program are employed as teachers and others in business. Most are employed as teachers and others in business. The program is designed for individuals who have completed their bachelor's degree in history or one of the other social sciences and who wish to obtain additional preparation in the social sciences.

Doctor of Philosophy

Some graduates of the social studies education doctoral program hold administrative posts in institutions of higher education, serving as presidents, provosts, or deans. Others are pursuing graduate study, and some are working in colleges of education or curriculum.

Facilities

Students in social studies education have access to the faculty and facilities 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 WING Computing Center.

Additional information on social studies teacher certification programs is available from the office of the Division of Secondary Education, 220 South Lindquist Hall.

Graduate Programs

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Additional information on social studies teacher certification programs is available from the office of the Division of Secondary Education, 220 South Lindquist Hall.
Senior Year
42171 Social Work Practice II 3 s.h.
42192 Field Experience Seminar 1 s.h.
42193 Field Experience 3 s.h.
42197 Field Experience Intern 4-12 s.h.

Other Courses
During the undergraduate program, a minimum of 12 semester hours of course work is required in one department listed below. Most students select other 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.

American studies
Anthropology
Business
Economics
Education
English
History
Home economics
Journalism
Political science
Psychology
Recreation education
Religion
Sociology
Spanish

Honors
The School of Social Work has an honors program leading to a Bachelor of Arts with honors in social work. A 3.20 cumulative grade point average is required for participation in the program, which enables students to do in-depth study in subjects of interest to them.

Admission
A limited number of students are admitted to the honors program. Applications are processed each semester. Admission to the undergraduate program in social work requires

Completion, with at least a grade of C- in 42122 Introduction to Social Work, which can be taken the sophomore year.

At least a 2.30 grade-point average; and

Completion of the application process.

Exceptions may be made for persons who do not meet the grade-point requirement if they are strong candidates on the basis of other criteria.

More information is available from the coordinators of admissions at the School of Social Work.

Graduate Program
The Master of Social Work program prepares social workers for leadership in the profession and for the advanced social work practice in one of two concentrations. The program's general focus is on the systems and social change, both domestic and international. Its common goals, to be met through a set of foundation requirements, are to enable all students to understand the dynamics of human development and change; to learn how to enhance the responsiveness of human service organizations to the people they serve; to understand the link between society and the individual; and to acquire intervention skills for working with individuals, families, small groups, organizations, and communities.

The Master of Social Work degree requires at least 64 semester hours of credit in graduate courses approved by the school, including at least 24 semester hours earned after admission to the program.

Students who have completed a bachelor's social work program accredited by CSWE automatically receive 15 semester hours of advanced standing, and are excused from taking the foundation courses. Up to 18 semester hours of partial advanced standing is possible for students who have completed courses in a CSWE-accredited program but 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. Nine to twelve semester hours of graduate transfer credit is allowed for graduate work in social work.

The school operates a 12-month, sequenced program that begins in the fall semester. The summer session is a full semester, but is 60 credits as wide a range of classroom courses as is offered during fall and spring semesters. Students who require the entire 64 semester hours after admission generally complete the program the spring semester of their second year. Those who enter the program with an accredited baccalaureate degree in social work may elect to begin the program the January or September of their first semester (16 months), or may begin in the fall and carry a light load the first two semesters.

Students must maintain at least a 3.00 cumulative grade-point average; must be approved for M.S.W. candidacy; and must successfully complete a master's comprehensive examination, an integrative paper involving a practice prepare in conjunction with a practicum seminar to 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 M.S.W. degree requirements.

Foundation Courses
Human Behavior in the Social Environment 3 s.h.
Integrated Social Work Practice 3 s.h.
Social Welfare Program and Policy 3 s.h.
Social Work Research 3 s.h.
Racism and Discrimination 2 s.h.
Foundation Practicum in Social Work 3 s.h.

Concentration Courses
Advanced Practice 3 s.h.
Advanced Supervisorship 1 s.h.
Specialized Practice 1 s.h.

Other Required Courses
Community Organization and Social Development 3 s.h.
Advanced Policy 3 s.h.
Advanced Research 3 s.h.
Advanced Practicum 3 s.h.
Practicum Seminar 2 s.h.
Electives (may include thesis) 10 s.h.
First examination 6 s.h.
Total 90 s.h.

Concentrations
After admission, students choose between two concentrations: human development and change, and social administration and social development (HDC) concentration, is designed to help students develop grander competence as experts in personal development and change and as leaders in philanthropy for individuals and families, both traditional and nontraditional. The concentration prepares students to enhance individual, interpersonal, and social interactions through intervention with individuals, families, and small groups. It maintains a holistic perspective and develops awareness of the interconnectedness between individuals and the social, political, and economic environments in which they live. Consideration is given to the biological, psychological, cultural, and social origins of behavior.

The administration and social development (ASD) concentration equips students to be effective advocates and facilitators who are responsive to people and their needs in human organizations as well as to their neighborhoods and communities. The administration and social development (ASD) concentration is designed to enable students to develop practice techniques in administrative roles, such as supervisor, program developer, program monitor, and program administrator. Its focus is on the middle-management of large organizations or direction of small organizations.

The social development curriculum is embedded in the administration courses, for the most part. Course content emphasizes the teaching of skills in policy analysis, program evaluation, and research, conflict resolution, social policy analysis, and cooperation in the development process, both domestic or foreign. Its purpose is to promote more humanistic forms of representation and social change and to motivate students toward greater equity in roles and resources.

Off-Campus Centers
Full-time students begin their program in Iowa City. At the end of the first calendar year, some students stay in the Iowa City Cedar Rapids area for the remainder of
their program, including practicum and some are assigned to Des Moines or the Quad Cities for practicum. This generally benefits the student’s education.

The Des Moines Center, 125 miles west of Iowa City, also offers the program. Many students from the Des Moines Center participate in the social work faculty in the social work faculty members teach required courses and are available in Des Moines for student advising.

The Quad Cities Center is located on the Mississippi River in Davenport, 30 miles east of Iowa City. As part of the Quad Cities metropolitan area of 790,000 people, this center provides a wealth of practicum opportunities in the social services area. Included are regional and advocacy planning, agencies serving social and ethnic minorities, and programs for the elderly. Students who have a practicum assignment in the Quad Cities come 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 has a part-time M.S.W. program in Iowa City. Students are accepted into the program in the fall semester of each year. During the first two academic years, students complete two courses per semester. The third year is composed of two fall/winter semesters during which students enroll in practica and concurrent courses. The third year of the part-time program can be taken in Des Moines, except for courses in social policy and advocacy. Students from Des Moines take from the Des Moines campus at Central College campus in the area and commute to Iowa City for the other courses.

Joint Degree and Special Programs

The school has dual majors with the College of Law and the Department of Urban and Regional Planning for joint degrees. Students must be accepted to each degree program through their regular admission process. Up to ten semester hours in each program may be applied to requirements of the other program; the co-major would, however, require the total of 70 semester hours for completion.

Communication, our others. Students are encouraged to take courses in other departments—under or not they are pursuing joint degrees.

Students may be involved in special projects such as the National Resource Center on Family-Based Services and the School of Social Work gerontology program.

The school also offers students the opportunity to participate in translational research. Each spring, a policy seminar travels to Washington, D.C. Other urban, rural, national, and international seminars are available on a regular basis.

Graduate Admission

The criteria for admission for full-time and part-time study in the M.S.W. program are:

- A baccalaureate degree from an accredited college or university, with a reasonable distribution of classes in the social sciences and humanities. At least a 3.0 grade-point average for the junior and senior years of undergraduate study, or 12 semester hours of lower-division graduate course work (exceptions noted below).

- Three positive letters of recommendation, including one regarding academic abilities and one or more regarding social service or other work experience, and

- A personal statement addressing criteria specified by the School of Social Work.

- Previous experience in the human services, organized relief, field, or employment work is desired. Positions which are experience (cross-cultural and international experience and background), and minority status also will be given consideration.

- Foreign applicants must achieve a score at least 600 on the Test of English as a Foreign Language (TOEFL).

- It is the school's policy to admit 10 to 25 percent of the R.S.W. class with grade-point averages below 3.0. Applicants who are especially strong candidates on the basis of other criteria may be admitted. Since the school must maintain a heterogeneous student body, it makes special efforts to admit students who represent a diverse racial, ethnic, and socioeconomic backgrounds. Students with developmental disabilities are also encouraged to apply.

- Applications are accepted beginning September 1, and must be completed by January 1 to be considered for the next academic year. Generally, students begin the program in August. Full-time students entering the M.S.W. program with an accredited undergraduate social work degree may elect to begin the program in January and complete it in six semesters (18 months). Students who begin in January are considered part of the same class as students who begin in August. They must meet the application deadline for the fall semester.

- A complete statement of graduate school accomplishment 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 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 their academic advisor regarding availability of funds from the School of Social Work. Aid received through the Office of Student Financial Aid does not preclude students from considering aid through the School of Social Work.

Various types of aid administered by the School of Social Work include research and teaching assistantships, work-study stipends, loans, scholarships, and low interest Eleanor K. Taylor loan funds. Aid is available from other sources, such as Social Security benefits, tuition grants, International Scholarships Program, and a few agencies that provide stipends for graduate students in practicum.

Courses

Most courses are not available every semester.

Primarily for Undergraduates

1212 Introduction to Social Work 3.0

Academic study of social and political settings and methodologies of social work practice. Emphasis includes historical development of social services, social conditions and their causes, the role of social work in the health-delivery system, and the role of the social worker in the helping profession.

1213 Substance Use and Abuse 3.0

Introduction to the biological, psychological, sociological, and cultural factors influencing the use and abuse of drugs and alcohol.

1221 Social Work Practice I 3.0

An interdisciplinary approach to the study of social work practice and evaluation of the effects of social work on clients and society. The role of the social worker in the helping professions.

1222 Social Work Practice II 3.0

These courses are designed for students in the Masters in Social Work program who are preparing for careers in social work practice.
SOCIOLOGY

Title: Edward J. Laub

Assistant professor: Brian MacKie, Robert Noell Parker, Raul Rojas, John R. Statham, Susan G. Hwang

Graduate degree offered: M.A. in Criminology and Corrections, M.A. in Sociology

Undergraduate Programs

The undergraduate major in sociology provides a liberal arts education. The program is not oriented to a specific career field, but completion of a bachelor's degree in sociology prepares students for graduate study and work in fields such as social services, criminal justice, personnel, applied social research, community organizations, and social science teaching in secondary schools. The program also provides a foundation for graduate or professional study in social work, urban planning, law, criminal justice, social policy, and similar areas. Finally, the degree prepares students for work toward advanced degrees in sociology, which qualify them for college or university teaching and academic, private and governmental research positions.

Undergraduate students majoring in sociology may elect either a Bachelor of Arts or a Bachelor of Science degree. Students interested in careers in the physical, biological, or social sciences are encouraged to seek the Bachelor of Science degree.

Students wishing to major in sociology must complete 32 semester hours of course work in sociology, including:

1. Introduction to Sociology

2. Introduction to Sociology: Problems

3. Social Theory

4. Social Institutions

5. The Family

6. Race and Ethnicity

7. Gender

8. Social Stratification

9. Social Movements

10. Social Change

11. Social Interaction

12. Social Psychology

13. Social Institutions

14. Social Policy

15. Social Research

16. Social Problems

17. Social Theory

18. Social Change

19. Social Movements

20. Social Institutions

21. Social Policy

22. Social Research

23. Social Problems

24. Social Theory

25. Social Change

26. Social Movements

27. Social Institutions

28. Social Policy

29. Social Research

30. Social Problems

31. Social Theory

32. Social Change

33. Social Movements

34. Social Institutions

35. Social Policy

36. Social Research

37. Social Problems

38. Social Theory

39. Social Change

40. Social Movements

41. Social Institutions

42. Social Policy

43. Social Research

44. Social Problems

45. Social Theory

46. Social Change

47. Social Movements

48. Social Institutions

49. Social Policy

50. Social Research

51. Social Problems

52. Social Theory

53. Social Change

54. Social Movements

55. Social Institutions

56. Social Policy

57. Social Research

58. Social Problems

59. Social Theory

60. Social Change

61. Social Movements

62. Social Institutions

63. Social Policy

64. Social Research

65. Social Problems

66. Social Theory

67. Social Change

68. Social Movements

69. Social Institutions

70. Social Policy

71. Social Research

72. Social Problems

73. Social Theory

74. Social Change

75. Social Movements

76. Social Institutions

77. Social Policy

78. Social Research

79. Social Problems

80. Social Theory

81. Social Change

82. Social Movements

83. Social Institutions

84. Social Policy

85. Social Research

86. Social Problems

87. Social Theory

88. Social Change

89. Social Movements

90. Social Institutions

91. Social Policy

92. Social Research

93. Social Problems

94. Social Theory

95. Social Change

96. Social Movements

97. Social Institutions

98. Social Policy

99. Social Research

100. Social Problems
Sociology Teaching Major

To major in sociology and qualify for a teaching certificate, students must complete the following:

- All departmental requirements for either a B.A. or B.S. degree (a minimum of 30 semester hours);
- Three semester hours of course work in each of two related fields, chosen from economics, geography, American history, world history, political science, and psychology (24 semester hours required in psychology), and;
- The professional courses required for certification (26-29 semester hours).

Honors

The College of Liberal Arts Honors Program provides a stimulating and integrative educational experience for undergraduate majors seeking to achieve a high level. To qualify for the honors program in sociology, students must have a grade-point average of 3.25 overall and in sociology courses. The honors curriculum consists of limited-enrollment classes in which students explore in depth areas of mutual interest with faculty and other honors students. The special requirements for an honors degree in sociology are completion of the honors seminar (34:100), one-paired undergraduate course or graduate course approved by the honors director, and an honors thesis. The honors thesis gives students an opportunity to do sociological research in consultation with a faculty member of the student's choice. As an option, honors students may take the honors sections of 34:1 Introduction to Sociology: Principles, thereby waiving the course requirement of 34:2 Introduction to Sociology: Problems for a degree in sociology.

Graduate Programs

The graduate programs in sociology are preparation for professional careers. Depending on which program the student chooses, the master's program prepares the student for doctoral studies or for professional positions applying sociology. The doctoral program has a research emphasis and prepares students to become sociologists for positions in college and university, or research in academic, private, and government positions. Opportunities for research using survey, experimental, and observational methods are readily available in the department.

Master of Arts

The M.A. degree in sociology requires 30 semester hours with thesis or 28 semester hours without thesis. The program without thesis is intended for persons who desire a terminal degree and for whom a wider range of course content in sociology is appropriate.

All candidates for the M.A. degree must complete the following with grades of B or higher:

- 34:25 History of Sociological Theory
- 34:251 Sociological Theory
- 34:254 Elementary Statistics and Data Analysis
- 34:255 Sampling, Measurement, and Observation Techniques

M.A. in Criminal Justice and Corrections

This program is designed for individuals who wish to work in criminal justice. Since it is assumed that a sociological orientation and background are extremely valuable for such work, the major emphases of the program is sociological. It also is recognized that specialized knowledge is essential to performance of specific 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 so as to broaden their knowledge. The flexible curriculum allows the student, in consultation with his 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 30 graduate credits, a 3.00 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 six semester hours of credit for graduate work that they take after entering the joint program toward the 90 hours required for the J.D., even though these hours are also credited toward the M.A. in sociology.

At the discretion of the student's M.A. consultant, the Department of Sociology may apply up to 12 semester hours of credit for law course work toward the M.A. degree. This cross-enrollment allows students to receive the J.D. and the M.A. by taking less course work than would be necessary if the two degrees were pursued independently. This program is highly individualized, allowing students to explore various aspects of the relationship between law and society.

Doctor of Philosophy

The Ph.D. degree in sociology requires 60 minimum semester hours of graduate-level course work, including the pass/fail course 43:521: Intermediate Statistics and Data Analysis and 3 elective semester hours in research methodology. Candidates also must pass comprehensive examinations and write a dissertation.

All doctoral candidates are examined in the basic area of sociology—theory, history of theory, methodology, and statistics—and in one major and one minor area chosen from the areas represented by the faculty, such as social psychology, deviance, criminology, family, social stratification, organizations, demography, theory, methods, and statistics. A description of faculty interests is available upon request.

A detailed statement of regulations for graduate study also is available upon request. Prospective doctoral candidates should examine this statement carefully.

Admission

Admission to graduate study in sociology usually requires a minimum undergraduate grade-point average of 3.00 and a test score of 1100 from the quantitative plus verbal sections of the Graduate Record Examination (GRE) Applicants Foreign students whose native language is not English should submit scores from the TOEFL exam. In addition to fulfilling the Graduate College's requirements for admission (see the "Graduate College" section of the Catalog), the applicant must complete a departmental application statement and use its personal reference forms in obtaining three letters of recommendation.

Applications should be submitted at least two months before the start of the academic session for which admission is requested. The deadline for applying for departmental financial support is March 1, although evaluation of applications begins in January.

Admission decisions are based on consideration of prior academic performance, personal reference letters, scores on the GRE-quantitative and verbal, and the applicant's statement of reasons for pursuing advanced work in sociology. The department has no specific undergraduate course requirements for admission, but a background in the social sciences with some mathematical training is helpful. A foreign language is not required for admission and there are no foreign language requirements for either the M.A. or Ph.D. degrees in Sociology, however, concern over retention should be directed to the chair of the admissions committee, Department of Sociology.

Admission to the M.A. program in criminal justice and corrections requires a B.A. or B.S. degree, a grade-point average of 2.75, and a test score of 1100 on the quantitative plus verbal sections of the GRE.
and linguistics track requires a minimum of 35 semester hours of credit in course work, distributed as follows:

35.107 Advanced Spanish Language 4 s.h.
35.109 Tertiary Spanish Language I 4 s.h.
35.122 Introduction to Hispanic Linguistics 3 s.h.
35.120 Spanish-Spanish-American, Portuguese, or Brazilian literature and culture 6 s.h.

At least 12 semester hours must be taken from the courses listed above; at least two of the three groups of courses must be represented.

Language

35.106 Spanish-English Contrivance Analysis 3 s.h.
35.118 Business Spanish 3 s.h.
35.120 Advanced Spanish Grammar 3 s.h.
35.111 History of the Spanish Language 3 s.h.
35.112 Spanish Phonology 3 s.h.
35.113 Structure of the Spanish Language 3 s.h.
35.114 Topics in Spanish Syntax 3 s.h.
35.119 Introduction to Bilingualism 3 s.h.

Portuguese

35.100 Accelerated Portuguese 5 s.h.
35.119 Topics in Portuguese Linguistics 3 s.h.
35.122 Portuguese for the Provisions 3 s.h.
35.112 Advanced Portuguese Language 3 s.h.

The remaining 6 semester hours of elective course work must be taken at the 100 level in either the Department of Spanish and Portuguese, or the Department of Linguistics.

No more than 6 of the 35 semester hours required in the language and linguistics track may be taken in English.

Latin American Studies Track

Designed for students interested in pursuing interdisciplinary study of Spanish-American and Brazilian literature on the basis of knowledge of both Spanish and Portuguese, or for students who want to prepare themselves for graduate work in the humanities or social sciences, for attendance at professional schools such as law, journalism, or business, or for a variety of business careers, the Latin American studies track requires a minimum of 35 semester hours of credit in course work, distributed as follows:

35.100 Accelerated Portuguese 5 s.h.
35.119 Additional Spanish or Portuguese language or linguistics 3 s.h.
35.120 Spanish-American or Brazilian culture 6 s.h.
35.120 Spanish-American literature 6 s.h.
35.116 Laboratory Equipment Procedures

35.117 BASIC Program for Foreign Language Computer-Assisted Instruction

Spanish and Portuguese • Liberal Arts

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Spanish-American Studies Seminar or another approved undergraduate seminar 3 s.h.
Electives that are approved courses in the Latin American Studies Program 9 s.h.

No more than 6 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 also may count their work toward completion of the Latin American Studies Certificate Program. For additional information, students should contact an undergraduate adviser or the chair of the Latin American Studies Program.

Literature and Culture Track

Designed 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 schools such as law, journalism, or business, or for a variety of business careers, the literature and culture track requires a minimum of 34 semester hours of course work, distributed as follows:

35.107 Advanced Spanish Language 4 s.h.
Additional Spanish or Portuguese language or linguistics 6 s.h.
Spanish and Spanish-American literature and culture 24 s.h.

Among the 24 semester hours taken in literature and culture, at least 6 semester hours must be taken in the Spanish-American area, and 6 semester hours in the Spanish-American culture.

No more than 3 of the 34 semester hours required in the literature and culture track may be taken in English.

High School Teaching Certification in Spanish

Spanish majors who want certification to teach high school should complete the requirements listed above for the language and linguistics track. Several courses in the College of Education also are required, as is one semester of student teaching, taken in the senior year.

Minor in Spanish

A minor in Spanish requires 15 semester hours of course work. Spanish majors taken at The University of Iowa or in a University of Iowa foreign language program, including 12 semester hours at the 100 level. The following courses may not be elected to fulfill minor requirements:

35.861 Elementary Spanish I 3 s.h.
35.862 Intermediate Spanish I 3 s.h.
35.863 Language Teaching Practicum 3 s.h.
35.116 Methods, Forms, Language 3 s.h.
35.115 Laboratory Equipment Procedures

35.117 BASIC Program for Foreign Language Computer-Assisted Instruction

No more than 3 semester hours may be applied toward the minor from departmental courses taught in English.

Students who plan to take the Spanish minor in teaching on the secondary level or in a bilingual program are encouraged to complete the language and linguistics track of the Spanish major, thus earning a double major.

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.

Foreign Study Programs

The department participates in eight study-abroad programs. Its co-sponsor programs include the Iowa Regents Hispanic Institute (Burgos, Spain) and the CIE Summer Program in Mexico. Included in its semester or year-long programs are the CIE Language and Area Studies Program (Alcalas, Spain), the CIE Language and Society Program (Seville, Spain), the CIE Liberal Arts Program (Seville, Spain), the CIE Business and Society Program (Seville, Spain), the CIE Spanish Language and Caribbean Area Studies Programs (Sancti Spiritus, Dominican Republic), and the University Studies in the Bayou Country Consortium (San Sebastian, Spain).

Participation in a number of different programs allows the department to offer study-abroad opportunities that take into account a student's interests and needs. Credit earned in these or other study-abroad programs may be applied toward the requirements for the Spanish major or minor. The amount of credit that may be accepted varies according to the program. Interested students should contact the department's study abroad adviser.

Honors in Spanish

Admission to the honors program in Spanish requires a minimum 3.20 cumulative grade-point average and a minimum 3.20 average in Spanish. Graduates in the honors track in Spanish require, in addition to the semester hours for the various major tracks described above, 6 semester hours earned in 35.198 Honors Spanish Literature and/or 35.197 Honors Spanish Language, an honors essay in Spanish, and an oral examination conducted in Spanish.

Bachelor of Arts in Portuguese

Beginning courses in Portuguese are for students without previous foreign language study or experience. Classes are small,
Latin American Studies Program

The department plays an important and active role in the Latin American Studies Program, an interdisciplinary undergraduate program focusing on the history, politics, social organization, economy, art, and literature of Latin America. Work in the program leads to a certificate or major 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 coming to the required senior seminar. For further information on the Latin American Studies Program, see "Latin American Studies Program" in this section of the Catalog.

Graduate Programs

Master of Arts in Spanish

Candidates for the M.A. degree must have completed the equivalent of the undergraduate Spanish major with at least a 3.00 cumulative grade-point average. Deficiencies may be remedied with the appropriate course work.

The following course work is required.

- 35:209 Foreign Language Teaching Methods 3 s.h.
- 35:203-204 Graduate Spanish Linguistics 1-2 7 s.h.
- 35:205 Historical Biographical Romance Language 7 s.h.
- 35:206 Spanish Literature 6 s.h.
- 35:207 Spanish-American Literature 6 s.h.

Four elective courses at the 300 level or the advanced 100 level, no more than 2 (3 semester hours) of which may be taken outside the department; the required minimum is 26 semester hours for the M.A. program.

Maximum Study Loads

Maximum course registration is 15 graduate semester hours during fall or spring semesters and 8 graduate semester hours during summer sessions. One-quarter- and one-third-time teaching assistants are permitted to register for the maximum study loads. One-half-time teaching assistants may register for not more than 12 semester hours in fall or spring semesters, and for not more than 8 semester hours during summer sessions. Additional semester hours may be taken only with Graduate College approval.

Transfer Credit

A maximum of 9 semester hours of graduate credit in approved courses may be transferred from other institutions toward the 36-semester-hour requirement for the M.A. degree.

Teaching Certification

Exclusive of the student-teaching requirement, graduate students may take the courses necessary for secondary teaching certification, including the 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 literature and two linguistics areas, or three literature areas. If more than one literature area is represented, at least one must be in Spanish literature and at least one must be in Spanish-American literature. The examining committee is composed of four departmental faculty members.

Doctor of Philosophy in Spanish

Two doctoral programs are available. The first is dedicated to Hispanic literatures. Before the comprehensive examination, candidates must complete the equivalent of three years of college-level study in another Romance language and become well-acquainted with its literature in limited areas of specialization (a Portuguese-Brazilian program is especially recommended). The candidate is also expected to complete the equivalent of a year of college Portuguese; and complete the equivalent of one year of college-level study of another approved foreign language. This language must be Latin for those who write the dissertation on a pre-1700 topic.

The second doctoral program provides for specialization in Spanish linguistics. Before taking the comprehensive examination, candidates must complete the equivalent of 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 I: Literature Track

The following course work is required.

- M.A. courses or equivalent transfer credits 36 s.h.
- 35:281 Introduction to Contemporary Literary Theory 3 s.h.
- Three 300-level seminars 6 s.h.

Eight elective courses at the 200 level or the advanced 100 level, no more than three (9 s.h.) of which may be taken outside the department, bringing the total semester hours to the required minimum of 72 in the Ph.D. program.

Program II: Linguistics Track

The following course work is required.

Courses for Undergraduate Nonmajors

Undergraduate students in other disciplines may meet part of the College of Liberal Arts General Education Requirements in humanities and foreign civilization and culture with 35:203 Contemporary Latin American Narrative and 35:20 Contemporary Brazilian Narrative, in which the readings are in English. The department offers several other literature, film, and cultural survey courses that are taught in English and are of general interest.
Ph.D. Qualifying Examination

All doctoral students are advised conditionally to the Ph.D. program and must take a qualifying examination during their second semester of Ph.D. study. Upon satisfactory completion of the Ph.D. qualifying examination, students are advised to the Ph.D. program on a regular basis.

The purpose of the Ph.D. qualifying examination is to assess a doctoral student's achievement of the scholarly research abilities, in analytical thinking and critical reading, and level of sophistication in literary or linguistic argumentation. The exam marks the formal occasion on which doctoral students begin to gain intellectual focus to their program of study. Because it affords opportunities for both student initiative and faculty advice in defining a doctoral student's academic goals, the Ph.D. qualifying examination is significant in preparing doctoral students to take the Ph.D. comprehensive examination and to write the Ph.D. dissertation.

The Ph.D. qualifying examination is administered in both written and oral parts and includes the following:

- Written presentation and subsequent oral defense of a research paper.
- Written analysis of a single text in Hispanic literature or a single problem in Spanish linguistics, that is assigned to the candidate 30 minutes before a two-hour written examination. The test or problem selected is taken from a short reading list that has been previously agreed upon among the candidate and his or her examiners, or, in the case of a linguistics qualifying examination, the problem selected also may be taken from the range of the candidate's previous course work.
- Oral examination on major literary or linguistic works with which the candidate may be expected to be familiar, either from reading lists or from previous course work.
- Excluding preparation of the research paper and the 30 minutes of advance reflection on the test or problem presented to the candidate for analysis, the length of the written portion of the Ph.D. qualifying examination is two hours. The oral portion, which includes defense of the research paper, discussion of the written examination, and discussion of selected major literary or linguistic works, is usually one and one-half hours long. The comprehensive examination is composed of five departmental faculty members.

Comprehensive Examination

The purpose of the Ph.D. comprehensive examination is to determine whether the candidate has gained sufficient breadth and depth of research knowledge in Hispanic literatures or in Spanish linguistics to enter the profession as a teacher-scholar. The Ph.D. comprehensive examination is administered in both written and oral parts. The written portion consists of a three-hour examination in each of four areas, detailed below, an oral examination follows, usually lasting two hours. The examining committee is composed of five departmental faculty members.

- Literature Track
  - A broad area in Spanish literary history: a reading list is determined by the student and his or her advisory committee.

- Linguistics Track
  - Contemporary Spanish syntax: a reading list is determined by students and their advisory committees.

All students are strongly urged to take the Spanish Language Test, which is offered at regular intervals on campus. In the absence of test results, undergraduate students who have had no less than two years of high school study in Spanish are placed in their first- or second-semester class. Students with two or more years of high school Spanish are placed in a third- or fourth-semester class. Prospective and entering students should consult a departmental advisor. Students who want more advanced placement must take the placement test. Transfer students who have taken college Spanish at other institutions will be placed according to previously completed courses. Students may, except with the department chair's approval, take an elementary course for credit after having completed a higher-level course for which the elementary course or its equivalent is a prerequisite.
Spanish Literature: Selections from various novels, short stories, and poetry.

35.154 Nineteenth-Century Spanish Literature
3.1 This work is a part of the Spanish Literature 3 series. It provides a comprehensive overview of the nineteenth-century Spanish literature, focusing on key themes, authors, and literary movements.

35.164 Readings in Hispanic Literature
This work is a part of the Readings in Hispanic Literature series. It presents a selection of works from the Hispanic literature, covering various genres and periods.

35.176 Literature of the Discovery and Conquest of Spanish America
This work is a part of the Literature of the Discovery and Conquest of Spanish America series. It explores the impact of the Spanish conquest on the indigenous cultures and societies.

35.177 Spanish American Literature from the Conquest to 986
This work is a part of the Spanish American Literature from the Conquest to 986 series. It covers the early history of literature in the Americas, focusing on the colonial period.

35.178 Spanish American Literature of the Nineteenth Century
This work is a part of the Spanish American Literature of the Nineteenth Century series. It examines the literature of the period, including social and political issues.

35.179 Spanish American Literature of the Twentieth Century
This work is a part of the Spanish American Literature of the Twentieth Century series. It explores the literary trends of the twentieth century, including modernism and postmodernism.

35.180 Spanish American Literature of the Twenty-First Century
This work is a part of the Spanish American Literature of the Twenty-First Century series. It examines contemporary literature, focusing on diversity and innovation.

35.181 Literature in 3D
This work is a part of the Literature in 3D series. It presents a selection of works that are available in 3D format.

35.182 Spanish Literature: Primary for Graduates
This work is a part of the Spanish Literature: Primary for Graduates series. It is designed for graduate students, focusing on advanced reading and comprehension.

35.183 Spanish Language and Literature: Studies in Spanish and Portuguese
This work is a part of the Spanish Language and Literature: Studies in Spanish and Portuguese series. It explores the relationship between language and literature in the Spanish-speaking world.

35.184 Contemporary Spanish
This work is a part of the Contemporary Spanish series. It covers contemporary literature, focusing on the social and cultural issues of the twenty-first century.

35.185 Nineteenth-Century Spanish Literature
This work is a part of the Nineteenth-Century Spanish Literature series. It presents a selection of works from the nineteenth century, focusing on key themes and authors.

35.186 Twentieth-Century Spanish Literature
This work is a part of the Twentieth-Century Spanish Literature series. It presents a selection of works from the twentieth century, focusing on key themes and authors.

35.187 Spanish American Literature
This work is a part of the Spanish American Literature series. It presents a selection of works from Spanish America, focusing on key themes and authors.

35.188 Spanish American Literature of the Nineteenth Century
This work is a part of the Spanish American Literature of the Nineteenth Century series. It explores the literature of the period, focusing on social and political issues.

35.189 Spanish American Literature of the Twentieth Century
This work is a part of the Spanish American Literature of the Twentieth Century series. It explores the literature of the period, focusing on social and political issues.

35.190 Spanish American Literature of the Twenty-First Century
This work is a part of the Spanish American Literature of the Twenty-First Century series. It explores the literature of the period, focusing on social and political issues.

35.191 Nineteenth-Century Spanish Literature
This work is a part of the Nineteenth-Century Spanish Literature series. It presents a selection of works from the nineteenth century, focusing on key themes and authors.

35.192 Twentieth-Century Spanish Literature
This work is a part of the Twentieth-Century Spanish Literature series. It presents a selection of works from the twentieth century, focusing on key themes and authors.

35.193 Spanish American Literature
This work is a part of the Spanish American Literature series. It presents a selection of works from Spanish America, focusing on key themes and authors.

35.194 Spanish American Literature of the Nineteenth Century
This work is a part of the Spanish American Literature of the Nineteenth Century series. It explores the literature of the period, focusing on social and political issues.

35.195 Spanish American Literature of the Twentieth Century
This work is a part of the Spanish American Literature of the Twentieth Century series. It explores the literature of the period, focusing on social and political issues.

35.196 Spanish American Literature of the Twenty-First Century
This work is a part of the Spanish American Literature of the Twenty-First Century series. It explores the literature of the period, focusing on social and political issues.

35.197 Spanish American Literature of the Twentieth Century
This work is a part of the Spanish American Literature of the Twentieth Century series. It explores the literature of the period, focusing on social and political issues.

35.198 Spanish American Literature of the Twenty-First Century
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35.199 Spanish American Literature of the Twentieth Century
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35.200 Spanish American Literature of the Twenty-First Century
This work is a part of the Spanish American Literature of the Twenty-First Century series. It explores the literature of the period, focusing on social and political issues.

35.201 Spanish American Literature
This work is a part of the Spanish American Literature series. It presents a selection of works from Spanish America, focusing on key themes and authors.

35.202 Spanish American Literature of the Nineteenth Century
This work is a part of the Spanish American Literature of the Nineteenth Century series. It explores the literature of the period, focusing on social and political issues.

35.203 Spanish American Literature of the Twentieth Century
This work is a part of the Spanish American Literature of the Twentieth Century series. It explores the literature of the period, focusing on social and political issues.

35.204 Spanish American Literature of the Twenty-First Century
This work is a part of the Spanish American Literature of the Twenty-First Century series. It explores the literature of the period, focusing on social and political issues.

35.205 Spanish American Literature
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35.206 Spanish American Literature of the Nineteenth Century
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35.207 Spanish American Literature of the Twentieth Century
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35.208 Spanish American Literature of the Twenty-First Century
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35.209 Spanish American Literature
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35.210 Spanish American Literature of the Nineteenth Century
This work is a part of the Spanish American Literature of the Nineteenth Century series. It explores the literature of the period, focusing on social and political issues.

35.211 Spanish American Literature of the Twentieth Century
This work is a part of the Spanish American Literature of the Twentieth Century series. It explores the literature of the period, focusing on social and political issues.

35.212 Spanish American Literature of the Twenty-First Century
This work is a part of the Spanish American Literature of the Twenty-First Century series. It explores the literature of the period, focusing on social and political issues.
SPEECH PATHOLOGY AND AUDIOLOGY

Chair: John W. Fulkas

Professors: Frank R. Albin, John W. Fulkas, James D. Hardy, Edith S. Larcher, Kenneth L. Mill, Hughland L. Morris, Arnold M. Snider, Jr., Charles C. Strommenbach, Horace R. Tate, J. Bruce Toolebin, Donald J. Vinnikoff

Assistant Professors: Ernestine F. Curtin, Dorothy H. Sherrman, David N. Wulff, William K. Young

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Assistant Professor: J. Neil Johnston

Lecturer: Mary V. Rice, Andy L. White, Patricia E. Zellmer

Instructor: Judith A. Berrier

Adjunct Assistant Professor: Farzooch Atsalas, Galen H. Bell, John D. Bixler, John D. Blaxton, John G. Colby, Robert L. Hahn, Robert L. Schaeff, Gerald L. Zimmerman


The courses and degree programs of the Department of Speech Pathology and Audiology are planned to meet the needs of students who desire careers in the fields of speech and hearing. The department also offers courses for students with vocational and professional goals in other fields—e.g., engineering, psychology, education, speech, theatre arts, dentistry, and medicine—whose preparation may be enriched by the study of speech and hearing processes and their disorders.

Advanced degree holders in this field provide clinical services for people with speech, hearing, or language problems in hospitals, community clinics, rehabilitation facilities, and elementary and secondary schools. They teach in colleges and universities and conduct research in laboratories concerned with communication processes and disorders. All professional programs of the department leading to the M.A. degree are accredited by the Educational Standards Board of the American Speech-Language-Hearing Association.

Undergraduate Programs

Since the "master's degree or its equivalent in the minimum level of preparation for persons seeking professional careers in this field, the undergraduate curricula leading to B.S. or B.A. degrees in speech and hearing science do not qualify an individual to work professionally in the field, but primarily prepare students for graduate work instead. Hence, the undergraduate programs emphasize the normal processes of speech, hearing, and language. Undergraduate programs also may be taken by students entering College of Liberal Arts degrees who do not want careers in this field. These three- or four-year programs of the General Education Requirements in social sciences are reserved for students majoring in speech and hearing science.

The major requirements for the B.S. or B.A. degree in speech and hearing science are as follows:

3.15 Introduction to Speech and Hearing Processes and Disorders

3.15 Introduction to Articulatory and Acoustic Phonetics

3.11 Fundamentals of Speech Science

3.11 Introduction to Hearing Science

3.11 Psychology of Language

3.11 Language Development

7P1/25-7P1/25 Introduction to Statistical Methods

3P1-25 Elementary Statistics and Inference

3P1 Elementary Psychology

3P1 General Psychology

3P1 Articulatory and Acoustic Phonetics

Group A

One of the following:

3P1/108 Basic Aspects of Aging

3.15 Introduction to Clinical Phonetics

3.16 Personality

3.16 Psychology of Sex

3.16 Abnormal Psychology

3.16 Aging and Society

4P1 Multidisciplinary Perspectives on Aging

11P4 136 Aging: A Cross-Cultural Perspective

Group B

One of the following: courses marked with an asterisk (*) are preferred.

*1P1 Introduction to Child Psychology

3P1 Development of Children's Social Behavior

3P1 Learning and Motivation in Children

3P1 Cognitive Development in Children

3P1 Individual Differences in Developmental Psychology

3P1 Early Childhood and Development of the Young Child

3P1 Developmental Psychopathology

3P1 Behavior Modification

1P1 Studies leading to a bachelor's degree are required for all students. Students must complete at least 26 hours of clinical observations or a prerequisite for professional practice. This requirement is satisfied by completion of independent observations or required observations made for elective departmental 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 3.20 grade-point average in all major course work and all course work at the University at any time during their undergraduate study, students who have earned a minimum grade-point average of 3.20 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, this classification must be certified as an honors student in the College of Liberal Arts and must complete both 333 Honors Seminar and 333B Honors Thesis.
Graduate Programs

Master of Arts

The M.A. program in speech pathology and audiology may be a professional program to prepare for state licensing or immediate placement in clinical service positions, or it may be a general program of graduate study leading to additional study for the Ph.D. degree. The program of study for an M.A. with professional emphasis is designed to ensure that upon graduation the student will meet 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 first 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 students' 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.

The department offers the M.A. with various emphases. Each requires a minimum total of 36 semester hours of graduate credit for a master's degree.

All M.A. students must complete at least 4 semester hours of research registration. This research registration may be by air combination of enrollment in seminars (at 2 semester hours each) and/or research hours. Completion of the research hours registration may consist of work toward a thesis or preparation of a paper involving one or a combination of the following: literature review, prospectus development, and presentation of data. A paper is required at the end of each semester's enrollment. An exception to this requirement can be made in the case of research hours leading to a thesis.

Candidates for an M.A. degree with professional emphasis are not required to complete a thesis, although all students demonstrating research aptitude and interest are encouraged to do so. All candidates preparing for the M.A. degree without thesis are required to take final written 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 academic progress.

M.A. with Research Emphasis

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

Students seeking an M.A. with professional emphasis must fulfill requirements under A below and, depending on specific interests, the courses listed under B, C, D, or E, below.

A. All Majors

* 3:116 Neural Processes of Speech and Language 3 s.h.
* 3:182 Psycholinguistic Development and Disorders 3 s.h.
* 3:183 Hearing Loss and Audiology 4 s.h.
* 3:214 Developmental Language Disorders 3 s.h.
* 3:244 Rehabilitative Audiology 4 s.h.
* TC 199 Counseling for Related Professions 3 s.h.
* or * 3:100 Counseling Theories and Techniques 3 s.h.
* 3:510 Seminar: Introduction to Research in Speech and Hearing 3 s.h.

Additional semester hours of practicum registration sufficient to meet supervised, direct clinical experience requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association, and to provide broad supervised practicum experience *Equivalent undergraduate course may be accepted as meeting requirements.

B. Speech-Language Pathology, General Clinical Emphasis

Courses listed under A, above, and:
* 3:183 Stuttering 3 s.h.
* 3:212 Voice Disorders 2 s.h.
* 3:255 Neuropsychologies of Speech and Language 2 s.h.
* 3:237 Cleft Palate and Related Disorders 2 s.h.

Additional practicum, research, and elective courses

C. Speech-Language Pathology, Emphasis on Clinical Work in Elementary and Secondary Schools

Courses listed under A and B, above, and:
* TE 104 Remedial Methods in Speech and Hearing 2 s.h.

TE 102 Special Area Student Teaching 5 s.h.

Additional practicum, research, and elective courses

D. Audiology, General Clinical Emphasis

Courses listed under A, above, and:
* 3:120 Fundamentals of Laboratory Instrumentation 3 s.h.
* 3:140 Manual Communication I 1 s.h.
* 3:240 Clinical Audiology and Hearing Aids I 4 s.h.
* 3:241 Advanced Audiology 3 s.h.
* 3:242 Clinical Audiology and Hearing Aids II 4 s.h.
* 3:245 Pediatric Audiology 2 s.h.

Additional practicum, research, and elective courses

E. Audiology, School Hearing Clinician

Courses listed under A and D, above, and:
* TE 104 Remedial Methods in Speech and Hearing 2 s.h.

TE 102 Special Area Student Teaching 3 s.h.

Additional practicum, research, and elective courses

Requirements for Employment

A number of states, including Iowa, require a state license in speech-language pathology or audiology for persons who work in settings other than the public schools. Students who meet the requirements listed above for the M.A. degree with professional emphasis also meet the academic requirements for this license in Iowa, as well as in most other states.

Public School Certification

Students preparing for clinical positions in public schools must meet the certification requirements of the states in which they plan to work. The following meets the certification requirements for endorsement as a speech and language clinician in school audiology in Iowa and most other states.

A master's degree with professional emphasis in speech-language pathology or audiology.

Compliance with the requirements in speech-language pathology or audiology and the professional education sequence--20 semester hours including student teaching/internship as a speech-language clinician or audiologist. Courses in the following areas may be recognized for meeting the 20-hour sequence:

Curriculum (e.g., reading methods, curriculum development), Foundations (e.g., philosophy of education, foundations of education), Educational measurement (e.g., test score, tests and measurements, measures and evaluations of instruction),
The Bachelor of Arts degree provides a strong background in theatre arts and dramatic literature with requirements and electives in the major interest areas of acting, design, directing, playwriting, and theatre history. The program provides ample opportunity for performance, theatre and workshop activities. Students who demonstrate special aptitude may participate in special emphasis programs in acting, design, directing, or playwriting.

Minor
A minor in theatre arts requires 15 semester hours of course work in theatre arts, 12 of which must be taken in advanced course work at The University of Iowa. Any course in the department—excluding 40:2 Theatre and Society, 40:20 Basic Theatre, 41:901, and 41:930—may be used as an advanced course work for the minor.

Advising
Initial advising for theatre arts undergraduates is handled by the department's administrative assistant. After a student has selected an area of interest, the administrative assistant assigns 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 consulting with the theatre arts administrative assistant. Faculty advisors also have this right of acceptance.

Preenrollment in theatre arts courses requires a special permission signature, which should be obtained from the relevant faculty member, or from the theatre arts office, 109 Theatre Building.

Auditions
All theatre arts majors are required to audition for department production. Auditions usually take place the first week of each semester. Audition materials and information are available from the theatre arts office, 109 Theatre Building, at the end of each semester and during registration.

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 a course work equivalent to the basic requirements of the theatre arts department and the University before they may undertake advanced-level electives or seek admission to a special emphasis program.

Degree Requirements
The following courses compose the basic experience for all undergraduate theatre arts majors. Students who can demonstrate readiness/proficiency for higher level work may seek permission for advanced standing by notifying their advisor. It is the responsibility of faculty to instruct each student's evaluation of his graduate 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
The following are required of all theatre arts majors:

* 40:110 Acting I
* 40:121 Acting II
* 40:130 Costume Design I
* 40:150 Lighting Design I
* 40:160 Scene Design I
* 40:170 Stage Makeup
* 40:175 Voice for the Actor

*These courses are prerequisites for the advanced-level courses. These arts majors must complete 3 semester hours of 40:51 by the end of their junior year.

Special Emphasis Program Requirements
Students who have a special aptitude and readiness may seek admission to a special emphasis program. Admission is gained by consultation with the program head, who determines the feasibility of the emphasis and outlines its requirements. To remain in the emphasis, students must demonstrate their ability to progress satisfactorily through the requisite courses. The emphasis culminates in a senior project presented to the faculty.

Acting Emphasis
Head of acting: Eric Purdyte
* 40:121 Acting I
* 40:122 Acting II
* 40:130 Costume Design I
* 40:150 Lighting Design I
* 40:160 Scene Design I
* 40:170 Stage Makeup
* 40:175 Voice for the Actor

Directing Emphasis
Head of directing: Eric Purdyte
* 40:110 Directing I
* 40:125 Directing II
* 40:135 Elements of Design
* 40:122 Acting II
* 40:134 Contemporary Theatre
* 40:170 Movement for the Actor
* 40:175 Voice for the Actor
* 40:198 Stage Combat 2

Design Emphasis
Head of design: David Thayer
* 40:155 Elements of Design

Two of the following:
* 40:110 Directing I
* 40:135 Costume Design I
* 40:150 Lighting Design I
* 40:170 Scene Design I
* 40:185 Stage Makeup
* 40:180 Stage Makeup
* 40:185 Stage Makeup

One of the following:
* 40:111 Costume History I or II
* 40:145 History of Styles I or II

One of the following:
* 40:170 Advanced Scene Design
* 40:185 Advanced Costume Design
* 40:190 Advanced Lighting Design

One of the following:
* 40:142 Drawing for Theatrical Design
* 40:143 Rendering
* 40:144 Scene Painting
* 40:160 Stage Makeup
* 40:165 Stage Makeup

Final project: an independent advanced design project in area of specialization.

Playwriting Emphasis
Head of playwriting: Robert Helley
* 40:202 Basic Playwriting
* 40:97 Advanced Playwriting
* 40:102 Electives in Design
* 40:122 Acting II
* 40:118 Directing I

Three of the following:
* 40:113 Contemporary Theatre
* 40:114 Stage makeup
* 40:119 Directing II
* 40:125 Playwrights Ensemble
* 40:130 Elements of Design
* 40:150 Lighting Design I

Final project: a full-length play or its equivalent in shorter works; two-act scene must be staged for the faculty.
Graduate Program
Master of Fine Arts

The M.F.A. programs are dedicated to the creation of new works of art, design, and performance that merge the disciplines of visual, performing, and digital arts.

Programs

M.F.A. in Studio Art
M.F.A. in Art History
M.F.A. in Creative Writing
M.F.A. in Digital Media
M.F.A. in Music Composition
M.F.A. in Theatre

Admission Requirements

Applicants should submit a statement of purpose, a resume, a portfolio of work, and letters of recommendation. GRE scores are not required.

Financial Aid

Graduate students are eligible for teaching and research assistantships, and there are numerous scholarships and grants available.

For Undergraduates

For Undergraduates and Graduates

For Undergraduates and Graduates

For Undergraduates and Graduates
4.1111 Costume History I 3 h.
4.1112 Costume History II 3 h.
4.1112 (History of Dramaturgy) 3 h.
4.112 Stage Management and Control 3 h.
4.1123 Stage Management and Control 3 h.
4.1124 Scene Design I 3 h.
4.1125 Scene Design II 3 h.
4.1126 Lighting Design I 3 h.
4.1127 Costume Design I 3 h.
4.1136 Technical Theatre Workshop 3 h.
4.1137 Theatrical Workshops 3 h.
4.1138 Theatrical Workshops 3 h.
4.1139 Technical Theatre Workshop 3 h.
4.1141 Drawing I 3 h.
4.1142 Drawing II 3 h.
4.1143 Drawing III 3 h.
4.1144 Drawing IV 3 h.
4.1145 Drawing V 3 h.
4.1146 Drawing VI 3 h.
4.1147 Drawing VII 3 h.
4.1148 Drawing VIII 3 h.
4.1149 Drawing IX 3 h.
4.1150 Drawing X 3 h.
4.1151 Drawing XI 3 h.
4.1152 Drawing XII 3 h.
4.1153 Drawing XIII 3 h.
4.1154 Drawing XIV 3 h.
4.1155 Drawing XV 3 h.
4.1156 Drawing XVI 3 h.
4.1157 Drawing XVII 3 h.
4.1158 Drawing XVIII 3 h.
4.1159 Drawing XIX 3 h.
4.1160 Drawing XX 3 h.
4.1161 Drawing XXI 3 h.
4.1162 Drawing XXII 3 h.
4.1163 Drawing XXIII 3 h.
4.1164 Drawing XXIV 3 h.
4.1165 Drawing XXV 3 h.
4.1166 Drawing XXVI 3 h.
4.1167 Drawing XXVII 3 h.
4.1168 Drawing XXVIII 3 h.
4.1169 Drawing XXIX 3 h.
4.1170 Drawing XXX 3 h.
4.1171 Drawing XXXI 3 h.
4.1172 Drawing XXXII 3 h.
4.1173 Drawing XXXIII 3 h.
4.1174 Drawing XXXIV 3 h.
4.1175 Drawing XXXV 3 h.
4.1176 Drawing XXXVI 3 h.
4.1177 Drawing XXXVII 3 h.
4.1178 Drawing XXXVIII 3 h.
4.1179 Drawing XXXIX 3 h.
4.1180 Drawing XL 3 h.
4.1181 Drawing XLI 3 h.
4.1182 Drawing XLII 3 h.
4.1183 Drawing XLIII 3 h.
4.1184 Drawing XLIV 3 h.
4.1185 Drawing XLV 3 h.
4.1186 Drawing XLVI 3 h.
4.1187 Drawing XLVII 3 h.
4.1188 Drawing XLVIII 3 h.
4.1189 Drawing XLIX 3 h.
4.1190 Drawing L 3 h.
4.1191 Drawing LI 3 h.
4.1192 Drawing LII 3 h.
4.1193 Drawing LIII 3 h.
4.1194 Drawing LIV 3 h.
4.1195 Drawing LV 3 h.
4.1196 Drawing LVI 3 h.
4.1197 Drawing LVII 3 h.
4.1198 Drawing LVIII 3 h.
4.1199 Drawing LIX 3 h.
4.1200 Stage Crafts 3 h.
4.1111 Costume History I 3 h.
4.1112 Costume History II 3 h.
4.1112 (History of Dramaturgy) 3 h.
4.112 Stage Management and Control 3 h.
4.1123 Stage Management and Control 3 h.
4.1124 Scene Design I 3 h.
4.1125 Scene Design II 3 h.
4.1126 Lighting Design I 3 h.
4.1127 Costume Design I 3 h.
4.1136 Technical Theatre Workshop 3 h.
4.1137 Theatrical Workshops 3 h.
4.1138 Theatrical Workshops 3 h.
4.1139 Technical Theatre Workshop 3 h.
4.1141 Drawing I 3 h.
4.1142 Drawing II 3 h.
4.1143 Drawing III 3 h.
4.1144 Drawing IV 3 h.
4.1145 Drawing V 3 h.
4.1146 Drawing VI 3 h.
4.1147 Drawing VII 3 h.
4.1148 Drawing VIII 3 h.
4.1149 Drawing IX 3 h.
4.1150 Drawing X 3 h.
4.1151 Drawing XI 3 h.
4.1152 Drawing XII 3 h.
4.1153 Drawing XIII 3 h.
4.1154 Drawing XIV 3 h.
4.1155 Drawing XV 3 h.
4.1156 Drawing XVI 3 h.
4.1157 Drawing XVII 3 h.
4.1158 Drawing XVIII 3 h.
4.1159 Drawing XIX 3 h.
4.1160 Drawing XX 3 h.
4.1161 Drawing XXI 3 h.
4.1162 Drawing XXII 3 h.
4.1163 Drawing XXIII 3 h.
4.1164 Drawing XXIV 3 h.
4.1165 Drawing XXV 3 h.
4.1166 Drawing XXVI 3 h.
4.1167 Drawing XXVII 3 h.
4.1168 Drawing XXVIII 3 h.
4.1169 Drawing XXIX 3 h.
4.1170 Drawing XXX 3 h.
4.1171 Drawing XXXI 3 h.
4.1172 Drawing XXXII 3 h.
4.1173 Drawing XXXIII 3 h.
4.1174 Drawing XXXIV 3 h.
4.1175 Drawing XXXV 3 h.
4.1176 Drawing XXXVI 3 h.
4.1177 Drawing XXXVII 3 h.
4.1178 Drawing XXXVIII 3 h.
4.1179 Drawing XXXIX 3 h.
4.1180 Drawing XL 3 h.
4.1181 Drawing LI 3 h.
4.1182 Drawing LII 3 h.
4.1183 Drawing LIII 3 h.
4.1184 Drawing LIV 3 h.
4.1185 Drawing LV 3 h.
4.1186 Drawing LVII 3 h.
4.1187 Drawing LVIII 3 h.
4.1188 Drawing LIX 3 h.
4.1189 Drawing LX 3 h.
4.1190 Drawing LXI 3 h.
4.1191 Drawing LXII 3 h.
4.1192 Drawing LXIII 3 h.
4.1193 Drawing LXIV 3 h.
4.1194 Drawing LXV 3 h.
4.1195 Drawing LXVI 3 h.
4.1196 Drawing LXVII 3 h.
4.1197 Drawing LXVIII 3 h.
4.1198 Drawing LXIX 3 h.
4.1199 Drawing LXX 3 h.
4.1200 Stage Crafts 3 h.
TRANSPORTATION STUDIES

Transportation is perhaps the most vital need of a modern society. In the United States, as in most other nations, there exist numerous critical transportation problems and issues. The highway system is reaching an advanced stage of its life cycle, public transit operating deficits are growing, the quality of transportation available to many citizens is inadequate, and serious financing quandaries exist, and extensive changes are needed in traditional transportation institutions.

Transportation planners and analysts must draw on a number of disparate skills to respond to the challenges they face. They are required to analyze and forecast the movement of people and goods within and between cities, identify the most efficient means for providing needed transportation services, price these services properly, and evaluate the effects of changes in transportation services or policies, land use, environmental quality, the local or regional economy, and various subgroups within society.

No single discipline can supply all of the theories, principles, or methods needed to address the varied and complex problems in transportation. Recognizing this, three academic units at The University of Iowa participate in an interdisciplinary transportation program. The Department of Civil and Environmental Engineering, the Department of Geography, and the Graduate Program in Urban and Regional Planning have established a graduate certificate program, which enables students in these academic units to obtain an additional credential along with their graduate degrees. The Transportation Certificate program is coordinated by the Center for Transportation Studies, which is administered by the Graduate Program in Urban and Regional Planning, a unit of The Graduate College. Completion of the requirements for a certificate is documented on the student's transcript. The certificate is awarded in conjunction with the established degree requirements of the individual academic units.

Sufficient flexibility exists within the Transportation Certificate program to enable students to pursue individual interests. While there is extensive sharing of courses, the transportation curricula of the three participating units have somewhat different emphases.

Civil and Environmental Engineering

The Department of Civil and Environmental Engineering offers degrees in transportation at both the M.S. and Ph.D. levels. The M.S. degree may be earned on either a nonprofit basis requiring a minimum of 30 semester hours of credit, or through a 30-semester-hour thesis program that includes up to 6 semester hours of credit for thesis research. Nonthesis 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 typically involves 72 semester hours beyond the M.S. degree, with up to 12 semester hours earned during dissertation research. A minimum of one year 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 a student's background, the Ph.D. may be necessary to complete courses in statistics, computer programming, mathematics, and operations research without being able to apply the course credits towards semester hours needed for the degree program. A typical master's level program includes the following courses.

First Semester

512/626 Urban Transportation Planning
3 s.h.

102/205 Transportation Policy and Planning
3 s.h.

414 Methods of Transportation Analysis
3 s.h.

102/209 Transportation Program Seminar
1 s.h.

Technical elective
3 s.h.

Second Semester

513/633 Transportation Systems Analysis
3 s.h.

102/261 Problems in Transportation and Land Use
3 s.h.

412/426 Travel Demand Modeling
3 s.h.
One of the following courses:
S3:199 Research: Civil and Environmental Engineering M.S.
- Thesis 3 s.h.
- Statistics 3 s.h.
- Planning elective 3 s.h.
- Transportation course 3 s.h.

Third Semester (usually summer)
S3:199 Individual Investigations
- Civil and Environmental Engineering 3 s.h.

S3:199 Research: Civil and Environmental Engineering M.S.
- Thesis 3 s.h.
- Technical elective 3 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 graduation schedule and desired area of specialization. Applications should be made through the Graduate College and the Department of Civil and Environmental Engineering.

Geography

The Department of Geography offers the M.A. and Ph.D. degrees with a specialization in transportation systems analysis. The transportation specialty focuses on the resources of the College of Engineering, the Department of Economics, and the Graduate Program in Urban and Regional Planning, as well as the Department of Geography. The specialty has a strong quantitative orientation and is designed to provide students with a broad range of skills relevant to technological development and urban and regional analysis. It also helps students develop an appreciation of political and organizational forces affecting transportation systems and of the engineering and social problems of practice.

M.A. students typically take five courses in transportation and urban and regional analysis, three quantitative methods courses, and four additional courses in geography or economics. The M.A. degree is available with or without a thesis. If a thesis is pursued, it can substitute for two of the courses. Students who have studied calculus as undergraduates can complete the master's program in four semesters. Students who have not studied calculus as undergraduates or who have research or teaching assistantships may require an additional one or two semesters to complete the program.

A typical master's level program includes the following courses:

First Semester
225:120 Probability and Statistics 3 s.h.
102:230 Research Methods and Planning 3 s.h.

44356 Research Seminar Staff 1 s.h.
44:134 Methods of Transportation Analysis 3 s.h.

Second Semester
46:184 Methods of Quantitative Economics 3 s.h.
102:261 Problems in Transportation and Land Use 3 s.h.
44:100 Research Seminar; Staff 1 s.h.
44:192 Economic Theory of Location 3 s.h.

Third Semester
46:203 Microeconomics I 3 s.h.
52:192 Urban Transportation Planning 3 s.h.
44:175 Regional Conflict 3 s.h.
44:250 Research Seminar: Staff 1 s.h.

Fourth Semester
44:236 Travel Demand Modeling 3 s.h.
44:110 Deterministic Operations Research 3 s.h.
44:230 Research Seminar: Staff 1 s.h.
44:285 Methods of Regional Analysis 3 s.h.
44:295 Advanced Location Theory 3 s.h.

Ph.D. students, in addition to taking the courses recommended for master's students, are strongly encouraged to take advanced courses in areas such as economics, operations research, regional development, and location theory and analysis. Ph.D. students also are required to undertake original research leading to the preparation of a dissertation. Applications should be made through the Graduate College and the Department of Geography.

Urban and Regional Planning

The Graduate Program in Urban and Regional Planning offers the M.A. or M.S. degrees with a sectoral focus in transportation. Students complete an integrated core curriculum during the first year. The core consists of courses in planning economics and public finance, analytic methods, planning theory, and 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 public issues in transportation, devise workable options, evaluate these options, and work toward the implementation of policy solutions. Planning students complete a total of 48 semester hours and an internship. Twenty-seven semester hours are accounted for by the core; the sectoral major constitutes a minimum of 9 semester hours, and electives are taken to complete the remaining hours. If the thesis option is selected, up to 9 semester hours of sectoral major credit are awarded. Students may elect to complete an additional 2 semester hours of course work to bring the total to 50 semester hours.

A typical transportation sectoral major program includes the following courses:

First and Second Semesters
44:205 Field Problems in Planning 3 s.h.
102:293 Transportation Policy and Planning 3 s.h.
44:269 Transportation Program Seminar 1 s.h.

Two of the following courses:
44:234 Methods of Transportation Analysis 3 s.h.
52:192 Urban Transportation Planning 3 s.h.
Planning elective 3 s.h.

Fourth Semester
102:265 Transportation-Regulation and Finance 3 s.h.
53:103 Transportation Systems Analysis 3 s.h.
44:236 Travel Demand Modeling 3 s.h.
Planning elective 3 s.h.

Students select the optional transportation course according to individual interests. Elective courses typically selected include:

102:234 Project Impact Analysis 3 s.h.
102:239 Capital Facilities Planning and Design 3 s.h.
102:74 Energy and Public Utility Policy and Planning 3 s.h.
102:296 Economic Policy 3 s.h.
102:298 Development Finance 3 s.h.

Applications should be made through the Graduate College and the Graduate Program in Urban and Regional Planning.

UNIFIED PROGRAM

Graduation: Milton Gilbert
Residency: Susan D. Aren (Chemistry), Norman C. Baertig (Chemistry), Joel S. Borchardt (Physics), William E. Bohnett (Engineering), Jeffrey L. Cox (Mathematics), Lene Devri (Political Science), Jeffrey L. DeRouge (Biological Sciences), Rhett Gilbert (English), Robert H. James (History), Philip E. Knaute (Mathematics), Eugene V. Madison (Mathematics), Daniel G. Marshall (English), Dennis M. Moore (Statistics), Dan Rabin (Psychology), Alice Robert (African-American World Studies/Antropology), R. V. Sutphen (History)

Unified Program (UP) is a four-semester series of integrated general education courses for a group of students who begin the program as entering freshmen. UP satisfies all of the College of Liberal Arts General Education Requirements except for the foreign language and physical education requirements, and each UP course is interchangeable with an equivalent approved course. Students in various must be eligible for 103 Historic.
students in version B must be eligible for 20.3 Raveno and for calculus. All students in LP take the courses offered for A or B version in a given semester. Students may elect the program at any time and satisfy the General Education Requirements in other ways, but only first-semester freshmen may enter LP.

Students in LP fulfill the rhetoric requirement through satisfactory completion of specified UP courses: there is no separate rhetoric course; lecture instruction in writing and speaking is included in a number of first-year UP courses.

Version A

Freshman Year

Fall semester:
140-03 Humanities I
140-41 Politics I
140-42 Philosophy I
140-43 Science I
140-44 Natural Science II
140-45 Nature I
140-46 Culture I
140-47 History I
140-48 History II
140-49 History I
140-50 History II
140-52 Philosophy II

Spring semester:
140-50 History I
140-51 History I
140-52 History II

Version B

Freshman Year

Fall semester:
140-75 Philosophy I
140-76 Principles of Chemistry I
140-77 Principles of Chemistry II
140-78 Principles of Chemistry III
140-79 Principles of Chemistry IV
140-80 Philosophy I
140-81 Philosophy II
140-82 Philosophy III
140-83 Philosophy IV
140-84 Philosophy V
140-85 Philosophy VI
140-86 Philosophy VII
140-87 Philosophy VIII
140-88 Philosophy IX
140-89 Philosophy X
140-90 Philosophy XI
140-91 Philosophy XII
140-92 Philosophy XIII
140-93 Philosophy XIV
140-94 Philosophy XV
140-95 Philosophy XVI
140-96 Philosophy XVII
140-97 Philosophy XVIII
140-98 Philosophy XIX
140-99 Philosophy XX
140-100 Philosophy XXI
140-101 Philosophy XXII
140-102 Philosophy XXIII
140-103 Philosophy XXIV
140-104 Philosophy XXV
140-105 Philosophy XXVI
140-106 Philosophy XXVII
140-107 Philosophy XXVIII
140-108 Philosophy XXIX
140-109 Philosophy XXX
140-110 Philosophy XXXI
140-111 Philosophy XXXII
140-112 Philosophy XXXIII
140-113 Philosophy XXXIV
140-114 Philosophy XXXV
140-115 Philosophy XXXVI
140-116 Philosophy XXXVII
140-117 Philosophy XXXVIII
140-118 Philosophy XXXIX
140-119 Philosophy XL
140-120 Philosophy XLI
140-121 Philosophy XLII
140-122 Philosophy XLIII
140-123 Philosophy XLIV
140-124 Philosophy XLV
140-125 Philosophy XLVI
140-126 Philosophy XLVII
140-127 Philosophy XLVIII
140-128 Philosophy XLIX
140-129 Philosophy L
140-130 Philosophy LI
140-131 Philosophy LII
140-132 Philosophy LIII
140-133 Philosophy LIV
140-134 Philosophy LV
140-135 Philosophy LVI
140-136 Philosophy LVII
140-137 Philosophy LVIII
140-138 Philosophy LIX
140-139 Philosophy LX
140-140 Philosophy LXI
140-141 Philosophy LXII
140-142 Philosophy LXIII
140-143 Philosophy LXIV
140-144 Philosophy LXV
140-145 Philosophy LXVI
140-146 Philosophy LXVII
140-147 Philosophy LXVIII
140-148 Philosophy LXIX
140-149 Philosophy LXX
140-150 Philosophy LXXI
140-151 Philosophy LXXII
140-152 Philosophy LXXIII
140-153 Philosophy LXXIV
140-154 Philosophy LXXV
140-155 Philosophy LXXVI
140-156 Philosophy LXXVII
140-157 Philosophy LXXVIII
140-158 Philosophy LXXIX
140-159 Philosophy LXXX
140-160 Philosophy LXXXI
140-161 Philosophy LXXXII
140-162 Philosophy LXXXIII
140-163 Philosophy LXXXIV
140-164 Philosophy LXXXV
140-165 Philosophy LXXXVI
140-166 Philosophy LXXXVII
140-167 Philosophy LXXXVIII
140-168 Philosophy LXXXIX
140-169 Philosophy C
140-170 Philosophy D
140-171 Philosophy E
140-172 Philosophy F
140-173 Philosophy G
140-174 Philosophy H
140-175 Philosophy I
140-176 Philosophy J
140-177 Philosophy K
140-178 Philosophy L
140-179 Philosophy M
140-180 Philosophy N
140-181 Philosophy O
140-182 Philosophy P
140-183 Philosophy Q
140-184 Philosophy R
140-185 Philosophy S
140-186 Philosophy T
140-187 Philosophy U
140-188 Philosophy V
140-189 Philosophy W
140-190 Philosophy X
140-191 Philosophy Y
140-192 Philosophy Z

Bachelor of Arts in Urban and Regional Planning

Chair: Peter S. Fisher
Professor: David J. Forrester, John W. Fullen
Associate professor: Peter S. Fisher, James W. Storer
Assistant professor: Cheryl K. Cooper, Carl A. Danner, AMB Sinko, James A. Thompson
Adjunct professor: Karla A. Nelson, William J. McLean
Graduate degrees offered: M.U.R.S., M.A. in Urban and Regional Planning

Planning encompasses the development of public policy alternatives to improve the quality of life in cities and regions. Planning is a dynamic and changing field. Today's planners find themselves in demand for diverse work such as community economic 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 curriculum of Urban and Regional Planning program is a two-year program, fully accredited by the Planning Accreditation Board. The program is built on the premise that planners must be educated in the methods of policy analysis and that there is a common body of knowledge, represented in the core curriculum, that regales a solid foundation for all specializations in the field. An independent academic unit administratively aligned with the Graduate College, the program has leveraged an opportunity to develop its curriculum and faculty interests without the constraints imposed by affiliation with another discipline or professional field.

Faculty and students in the planning program at The University of Iowa bring to each other a wide range of experience and prior education. Academic backgrounds of the faculty include planning, architecture, 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 and regional planning, biology, history, classics, and philosophy. Usually, about three-fourths of the 60-70 graduate students are women. Largely because of the common core it offers, students get to know each other quickly; a significant proportion of the original experience takes place in informal discussions.

Recent graduates of The University of Iowa planning program have assumed positions with local and state governmental 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.

Curriculum

The planning curriculum is a 48-semester-hour (plus internship) program encompassing two academic years. This includes 15 semester hours of core courses, 9 semester hours of sector major courses, and 5 semester hours of free electives. The curriculum is based on the philosophy that planners need develop the theoretical and analytical skills that permit them to understand and analyze complex economic, political, and social problems, as well as the professional skills (e.g., report writing, presentation, team management) that allow them to function effectively in various organizational and political environments.
Core
At the heart of The University of Iowa planning program is a unique and
integrated core curriculum, which occupies the first academic year. The functions of the
core is to develop an understanding of the institutions—the socio, economic, political,
administrative, and legal systems—that provide the context for policy analysis and
construe public policies, a capability for identifying societal goals and normative
criteria for evaluating public policies, and analytic skills—both quantitative (e.g.,
statistical, forecasting, surveys, regression analysis) and nonquantitative. In total, the
core accounts for 27 semester hours.
Courses in the first semester are derived primarily from traditional disciplines
(particularly economics, law, and statistics), together with an introduction to the
theories and practices of planning. At students proceed through the course,
increasing reliance is placed on the development of critical judgment and
insight and 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 course
work.
Courses in the core curriculum are as follows:
First Semester
102.237 History and Theories of Planning 3 s.h.
102.205 Economics for Policy Analysis 3 s.h.
102.239 Planning Law and Legislation 3 s.h.
102.230 Introduction to Analytic Methods 3 s.h.
Second Semester
102.240 Decision Making 3 s.h.
102.231 Economics for Policy Analysis 4 s.h.
102.232 Intermediate Analytic Methods 2 s.h.
102.232 Intermediate Presentation 2 s.h.
Third Semester
102.215 Field Problems in Planning 3 s.h.
Second Sectoral
The second year of the program is directed toward developing an area of
specialization, the sectoral major, 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 or by other departments and schools of the University.
Currently, there are five sectoral majors supported by course offerings and faculty
within the planning program—transportation, housing and community development,
infrastructure planning, and economic development. Students may design other
sectoral majors, subject to faculty approval.
For example, a student can major in health services planning with appropriate course
work in the departments of Hospital and Health Administration or Preventive Medicine and Environmental Health, or in human services planning with courses in the School of Social Work. Other sectoral majors that students have developed include land use, parks, utility and energy planning, and urban management.
Other Requirements
The master’s final examination requirement is satisfied through an internship and
presentable portfolio. The portfolio consists of a set of projects report that demonstrate an understanding of fundamental concepts presented in the core, application of core concepts to the student’s sectoral major; and substantive knowledge of issues, institutions, and policies in the sectoral area. The portfolio is made up of written evaluations of research papers and project reports for courses. The portfolio must be approved by a final exam committee consisting of three faculty members.
A thesis is not required, although students may petition to write one. Students may
require an up to 8 semester hours of their thesis. In addition, they may take up to 8 semester hours of reading or to develop a thesis topic and prepare a literature review. Students may apply 3 of the
reading seminar hours to the sectoral major requirement and substitute the thesis
for the portfolio.
Students are encouraged to complete an internship in a planning-related organization and submit a brief paper summarizing and evaluating the experience. Internships usually take place during the summer. Alternatively, students may elect to complete an additional 2 semester hours of credit, bringing the total to 50 semester hours.
An extended internship, consisting of at least five months of full-time employment in a planning-related organization, may qualify as a practical practicum. This general is made during the summer into the final 8 semester of the second year. The practicum course 3 semester hours of internship and substitutes for the required sectoral major requirement. 102.235, as well as the 3-semester-hour reduction in degree requirements for the internship.
Joint Programs
Law
The Urban and Regional Planning Program and the College of Law cooperates in
administering a program that meets the degree requirements leading to an M.A. in
planning and a J.D. in law. The program requires four years to complete (or less if the student chooses the accelerated law program). This is a reduction of one academic year from the law requirements of the two programs taken independently.
Separate admission to each academic unit is required.
Law is the most popular 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, or city attorneys, or as city planners or planning administrators.
Engineering
A special program involving the College of Engineering and the Urban and Regional Planning Program enables students to acquire a B.S. in engineering and an M.A. in planning in a total of five academic years.
In this accelerated program, course work is reviewed by one academic year from the
requirement for the two degrees. Undergraduate students in engineering may apply for admission to the special program.
Preventive Medicine and Environmental Health
A joint master's degree option exists between the Urban and Regional Planning Program and the Department of Preventive Medicine and Environmental Health in the College of Medicine. This option results in an M.A. in planning and an M.B. in Preventive Medicine and Environmental Health. Graduates of the program typically seek employment in the public health field, with state health and human services departments, or as health or environmental planners.
A total of 60-62 semester hours of credit is required, the two degrees generally can be earned in two years and one-half years. Separate admission to each academic unit is required.
Hospital and Health Administration
Students seriously interested in health planning may wish to enroll in a joint program between the Urban and Regional Planning Program 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.A. in hospital and health administration. Course work is reduced by one year from the separate requirements of the two programs. Separate admission to each academic unit is required.
The hospital and health administration degree enables students to strengthen their core skills as health planners or expand their job options to include administrative positions in the health field as well as health planning jobs. Graduates of the joint degree program typically find employment in hospitals, state departments of health, and other private, nonprofit, or public health agencies.
Economics
Students specializing in economic development, public utility planning, state fiscal analysis and planning, or other areas may wish to strengthen certain skills in economic analysis by enrolling in the joint program with the Department of Economics. The combination of economics and applied policy analysis should be valuable for volunteer who want to obtain jobs such as state economic development planner, economist with a public utility regulatory commission, or local analyst for a state local issues; or economic development planner.

The program requires a total of 60 semester hours of credit and usually can be completed in five years. Students earn an M.A. in planning and an M.A. in economics.

Social Work
For those interested in a career in social service delivery or human service planning, a joint program is offered through urban and regional planning and the School of Social Work. Leading to an M.A. in planning and an M.S.W. in social work, planning positions are available with city planning agencies, community service agencies, and state social services departments.

A total of 76 semester hours is required for the B.A. degree. This is a reduction of 22 semester hours from the requirements of the two programs taken separately. It is possible to complete the program in three years, although some students may require an additional semester from the School of Social Work in order to achieve each academic unit required.

Transportation
The transportation research and training program is offered through the Center for Transportation Research and Urban and Regional Planning Program. It is designed to meet the needs of students who are interested in transportation issues.

A total of 76 semester hours is required for the B.A. degree. This is a reduction of 22 semester hours from the requirements of the two programs taken separately. It is possible to complete the program in three years, although some students may require an additional semester from the School of Social Work in order to achieve each academic unit required.

Financial Aid
Students in the Urban and Regional Planning Program are eligible for awards based on financial need, tuition scholarships, program teaching or research assistantships, contract or grant-funded research assistantships, and internships in local agencies. All but tuition scholarships must be accepted. Students must have a grade point average of 2.0 for one year under the direction of a faculty member in the eligibility planning unit. Students also must be enrolled in the program course work leading to the baccalaureate degree.

Admission
Admission to the Urban and Regional Planning Program is open to students from any undergraduate major or area of concentration.

Admission is based on Graduate Record Examination (GRE) Aptitude Test scores (verbal, quantitative, and analytical), letters of recommendation and, students' previous academic record.

Applicants should submit the application form, GRE Aptitude Test scores, letters, and transcripts early in the spring for fall admission (although applications are still accepted until July 15), by December 15 for spring admission. Fall admission is preferred.

Courses
102:00 Cooperative Education Internship 1.0 h.
103:10 Introduction to Planning and Public Development 3.0 h.
104:20 Urban and Regional Planning Program 3.0 h.
105:10 Introduction to Transportation 1.0 h.
106:10 Methods of Transportation Analysis 3.0 h.
107:10 Urban Transportation 3.0 h.
108:10 Urban Transportation 3.0 h.
109:20 History and Theory of Planning 3.0 h.
110:20 Collective Decision Making 3.0 h.
111:20 Ecological Policy Analysis 3.0 h.
112:20 Economic Policy Analysis 3.0 h.
113:20 Epidemiology of Urban and Regional Planning 3.0 h.
114:20 Health and Safety Policy 3.0 h.
115:20 Planning Law and Legislation 1.0 h.
116:20 Planning Law and Legislation 1.0 h.
117:20 Policy Analysis and Planning 3.0 h.
118:20 Public Policy Analysis 3.0 h.
119:20 Public Policy Analysis 3.0 h.
120:20 Urban Planning Policy Analysis 3.0 h.
121:20 Urban Planning Policy Analysis 3.0 h.
122:20 Urban Planning Policy Analysis 3.0 h.
123:20 Urban Planning Policy Analysis 3.0 h.
124:20 Environmental Planning Policy 3.0 h.
125:20 Environmental Planning Policy 3.0 h.
Graduate Study
Graduate students in the Arts or doctoral programs may choose a comprehensive area in women's studies without existing specializations. Graduate students who want to pursue the Ph.D. in women's studies should file a plan of study for the Ph.D. Interdisciplinary Program (P.I.D.P. through the Graduate College. Students first must be granted permission by a department of the University. Information on faculty members in various departments who will directly graduate study is available from the Women's Studies Program, 207 Jefferson Building.

Associated Courses
The departmental courses listed below are associated with the Women's Studies Program and may be applied toward a concentration in a master's program in women's studies.

African-American World Studies
129.120 Images of Black Women in Modern African Fiction
129.127 Black Women Writers

Communication Studies
X.C.137 Sex Roles and Communication

Counselor Education
7.C.150 Psychological Aspects of Women's and Men's Roles
7.C.162 Introduction to Marriage and Family Counseling and Psychotherapy
7.C.261 Marriage and Family Counseling and Psychotherapy

English
9.G.11 The Literature Presentation of Women
9.H.18 Black Women Writers

*8.544 Sixteenth-Century British Literature

History
*16.5 Problems in Human History: Women and Society in Prehistoric Times

*16.519 Society and Gender in Europe 1450-1750

*16.582 Society and Gender in Europe 1750-1950

*16.584 Readings in European History
The College of Business Administration is made up of its academic departments, accounting, economics, finance, industrial relations and human resources, management sciences, and marketing.

The undergraduate and graduate programs of the college are accredited by the American Assembly of Collegiate Schools of Business. Research, executive development, and continuing education programs are supported by the Center for Research, the Center for Economic Research, the Center for Management, the Center for Productivity, the B. McCafferty Institute for Accounting Research, and the Small Business Development Center.

Undergraduate Program

Bachelor of Business Administration

The college offers the Bachelor of Business Administration (B.B.A.) degree in six departments and in business administration. B.B.A. students complete a background studies in the College of Liberal Arts at The University of Iowa at another institution and usually enter the College of Business Administration as juniors.

The credit B.B.A. curriculum requires 120 semester hours for graduation, with a minimum 18 semester hours in business courses and at least 48 in nonscience courses. Limited specialization is offered through the student's designated major.

The last 30 or 45 of the last 60 semester hours must be earned in residence following admission to the College of Business Administration. At least 24 semester hours of credit in courses offered by the College of Business Administration and at least 6 semester hours of credit in the student's major must be earned at The University of Iowa.

To graduate, B.B.A. candidates must have at least 2.00 grade-point average in all college course work, in all course work attempted at The University of Iowa, in all business course work attempted, in all business-course work attempted at The University of Iowa, and in all course work attempted in the major, and in all course work attempted at The University of Iowa in the major.

Common Requirements

B.B.A. candidates must satisfy minor requirements or equivalents:

- Rhetoric 101 and 105 or 103 8 s.h.
- 220:17 and 220:8 Quantitative Methods I and II 6 s.h.

- 601: Principles of Microeconomics 3 s.h.
- 667: Principles of Macroeconomics 3 s.h.
- 461: Introduction to Financial Accounting 3 s.h.
- 622: Managerial Cost Accounting (including audit) 3 s.h.
- 624: Principles of Managerial Economics 3 s.h.
- 618: Financial Management 3 s.h.
- 622: Managerial Cost Accounting (including audit) 3 s.h.
- 618: Financial Management 3 s.h.
- 641: Introduction to Financial Accounting 3 s.h.
- 600: Introductory Financial Management 3 s.h.
- 618: Financial Management 3 s.h.
- 641: Introduction to Financial Accounting 3 s.h.

Students majoring in business administration may combine 601: Production Management with 602:100 Administrative Management. The business administration major may be combined with any other business major.

Minors

Nonbusiness Minors

Undergraduate students in the College of Business Administration may elect to complete a minor in another college of the University. For example, students interested in international business might choose a foreign language as a minor. For minor requirements, students should consult with an advisor in the relevant department. To have the minor recorded on their transcript, students must complete the "minor" section on the B.E.A. degree application form before submitting it to the registrar in the fall semester.

Business Minor

Students majoring in another college of the University may elect a minor in business administration. The courses listed below, or their equivalents, satisfy all requirements for the minor. At least 15 semester hours of course work taken for the minor must be completed at The University of Iowa. A grade-point average of at least 2.00 is required on all course taken for the minor and on all of these courses taken at Iowa. A computer programming course Business Calculus (220:17, 220:25, or 220:35) 3 s.h.

Statistics (220:87 or 220:163) 5 s.h.

601: Principles of Microeconomics 3 s.h.

662: Principles of Macroeconomics 3 s.h.

624: Principles of Managerial Economics 3 s.h.

618: Financial Management 3 s.h.

641: Introduction to Financial Accounting 3 s.h.

618: Financial Management 3 s.h.

465: Introductory Financial Management 3 s.h.

618: Financial Management 3 s.h.

618: Financial Management 3 s.h.

465: Introductory Financial Management 3 s.h.

618: Financial Management 3 s.h.

465: Introductory Financial Management 3 s.h.

*Must be taken in junior or senior year.

Students who will complete all requirements of their business administration when they graduate should immediately file the application for degree completion, which is filed at the Registrar's Office in the student's final semester.

Recognition for Academic Achievement

Dean's List

Students who achieve grade-point averages of 3.50 or above during a given semester or 3.00 or more semester hours of grade-point average and who have no hours of I or F are recognized by inclusion on the dean's list for that semester.

President's List

Students who earn a 4.0 grade-point average for two consecutive semesters (excluding summer sessions) on at least 12
or more semester hours of graded work each of the semester. Students who have no hours of 0 or those semester, are recognized by inclusion on the president's list.

Honors

The College of Business Administration Honors Program provides outstanding students in the college the opportunity to undertake advanced work and independent study in their majors and to work closely with faculty and other honors students. The purpose is to challenge superior students to reach their academic potential. All juniors and seniors in the program participate in a colloquial honors seminar. Successful completion of departmental and college requirements leads to a Bachelor of Business Administration with honors (see "Graduation Honors" below).

Prebusiness students interested in the honors program are encouraged to participate in the College of Liberal Arts Honors Program until they are admitted to the College of Business Administration. This permits them to take advantage of the services offered by Shambaugh House Honors Center. They also are encouraged to join the Association of Illinois Honors Students, which plans a variety of social and educational activities each year.

Students should apply for admission to the College of Business Administration Honors Program when they apply for admission to the college, and they must apply no later than the first semester of the junior year. For more information, students should contact the Academic Programs Office, 121 Phillips Hall.

Graduation Honors

High scholastic achievement is recognized upon graduation with a major, and graduation with honors in business administration based on both grades and the completion of special work as outlined by the college.

To be eligible for either form of recognition, a student must complete 60 semester hours in residence in an undergraduate college of the University of Illinois, of which at least 45 semester hours must be completed prior to the final registration.

Graduation with Distinction

The Office of the Registrar certifies to the dean of the college the names of students eligible to graduate with distinction. The college awards degrees "with highest distinction" to students in the highest two percent of the graduating class, "with high distinction" to students in the next highest three percent, and "with distinction" to the next highest five percent. Ranking is based on seniors' grade-point averages for all college-level courses undertaken prior to their final registration.

Admission

The college admission standards are set by the undergraduate program committee. The college usually admits undergraduate students at the beginning of their junior year. Students are eligible for admission to the college after they have completed 56 semester hours and have satisfied the common requirements in quantitative methods, accounting, and economics with a grade-point average of at least 2.25 on the gpa used to satisfy these requirements, on all college-level courses taken, and on all courses undertaken at The University of Iowa.

The College of Business Administration considers the following factors in a comparative evaluation of applicants for admission:

Grade-point averages on all college work completed (including transfer), all work completed at The University of Iowa, and the prerequisite courses in quantitative methods, economics, and accounting.

The pattern of grades over time; and

Other factors relevant to predicting success in the College.

The exact standards (e.g., grade-point average) each semester vary with the number of applicants, their relative qualifications, and College of Business Administration enrollment limits. Since these standards change from time to time, the college provides information about the characteristics of the students admitted. The admissions office is always available to the program to judge how they are progressing toward admission.

No more than 60 semester hours, or equivalent, of transfer credit is accepted for student transferring from a non-accredited institution. Transfer credit for business courses taken during the junior and senior years are counted toward the B.B.A. degree only if the courses are usually offered as lower-division courses at The University of Iowa.

Credit and Grading

Credit by Examination

Students may earn up to 32 semester hours of credit by examination. Students in the College of Extension Instruction Program (CEIP) of the College Extension Examination Board and those who are eligible to receive credit for some of the common requirements of the college. Information on the CEIP examinations is available from the Liberal Arts Office of Academic Programs.

Maximum Schedule

Ordinarily, schedules of more than 18 semester hours for a semester or 9 semester hours for a summer session require approval of the dean.

Adding and Dropping Courses

Courses may be added during the first three weeks of the semester or first one- or two-week block of the summer session with approval of the advisor and instructor. Courses may be dropped during the first ten weeks of the semester or first five weeks of the summer session with approval of the advisor and instructor. Students must have the approval of the dean in order to add or drop a course after these deadlines. Undergraduates will receive the mark of W for any course dropped after the third week of the semester or first one- or two-week block of the summer session.

Pass/Nonpass

Of the total semester hours required for a B.B.A. degree, up to 10 may be taken on a pass/nonpass basis with the consent of the advisor and instructor. However, students may not count more than 8 semester hours of pass/nonpass credit in the last 60 semester hours of course work. Students must be in good academic standing to be eligible for the pass/nonpass option. A maximum of two pass/nonpass courses may be taken in one semester.

Courses taken pass/nonpass may not be used to satisfy common or major business requirements. Pass/nonpass registration must be completed during the first three weeks of a semester or the first one- or two-week block of a summer session. For courses taken on a pass/nonpass basis, an earned grade of C- or above is recorded as a P for the pass/nonpass option. A grade of D- or below is recorded as an N.

Second-Grade-Only Option

Students may elect to take a course with only a grade of C- or better. This option is available to students in the second-grade-only cram. This option can be elected prior to the time of completion of a course for which the CR/NC option is prerequisite.

For students admitted to the University prior to summer session 1987, the second-grade-only option may be applied to no more than 60 semester hours of course work. For students whose first admission to the University was for summer session 1987 or later, the second-grade-only option is limited to three courses. For all students, the option may be used only once per course.

The second-grade-only option is applicable only to courses taken both times for a standard letter grade. Students who want to use the second-grade-only option rule should register in the usual manner for the course they decide to repeat, or add it during the regular registration period (the first three weeks of the semester). They must decide whether to drop the course by reporting to the Academic Programs Office, College of Business Administration, 121 Phillips Hall. This must be done by the end
of the third week of the semester (or first round of the course's assignment). Liberal arts prerequisites must adhere to second-grade-only option procedures and deadlines set by the Liberal Arts Office of Academic Programs, 136 Schaeffer Hall.

Under the provisions of this option, the registrar marks the permanent record to show that a particular course has been repeated. Both grades remain on the permanent record, but only the second one is used in calculating the grade-point average and hours earned.

The preceding procedure of course glances at instances wherein students repeat a course. Numerous times students follow the above procedure.

Correspondence Course Work
B.B.A. candidates may not satisfy any requirement, either courses or major, through correspondence courses.

Probation and Dismissal
Students are placed on academic probation when their grade-point average in any of the following categories falls below 2.00: all course work undertaken, all course work undertaken at The University of Iowa, all business courses undertaken at the University of Iowa, all courses taken to satisfy regulations at any branch campus or courses taken at The University of Iowa to satisfy requirements for the major.

Unless all of the above grade-point averages equal or surpass 2.00, 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 from the University during the ensuing year are automatically dismissed.

Students may be dismissed from the college at any time for unsatisfactory scholarship. While some probationary period usually precedes a dismissal, even students in good academic standing who complete a semester in an extremely unsatisfactory grade may be dismissed immediately. Students dropped from the college for poor scholarship may petition for readmission, but usually only after at least one year's absence from the University of Iowa after the following the end of the term in which the dismissal took place.

International Business Certificate
The College of Liberal Arts and the College of Business Administration offer a joint program leading to a Certificate in International Business. This program entails study in the fields of international economics, international relations and institutions, a foreign language, and related area studies. It has been designed not only for students who intend to pursue careers in international business, but for anyone who is interested in gaining a better understanding of the global economy and a broader awareness of the historical, political, and social environment in which international business operates. The wide 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 notation "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, or the Office of Academic Programs, College of Liberal Arts, 136 Schaeffer Hall.

Requirements and Procedures
Students must declare their intention to pursue the Certificate in International Business in 121 Phillips Hall. In order to receive the International Business Certificate, students must receive a 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 20 semester-hours of course work (other than language) for the certificate at The University of Iowa.

A course may not be used to satisfy more than one certificate requirement. Courses in crosslistable international relations and institutions, and foreign language and related studies must be completed, as detailed below.

International Business
6.1 Principles of Microeconomics
6.2 Principles of Macroeconomics
and three of the following:
6.3 International Finance
6.431 Topics in International Business
6.446 International Business Environment
6.447 International Industrial Relations
6.456 International Accounting
6.465 International Economics
6.473 Advanced International Economics
6.474 International Economic Problems
6.476 Projects of the World Monetary Order
6.478 International Marketing

International Relations and Institutions
Two of the following:
6.415 United States in World Affairs
6.415 African Development
6.250 The Political Economy of the Third World
6.260 International Politics
6.262 Russian Foreign Policy
6.495 Human Rights in the World Community (same as 94.495)

30.170 The Politics of International Economics
30.172 Introduction to International Law
30.153 Societiy of the Third World (same as 31.153)
44.130 Introduction to Economic Geography
44.162 Geography of Underdevelopment
44.163 Geography of the Navy
101.287 International Economic Relations
113.55 Work and Service

Other courses also may be used to satisfy this requirement if approved in advance by the Interdepartmental Business Committee.

Foreign Language and Related Area Studies
To give three years of college-level work (or equivalent) in one of the following languages: Chinese, French, German, Hindi, Italian, Japanese, Portuguese, Russian, or Spanish.

Two courses that deal with countries or areas in which that language is spoken.

Lists of courses satisfying the requirements for each language are available from the Office of Academic Programs, College of Business Administration, 121 Phillips Hall, or the Office of Academic Programs, College of Liberal Arts, 136 Schaeffer Hall.

Other languages may be used if approved in advance by the Interdepartmental Business Committee.

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 economics in one of the graduate programs on the Master of Arts in business administration or the Master of Arts in economics. For information on graduate programs in economics, see "Economics" in this section of the Catalog. For information on graduate programs in business, see "Business" in this section of the Catalog.

Master of Business Administration
The Master of Business Administration (M.B.A.) program is designed to prepare students for professional administrative careers in business. The program enhances students' career opportunities and provides the commercial and government sectors with the professional personnel needed in a complex, global economy.

The curriculum is designed for college graduates in any field. Previous courses in business are not required for admission. Depending on the student's undergraduate academic background, 38 to 55 semester hours are required. Any of the eight foundation courses may be waived on the basis of previous college credit.
bans of proficiency examinations or equivalent taken as part of an undergraduate degree program, a minimum of 12 semester hours of 200-level courses 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 and Sciences or the College of Engineering may also be admitted to the Accelerated Professional Track (APT) program toward the M.B.A. degree. These students can take the M.B.A. foundations courses as electives in their undergraduate program so that they can earn both the bachelor’s and M.B.A. degrees in less time than would usually be required. APT students also agree to have a cooperative education experience in industry while in the program. After earning the bachelor’s degree and beginning full-time graduate study, APT students become eligible for special graduate fellowships sponsored by practicing firms.

Interested engineering students should have completed 2 years of engineering study, earned a 3.5 grade-point average or better, and indicated their intent to pursue both degree programs in a full-time basis. Liberal arts students should have completed at least 30 semester hours of course work in the college with a grade-point average of 3.3 or better. Further information on the APT program is available from Graduate Programs Office, 121 Phillips Hall.

Foundation Courses

6A:112 Financial Accounting—M.B.A. 3 s.h.
6E:110 Consumer and Firm Behavior 3 s.h.
6E:111 National Income Analysis 3 s.h.
6F:211 Financial Management—M.B.A. 3 s.h.
6G:159 Computer Methods—M.B.A. 3 s.h.
6H:197 Quantitative Methods—M.B.A. 3 s.h.
6L:225 Management of Organizations—M.B.A. 3 s.h.
6M:196 Marketing Management—M.B.A. 3 s.h.
Total 24 s.h.

Integrated Core

In the M.B.A., integrated core courses, students continue their education in the sequence of foundation courses listed above and pursue more advanced study associated with their own career objectives.

All students take all these courses.
6A:261 Managerial Accounting—M.B.A. 3 s.h.
6E:261 Administrative Science—M.B.A. 3 s.h.
6E:265 Strategic Management and Business Policy—M.B.A. 3 s.h.
6L:265 Administrative Policy—M.B.A. 3 s.h.
6L:268 Society, Law, and Business—M.B.A. 3 s.h.
6L:271 Statistical Methods—M.B.A. 3 s.h.
6L:275 Managerial Economics—Theory—M.B.A. 3 s.h.
6L:276 Operations Research—M.B.A. 3 s.h.
6L:287 Written Communication Skills—M.B.A. 3 s.h.
6L:292 Oral Communication Skills—M.B.A. 3 s.h.
Total 25 s.h.

Electives (15 semester hours)
The student’s choice of electives must be approved by the Academic Programs Office.

Off-Campus M.B.A.

Courses are offered during evening hours in Cedar Rapids and the Quad Cities. This program is sponsored jointly by the College of Business Administration and the Division of Continuing Education. In Cedar Rapids, the courses are offered in conjunction with the Continuing Education Association, and in the Quad Cities with the Quad Cities Graduate Study Center in Rock Island, Illinois.

Students planning the degree in the evening usually take one or two courses each semester and complete the program in four to six years. A limited number of M.B.A. courses are approved 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

Two special programs, the Executive M.B.A. and the M.B.A. Program for Emerging Managers, also lead to the Master of Business Administration degree. Admission is limited to experienced executives who want to broaden their management skills without interrupting their professional careers. Course work is presented in two academic years. Classes begin with one full week in Iowa City followed by classes one day a week alternating Fridays and Saturdays. Participants progress through the program together in a single group.

Information about the program, fees, and application procedures may be obtained by writing to the Academic Programs Office, College of Business Administration.

Master of Arts

The Master of Arts degree 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 with or without thesis and is flexible, permitting specialization according to students’ interest and objectives. Students may select a major in finance, industrial relations, human resources, and management information systems. The minor may be developed from approved course combinations within the College of Business Administration or from outside the college.

All students in the M.A. program must satisfy the community of learning 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, quantitative methods, organizational behavior, management, finance, marketing, and the economic and legal environment pertaining to profit and nonprofit organizations.

Requirements for the Master of Arts degree with thesis include the following.

Major area 9 s.h.
Minor area 6 s.h.
Electives 6 s.h.
Research methodology 3 s.h.
Total 18 s.h.

Requirements for the Master of Arts degree without thesis include the following.

Major area 12 s.h.
Minor area 6 s.h.
Electives 6 s.h.
Research methodology 3 s.h.
Research reports (two) 3 s.h.
Total 27 s.h.

In either program at least 16 semester hours of course work must be taken at the 200-level or above. Additional course work beyond the minimum semester hours may be required in order to meet the prerequisites for graduate courses in a major or minor area of study.

Students in the thesis program are expected to defend the thesis in an oral examination and may be required to take a written and oral comprehensive examination over course work. A final oral examination is required in the nonthesis program.

A nonthesis M.A. degree in industrial relations and human resources also is available by requirements which vary somewhat from those of the M.A. without thesis in other departments, as follows.

Major area 18 s.h.
Elective courses 12 s.h.
Business Electives 6 s.h.
Research methodology 3 s.h.
Research reports (two) 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 hours are inclusive of all common body of business knowledge requirements mandated by the American Assembly of Collegiate Schools of business (AACSB).
Doctor of Philosophy

The Ph.D. program in business administration is designed for students preparing for research positions in business and government, or for research and teaching positions at academic institutions. The program is flexible, permitting students to choose an area of specialization according to their interests. Sufficient course work and related experience are provided so that students achieve a balance of knowledge in the major area of study.

Course work in the Ph.D. program consists of prerequisite courses (as necessary), the Ph.D. core, major, and minor areas of study, and dissertation research. Most students (including all with master's degrees from ACOB-accredited programs) take 60 semester hours of course work. Additional course requirements may be imposed to guarantee satisfaction of business prerequisites or the Graduate College minimum total credit hour requirements (72 semester hours of graduate credit, including courses taken before entering The University of Iowa Ph.D. program).

Pre-requisite Courses

The common body of knowledge requirements of the ACOB 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 nonprofit organizations.

Core Courses

Core courses are designed to develop comprehensive knowledge in the areas necessary for career advancement in the field of business. Core courses are required as follows: behavioral sciences (3 semester hours), economics (3 semester hours), issues in scientific inquiry (3 semester hours), and research methods/statistics/quantitative analysis (12 semester hours).

To reflect the background and interests of individual students, doctoral candidates consult with their advisors to establish satisfaction of core requirements.

Major Area of Study

A minimum of 12 semester hours of graduate-level course work 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 graduate-level course work beyond the Ph.D. core course requirements must be taken. Available areas include all major areas of study listed in addition to concentrations outside the college.

Comprehensive Examinations

Students must successfully complete a written examination in both the major and minor areas of study. The examination committee is made up of a minimum of three faculty members.

Upon satisfactory completion of the written comprehensive examinations, students must pass an oral comprehensive examination encompassing subject matter in the major, minor, and related areas. The examination committee is made up of at least five faculty members.

Dissertation

A dissertation proposal must be presented before a forum attended by dissertation committee members and open to interested faculty and graduate students as established by 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 at the University of Iowa and the Graduate College application form and fee, official transcripts of all undergraduate and graduate course work, and official Graduate Management Admission Test (GMAT) scores to the Office of Admissions in Calvin Hall. Three letters of recommendation from instructors or employers should be submitted to the Academic Program Office in the Graduate College of Business Administration.

Graduate Record Examination (GRE) Aptitude Test scores may be submitted in place of GMAT scores in application for the Ph.D. program. See the "Graduate College" website at the University of Iowa for more information.

Application Information

A graduate application packet may be obtained from the Office of Admissions, Calvin Hall, The University of Iowa, Iowa City, Iowa 52242.

A completed application file requires the following:

- A completed application form and fee submitted to the Office of Admissions, Calvin Hall, The University of Iowa, Iowa City, Iowa 52242.

Official transcripts of all undergraduate and graduate work submitted to the Admissions Office by each institution attended.

Official Graduate Management Admission Test (GMAT) scores submitted to the Admissions Office, and

At least three references from former instructors or employers submitted to the Academic Program Office, College of Business Administration, The University of Iowa, Iowa City, Iowa 52242.

Foreign nationals (for whom English is not the primary language) must submit an official score of 600 or more on the Test of English as a Foreign Language (TOEFL).

Application Deadlines

The application deadlines for M.B.A., M.A. in Business Administration, and Ph.D. in Business Administration are as follows:

M.B.A. Program (Fall and Spring Entrance Only)

March 1—Foreign applicants for fall (August) or spring (January); January 1 is the latest acceptable G.M.A.T. test date.

July 1—U.S. citizens and permanent residents applying for fall (August) enrollment. June is the latest acceptable G.M.A.T. test date.

November 15—U.S. citizens and permanent residents applying for spring (January) enrollment. October is the latest G.M.A.T. test date.

M.A. in Accounting and M.A. in Business Administration (Summer, Fall, and Spring Entrance)

February 1—Foreign applicants for summer (May) or fall who are applying for financial assistance from The University of Iowa.

March 1—Foreign applicants for summer or fall who are not seeking financial assistance from The University of Iowa.

May 1—U.S. citizens and permanent residents applying for summer enrollment.

July 15—U.S. citizens and permanent residents applying for fall enrollment.

October 1—Foreign applicants applying for spring enrollment.

December 1—U.S. citizens and permanent residents applying for spring enrollment.

Ph.D. in Business Administration (Summer, Fall, and Spring Entrance)

February 1—Foreign applicants for summer (May) or fall who are applying for financial assistance from The University of Iowa.

March 1—Foreign applicants for summer or fall who are not applying for financial assistance from The University of Iowa.

March 1—U.S. citizens and permanent residents applying for summer or fall enrollment. Applications received by March 1 receive priority in consideration for financial aid.

October 1—Foreign applicants for spring.

October 1—U.S. citizens and permanent residents applying for spring enrollment.
Joint Programs
Joint programs allow students to pursue concurrently an M.A., M.B.A., or Ph.D. in the College of Business Administration and a J.D. in the College of Law, an M.A. in library and information science in the School of Library and Information Science, 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 seminar and conference rooms, a computer laboratory, an infirmary, the Business Library, and a wide variety of classroom facilities.

Extensive research materials for business and economics are maintained in the Main Library, and the facilities of the Weiss Computing Center are available to all students. Additionally, students have direct access to a complete computer laboratory within the college. The laboratory serves the instructional programs of the college, and the staff maintains a current library of computational programs and data tapes to service user needs.

External Programs
Capital Markets Research Institute
The Capital Markets Research Institute has two primary objectives: the first is to produce basic research that advances knowledge about the operation of financial markets—particularly about the relationship between the rates and returns of financial assets and the building environment—in which these assets are exchanged; the second is to disseminate the results of this research to the academic and financial communities.

Industrial Relations Institute
The Industrial Relations Institute is designed to bring faculty and students together with people in industrial relations 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 disseminates a formal mechanism for providing interaction with and economic advice to industry and government. The Institute's main objectives are to provide economic information, service, and advice on a continuing basis to business and public agencies; to provide a state-local focus for applied economic research; and to promote and enhance academic research and teaching in economics.

Labor Center
The Labor Center serves as the continuing education division of the college in the area of labor education. Labor Center staff members have conducted on-campus and off-campus programs in order to reach as many people as possible. The staff members target their instruction to the specific needs of the low movement in Iowa.

Management Center
The Management Center is a major continuing education branch of the college that provides relevant information to management and government representatives in Iowa. It disseminates current administrative, behavioral science, and management knowledge related to the working life of people in organizations through on- and off-campus conferences.

Manufacturing Productivity Center
The Manufacturing Productivity Center facilitates contractual arrangements with Iowa manufacturing firms. The agreements enable Iowa business faculty and graduate students, working with the firms' managers and engineers, to jointly identify ways to improve manufacturing productivity.

Ice B. McCladrey Institute for Accounting Research
The Ice B. McCladrey Institute for Accounting Research is the research center for accounting research 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 1983 to provide management assistance without charge to small business owners and persons interested in starting a small business. The center provides individual counseling to small businesses and conducts workshops on topics related to small business management.

Placement Services
The placement needs of the college are served by the Office of Business and Legal Affairs Placement, located in Phillips Hall. A placement media firm, student placement counseling activities, and modern 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 a liaison between alumni, friends, benefactors, and other individuals interested in the college.

Interdepartmental Courses
For Undergraduates
4000 Cooperative Education Internship 0-3 h.
6000 Cooperative Education Internship 0-6 h.

4115 Business Policy 3 h.
(Principles and management responsibilities of private enterprises; evaluation of the functional aspects of business; perspective on the role of business administration within society)

61100 Hanes Project
Independent research projects for seniors in business administration. May be repeated.

51150 Undergraduate Senior Seminar 3 h.
Presentations and discussions of business honors projects. Open only to business administration honors students. May be repeated.

For M.B.A. Students
See individual department listings for additional M.B.A. courses.

0495 Cooperative Education Internship 0-9 h.

04951 Written Communication Skills - M.B.A. 1 h.

25152 Oral Communication Skills - M.B.A. 1 h.

This program is for business students.

ACCOUNTING
Head: Verdy C. Lembke
Professor: David W. Collins (Marketing Professor), John C. Cifflinger (Great Whitsitt Professor), Verdy C. Lembke
Professor emeritus: B.L. Barnes
Assistant professors: C. Edward Aroniger, Donald L. DeJong, Jere E. Francis, Richard A. Glinskis, Bruce Johnson, Albert F. Schepis
Assistant professors emeritus: Ernesto Realemt, Thomas J. Lomazes, Richard M. Talbott, Richard A. Young

Undergraduate degree offered: B.B.A. in Accounting
Graduate degrees offered: M.A. in Accounting; M.B.A. (Ph.D.) in Business Administration
Professional Program

The professional program in accounting at The University of Iowa is a three-year upper-division, specialized and graduate program that leads to a Master of Arts (M.A.) degree with a major in accounting.

The professional program helps students develop the technical proficiency and the research, writing, and communication skills required in the accounting profession. It is designed to prepare students for careers in all areas of accounting, to help prepare candidates for the Certified Public Accountant (CPA) or Certified Management Accountant (CMA) examinations, and to prepare students for demanding leadership roles in the field of accounting. Students who want only an undergraduate-level preparation may meet their goal by completing the first two years of the professional program. The B.B.A. 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.

Students may apply for admission to the professional program in accounting after completing two years of preprofessional study that satisfies the general education admission requirements of the College of Business Administration and the accounting department (see program 1 below). Students who have completed a bachelor's degree with a major field in accounting from another institution (see program 2 below) or a bachelor's degree in a field other than accounting (see program 3 below) also may apply for the M.A. program. Advance information for program 1 is available from the Undergraduate Admissions Office in the College of Business Administration or from the head of the accounting department. Because of the heavy emphasis on oral and written communication skills in the professional program, accounting, foreign language, whose primary language is not English, and whose TOEFL scores are below 600 are not admitted.

Students in the first and second year of the professional program must maintain a 2.00 grade-point average overall and in upper-division accounting courses. Students in the third year of the professional program must maintain a 3.00 grade-point average in all graduate-level accounting courses. Students who do not maintain these minimum grade-point averages in upper-division and graduate-level departmental examination and elimination from the professional program in accounting. As a final condition for completion of the professional program in accounting (three-year program), students must pass an oral examination.

All candidates for the M.A. degree are required to submit a scope in the Graduate Management Admission Test (GMAT) as a condition for admission to the third year of the professional program. All students should consult a current issue of Suggested Plan of Study, published by the accounting department each semester, for current information regarding admission procedures, program requirements, electives, and optimal course planning.

Program I

This program is for students completing their preprofessional program at The University of Iowa.

Undergraduate students at The University of Iowa are eligible for admission to the professional program in accounting after completing 56 semester hours of college work, including the six courses required as prerequisites for admission to the College of Business Administration, 40:30 Computer Analysis, and 46:11 Statistical Analysis, and after earning grades of C or B in 46:1 Introduction to Financial Accounting and 46:2 Managerial Cost Accounting, or the equivalent. Students are designated accounting majors after their applications to the professional program in accounting have been accepted. After successfully completing the first two years of the program, students receive the B.B.A. in Accounting.

The first, second, and third-year requirements of the professional program are shown below, together with the typical semester in which they are usually taken.

First Year

Fall Semester
6A:131 Financial Accounting I 3 s.h.
B.B.A. common requirements or electives 12 s.h.
Spring Semester
6A:132 Financial Accounting II 3 s.h.
6A:115 Introduction to Taxation 3 s.h.
6A:175 Managerial Decision Models 3 s.h.
B.B.A. requirements or electives 6 s.h.
Second Year
Fall Semester
6A:130 Cost Accounting for Management Analysis and Control 3 s.h.
6A:192 Auditing 3 s.h.
6A:110 Microeconomics 3 s.h.
B.B.A. requirements or electives 6 s.h.
Spring Semester
6A:145 Financial Accounting III 3 s.h.
6A:146 Law and Business 3 s.h.
6A:105 Business Policy 3 s.h.
B.B.A. requirements or electives 6 s.h.
Third Year

These courses are available upon application to the admission of the third year of the program. As a maximum, students third-year program must include 15 semester hours of 200-level accounting courses, including 6A:220 and 6A:221, and 11 semester hours of graduate electives.

Fall Semester
6A:220 Accounting Theory I 3 s.h.
6A:220 Auditing and Regulation of Accounting Practice (or elective) 3 s.h.
6A:241 Advanced Tax Accounting for Graduate Students (or elective) 3 s.h.
6A:222 Accounting Information Systems (or elective) 3 s.h.
B.B.A. requirements or electives 6 s.h.
Spring Semester
6A:231 Accounting Theory II 3 s.h.
6A:231 Research in Taxation (or elective) 3 s.h.
6A:239 Cost Behavior (or elective) 3 s.h.
Elective 3 s.h.
Program 2

This program is for students who have completed bachelor's degrees with a major field in accounting at other institutions. Students who want to enter the professional program in accounting after having completed bachelor's degrees with concentrations in accounting from other institutions must submit an application for the M.A. program to the Graduate Admissions Office, 116 Civil Hall, The University of Iowa. Such students usually are required to take only the third year of the professional program (program 1 above) to complete the M.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.

Students with undergraduate degrees in fields other than business administration can, with careful planning, complete the professional program in accounting in two years after admission to the Graduate College. Nonbusiness undergraduates planning to enter the program should include as many five-year options in the undergraduate program as possible. For students entering in the fall semester with no previous accounting or business course work, the typical first-year courses include:

6A:912 Financial Accounting—M.B.A. 3 s.h.
6A:174 Managerial Accounting—M.B.A. 3 s.h.
6A:195 Introduction to Taxation—M.B.A. 3 s.h.
6A:131 Financial Accounting I—M.B.A. 3 s.h.
6A:132 Financial Accounting II—M.B.A. 3 s.h.
6A:150 Financial Management—M.B.A. 3 s.h.
6A:153 Financial Management—M.B.A. 3 s.h.
6A:220 Auditing—M.B.A. 3 s.h.
6A:220 Auditing and Regulation of Accounting Practice (or elective) 3 s.h.
6A:241 Advanced Tax Accounting for Graduate Students (or elective) 3 s.h.
6A:222 Accounting Information Systems (or elective) 3 s.h.
B.B.A. requirements or electives 6 s.h.

These are the typical second-year courses:

6A:231 Accounting Theory II 3 s.h.
6A:220 Auditing—M.B.A. 3 s.h.
6A:222 Accounting Theory III—M.B.A. 3 s.h.

6A:222 Accounting Theory IV—M.B.A. 3 s.h.
Professor emeritus: Anthony Comperio Associate professor: William E._Frame Russell Cooper, Raymond Reissman, John Sales, Charles Whiteman.
Assistant professor: Satyajit Chatterjee, Robert Flyer.
Adjunct professor: Robert Zucker
Undergraduate degrees offered: B.S., B.B.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. It involves systematic study of such topics as wealth and poverty, income and savings, income and consumption, government expenditures and taxation, prosperity and depression, inflation and unemployment, big business and labor unions, and many other matters that intimately affect how people live.

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 non-major as well as the major.

Undergraduate Programs

The bachelor's degree program in economics provide an excellent educational background for a variety of positions in business, government, and industry. Graduates find employment in banking, financial services, insurance, trade organizations, and in federal, state, and local government agencies, with employment in economic policy, regulation, and analysis. Economics also is regarded as an excellent preparation for law and for graduate study in various fields such as business administration, public administration, law and public policy.

The department offers three undergraduate degrees in economics—the B.A. and B.S. degrees in the College of Liberal Arts and the B.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 emphasize instruction in the basic fields of accounting, finance, marketing, business law, and management. Descriptions for the B.A. and B.S. degree programs in economics, see "Economics" in the "College of Liberal Arts" section of the Catalog.

Bachelor of Business Administration

In addition to the common requirements of the College of Business Administration, the B.B.A. degree in economics requires 18 semester hours in 100-level economics courses, including:

- 6101 Microeconomics
- 6105 Macroeconomics

Graduate Programs

Master of Arts

The Master of Arts is offered only to students working toward a Ph.D. in economics or at the degree of a Ph.D. in law with a major in Economics.

Joint M.A.-Ph.D. Programs

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 coursework from the other departments as credit toward the M.A. degree in Economics, and the other departments accept graduate credits in economics toward their degrees.

Doctoral Philosophy

The Ph.D. program is designed to provide rigorous training in microeconomic theory, macroeconomic theory, mathematical economics, and econometrics. In addition, students select a major area for intensive study and specialization. The program has three components: a coordinated sequence of core courses, a major in area courses, and dissertation.

Core Sequence

First Semester

- 61100 Mathematics for Economists I
- 61105 Statistical Methods in Econometrics
- 61200 Microeconomics I
- 61300 Macroeconomics I

Second Semester

- 61205 Mathematics for Economists II
- 61250 Microeconomics II
- 61350 Macroeconomics II

First Year

- 61121 Mathematical Analysis I
- 61122 Economic Theory I

Second Year

- 61222 Applied Econometrics

An additional 4 semester hours in 200-level economic history, history of 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 Component

Each student chooses a major area of study in addition to the core courses. The requirement for the major area is a minimum of 24 semester hours of intensive study in a field and in courses that enable students to understand the relationship between specialization and related fields. Students must achieve at least a 3.20 grade-point average in the major area courses.

Dissertation

Students must present and defend a dissertation prospectus during their third year. Admission to candidacy is granted upon successful defense of the prospectus. Submission of the completed dissertation and an oral defense of the dissertation research completes the Ph.D. program.

Courses

Primarily for Undergraduates

Note: 161 and 162 may be taken in either order or they may be taken simultaneously; they satisfy the College of Liberal Arts General Education Requirement in social sciences for economy.

1600 Corporate Executive Institute 5 sem.

161 Principles of Microeconomics 3 sem.

162 Principles of Macroeconomics 3 sem.

163 Managerial Economics 3 sem.

164 Principles of Finance 3 sem.

165 Economics of Business 3 sem.

166 International Economics 3 sem.

167 Contemporary Economic Problems 3 sem.

168 Quantitative Methods for Economics 3 sem.

169 Special Topics in Economics 3 sem.

170 Introduction to Marketing 3 sem.

171 Principles of Employment and Production 3 sem.

172 Business Environment and May employees of limited liability companies, partnerships, corporations, and non-profit institutions. The course is designed to help students with previous economics coursework.

173 Microeconomics 3 sem.

174 Macroeconomics 3 sem.

175 Environmental Economics 3 sem.

176 Business Law and Ethics 3 sem.

177 Labor and Economics 3 sem.

178 Advanced Microeconomics 3 sem.

179 Advanced Macroeconomics 3 sem.

180 Advanced Topics in Microeconomics 3 sem.

181 Advanced Topics in Macroeconomics 3 sem.

182 Advanced Topics in Environmental Economics 3 sem.

183 Advanced Topics in Business Law and Ethics 3 sem.

184 Advanced Topics in Labor and Economics 3 sem.
Students are expected to develop analytical skills and to present their analyses in both written and oral form. Students graduating with a major in finance may look forward to managerial positions in corporate treasurership or treasury work in financial institutions, in the entire range of financial businesses, or in nonprofit or government organizations. The education received is consistent with progress toward responsible managerial positions. Requirements for the Bachelor of Business Administration degree with a finance major are as follows:

6F:112 Investments
6F:113 Investments
6F:115 Financial Markets and Institutions

At least three semester hours of accounting beyond the basic core, followed by any two of:

6F:112 Security Analysis
6F:114 Commercial Banking
6F:116 Futures Trading
6F:124 Risk Management
6F:226 Real Estate and Urban Land Economics

Graduate Program

See "Interdepartmental Graduate Programs" at the front of the "College of Business Administration" section of the Catalog.

Courses

Primarily for Undergraduates

Undergraduate Program

The undergraduate finance program deals with the theory, organization, and operations of the financial system from both social and managerial viewpoints. Students are expected to develop analytical skills and to present their analyses in both written and oral form. Students graduating with a major in finance may look forward to managerial positions in corporate treasurership or treasury work in financial institutions, in the entire range of financial businesses, or in nonprofit or government organizations. The education received is consistent with progress toward responsible managerial positions. Requirements for the Bachelor of Business Administration degree with a finance major are as follows:

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Courses

Primarily for Upper-Division Undergraduates

6F:06 Cooperative Education Internship 3 s.h.
6F:104 Introduction to Financial Management 3 s.h.
6F:201 Electric Bondage in Finance 3 s.h. Individually guided readings in selected topics in finance.
6H:02 General Insurance 3 s.h.
6H:102 General Insurance 3 s.h.
6H:111 Investments 3 s.h.
6H:112 Security Analysis 3 s.h.
6H:113 Financial Markets and Institutions 3 s.h.
6H:114 Commercial Banking 3 s.h.

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6H:113 Financial Markets and Institutions 3 s.h.
6H:114 Commercial Banking 3 s.h.
Primarily for Graduates

1. M.B.A. Management of Organizations — 5.0-6.0
   1.5-3.0 Fundamental concepts, research, and application used in organizing, coordinating, and controlling business effort in decision making, organizational design and change, staffing techniques, and control mechanisms.
   2.0-4.0 Emphasis on practical application of knowledge.
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.

2. M.A. Industrial Relations and Human Resources Management — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
   6.0-7.0 Emphasis on practical application of knowledge.

3. M.A. Labor Arbitration — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
   6.0-7.0 Emphasis on practical application of knowledge.

4. M.A. Personnel Selection — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
   6.0-7.0 Emphasis on practical application of knowledge.

5. M.A. Personnel Development — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
   6.0-7.0 Emphasis on practical application of knowledge.

6. M.A. Compensation Management — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
   6.0-7.0 Emphasis on practical application of knowledge.

7. M.A. Labor Legislation — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
   6.0-7.0 Emphasis on practical application of knowledge.

8. M.S. Industrial Relations — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
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9. M.S. Personnel Management — 3.0-4.0
   3.0-4.0 Emphasis on practical application of knowledge.
   4.0-5.0 Emphasis on practical application of knowledge.
   5.0-6.0 Emphasis on practical application of knowledge.
   6.0-7.0 Emphasis on practical application of knowledge.

10. M.S. Labor Economics — 3.0-4.0
    3.0-4.0 Emphasis on practical application of knowledge.
    4.0-5.0 Emphasis on practical application of knowledge.
    5.0-6.0 Emphasis on practical application of knowledge.
    6.0-7.0 Emphasis on practical application of knowledge.
MANAGEMENT SCIENCES
SOURCES

6.6.4 Production Management
Involves the use of cost management and operations, production, and management sciences to plan and control the production and operations of manufacturing systems. This discipline is concerned with the management and operations of manufacturing systems, such as production planning and control, inventory control, and quality control.

For Undergraduates and Graduate Students
6.6.1 Individual Behavior
Involves the study of individual and organizational behavior, including decision-making processes, motivation, leadership, and group dynamics.

6.6.2 Organizational Behavior
Involves the study of the behavior of individuals and groups in organizations, including the influence of social, cultural, and organizational factors on individual and group behavior.

6.6.3 Entrepreneurship
Involves the study of the process of starting and growing new businesses, including the identification of opportunities, the development of business plans, and the management of resources.

6.6.4 Human Resource Management
Involves the study of the management of human resources, including recruitment, selection, training, compensation, and performance evaluation.

6.6.5 Strategic Management
Involves the study of the strategic planning and decision-making processes used by organizations to achieve their goals and objectives.

6.6.6 Sustainability
Involves the study of the impact of business activities on the environment and the development of strategies to achieve sustainable development.

6.6.7 Supply Chain Management
Involves the study of the management of the flow of goods and services from suppliers to customers, including logistics, inventory control, and transportation.

6.6.8 Technology and Innovation
Involves the study of the role of technology in business processes and the management of innovation, including product development, process innovation, and technology management.

6.6.9 Ethics and Social Responsibility
Involves the study of the ethical and social responsibilities of businesses, including issues related to corporate governance, sustainability, and social justice.

6.6.10 Research Methods
Involves the study of the methods used in business research, including data collection, analysis, and interpretation.

6.6.11 Communication
Involves the study of effective communication in business, including written and oral communication, public speaking, and negotiation.

6.6.12 Leadership
Involves the study of leadership in organizations, including leadership theories, leadership styles, and the development of leadership skills.

6.6.13 Finance
Involves the study of financial management, including financial planning, investment, and corporate finance.

6.6.14 Accounting
Involves the study of financial accounting, including financial statement analysis, cost accounting, and managerial accounting.

6.6.15 Marketing
Involves the study of marketing, including consumer behavior, market research, and marketing strategies and tactics.

6.6.16 Operations Management
Involves the study of the management of operations, including production planning and control, quality management, and supply chain management.

6.6.17 Information Systems
Involves the study of the use of information technology in business, including systems analysis, database management, and information systems design.

6.6.18 Human Resources
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Undergraduate Program
The Department of Marketing offers courses that help undergraduate students understand the social and economic roles of marketers. Several decades ago, the study of marketing dealt almost exclusively with business activities involved in the flow of goods from production to consumption. Today the study of marketing includes principles that are widely applicable; they are as relevant in the marketing of the arts, athletics, and social causes as they are in the marketing of goods and services. A major in marketing includes study in the behavioral sciences, communications, statistical analysis, and computer methods. Students graduating with majors in marketing may find opportunities for employment as market analysts, merchandise managers, buyers, community action agents, purchasing agents, advertising trainers, or sales representatives, in a variety of profit and nonprofit organizations.

The requirements for the Bachelor of Business Administration degree with a major in marketing are as follows:

9M134 Marketing Research 3 s.h.
9M144 senior Seminar 3 s.h.

9M150 Consumer Behavior 3 s.h.
9M137 Advertising Theory and Planning 3 s.h.
9M139 Marketing Communications 3 s.h.
9M151 International Marketing 3 s.h.
9M190 Experimental Course 3 s.h.

Graduate Program
See “Interdepartmental Graduate Program” in the front of the “Catalog of Business Administration” section of the Catalog.

Courses
Primarily for Undergraduates
9M6890 Cooperative Education Internship 6 s.h.
9M9901 Introduction to Marketing 3 s.h.

9M134 Marketing Research 3 s.h.
9M137 Advertising Theory and Planning 3 s.h.
9M150 Consumer Behavior 3 s.h.
9M139 Marketing Communications 3 s.h.
9M151 International Marketing 3 s.h.
9M190 Experimental Course 3 s.h.

9M6890 Cooperative Education Internship
Prerequisites: a grade of B or D in 9M 090 and 9M 144.

9M100 Introduction to Marketing
General introduction to the structure of marketing, marketing ethics, professional organization and its strategies with respect to marketing decisions. Buyer behavior and management of marketing decisions. Emphasis on the strengths and weaknesses of the marketing concept. 9M 100, 110 (May be taken in any order).
Dental Hygiene ................................................................. 276
Endodontics ................................................................. 278
Family Dentistry ............................................................. 278
Hospital Family Dentistry .............................................. 279
Operative Dentistry ....................................................... 279
Oral Pathology and Diagnostic .................. 280
Oral and Maxillofacial Surgery .................. 281
Orthodontics ................................................................. 283
Pediatric Dentistry ......................................................... 284
Periodontics ................................................................. 284
Preventive and Community Dentistry .................. 285
Prosthodontics ............................................................... 286

Dean: James H. McLaren
Executive associate dean: John C. Montgomery
Assistant dean for research and director of the Sonoma Institute: Christopher Lugo
Assistant dean for academic affairs: Nelson S. Yih
Assistant dean for clinical affairs: Thomas V. Garber
Assistant dean for extramural affairs: C. Frederic Gries
Assistant dean for business and financial administration: M.J. Derman
Degrees offered: D.D.S., M.S.
Doctor of Dental Surgery

The College of Dentistry is both administratively and physically an integral part of the University. It draws on and contributes to the University's diverse resources, and to academic and professional advantages and privileges enjoyed by the general student body. The college benefits particularly from its cooperative relationship with the colleges of Medicine, Nursing, and Pharmacy in The University of Iowa Health Center, whose teaching, research, and service activities have earned international recognition.

The basic educational program leading to the Doctor of Dental Surgery (D.D.S.) degree consists of approximately 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

- Gross anatomy
- Biochemistry
- Histology
- 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 radiography
- Occlusion
- Periodontal disease
- Pain control

Pediatric Dentistry

- General dentistry
- Orthodontics

Community Dentistry

- Public health dentistry
- Dental hygiene

Promotions and Graduation

Student promotions and graduation are determined by the college academic and professional performance committee, which is made up of individuals appointed by the dean from the basic teaching and clinical sciences and from other academic areas of the college. The promotion committee may recommend to the dean that a student withdraw from the college or repeat specific courses when the student is deemed generally unprepared to be promoted or to enter the dental profession.

Committee for Appeals

When a student has been asked to withdraw from the college or wants special consideration concerning promotion or graduation, he or she may appeal to the dean. All appeals are heard by an ad hoc committee appointed by the dean. The ad hoc committee investigates new information that has not previously been available and, for that reason, has not been discussed fully as the appeal committee feels it should have been. The committee determines whether this new information, or important new insights that may have been gained, could have influenced the college academic and professional performance committee's decision. The recommendation of the appeals committee is submitted to the dean for final action.

Dentistry Licensure Examination

Iowa and the states of Colorado, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming belong to the Central Regional Dental Testing Service, which serves as the testing agency for clinical examinations for licensure in three states. Examinations are administered at several testing sites located at schools of dentistry within the region. Examination-takes are determined by the Central Regional Dental Testing Service and are available from its administrative secretary.

For a five-year period, member states accept successful completion of Central Regional Dental Testing Service degree. Requirements for admission to the postgraduate programs are the same as for graduate programs. A certificate is awarded to students who complete the Advanced Clinical Co-operative Program in Endodontics, Periodontics, or Prosthodontics, and in the Advanced Operative Dental Procedures Program.
Expenses
The College of Dentistry maintains a Supply Instrument Management System (S.I.M.S.), which provides students with instruments and supplies necessary throughout dental training. The S.I.M.S. 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 $150 tessera 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. Eligibility is established by completion of the College Scholarship Service Financial Aid Form, which includes an evaluation of parents' income and assets. Needly dental students are eligible for Health Professional Loans, Perkins Loans, state grants, and Guaranteed Student Loans. Interest on these loans accrues at a comparatively low rate 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 at the Office of Student Financial Aid for updated information using financial aid assistance available to dental students.

Dentistry Research Assistantships (DRA)
Up to twenty assistantships are awarded each year to qualified entering dental students. The DRA provides financial support of $1,500 per year for as many as four years. If student maintains an appropriate level of performance.

Nonresidents receive the same stipend and fees at resident rates. Awareates are engaged as assistants in research working with faculty mentors.

Minorities
Financial assistance 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.

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. Notifications of acceptance are sent beginning December 1.

Prospective dental students are encouraged to embark on 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 upon completion of the freshman year in dentistry (see "Combined Liberal Arts-Dentistry Course" in this section of the Catalog).

Predental Studies
The basic academic requirement for admission to the College of Dentistry is the completion of no less than 94 semester hours of academic study at an accredited college. In exceptional circumstances, candidates with fewer than 94 semester hours of college work will be considered for admission if their performance and potential for the dental profession are considered outstanding.

The predental program of study should include:

- English: satisfactory accomplishment in English composition, rhetoric, and speech commensurate with the academic requirements for a bachelor's degree at the college attended.
- General chemistry: two years (equivalent to 18 semester hours), of which one-year (equivalent to 8 semester hours) must be in organic chemistry, and of which one-fourth must be laboratory work.
- Biology: one year (equivalent to 16 semester hours), which must include appropriate course work in either general biology, or zoology and botany (not biology alone).

Electives: sufficient course work in the social sciences, philosophy, psychology, history, foreign languages, and mathematics to provide a well-rounded educational background.

Combined Liberal Arts-Dentistry Course
Students who are enrolled in a baccalaureate program at The University of Iowa may be allowed to include the first year of dentistry to complete their elective hours requirements toward the bachelor's degree.

The provision for acceptance by the College of Liberal Arts of 30 semester hours of elective credit earned in any other college of the University allows students who enter the College of Dentistry to obtain a bachelor's degree from the College of Liberal Arts after successfully completing the freshman year in dentistry. To take advantage of this plan, students must fulfill all specific requirements for the bachelor's degree, including the General Education Requirements and the requirements for a major. Students also must satisfy the College of Liberal Arts residence requirement before enrolling in the College of Dentistry. See "Early Admission to Medicine or Dentistry" in the Catalog of Liberal Arts sections of the Catalog.

Grade-Point Requirement
Applicants should have a cumulative grade-point average of at least 2.5. The admissions committee gives special consideration to the quality of applicants' course work in the predental sciences in addition to the cumulative grade-point average.

Interviews
Personal interviews are required of applicants for admission to the College of Dentistry. Applicants will be contacted to arrange an interview, usually after the AADSAS application is received by the Admissions Office.

Required Dental Admission Test
All applicants must complete the Dental Admission Test (DAT) sponsored by the Council on Dental Education of the American Dental Association. The DAT are given in April and October. The University of Iowa has a testing center.

Applicants should take the test no later than October in order to be admitted for the following year. Test application forms are available from the University Office of Admissions, the College of Dentistry Academic Affairs Office, or the American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611. Test applications should be submitted at least 30 days before the test.

Deposit by Accepted Applicants
Applicants accepted before April 15 are required to submit a $500 deposit within 30 days after notification of admission.

274 Dentistry
Basic Sciences in the Dental Curriculum

The following science courses are offered by departments in colleges other than dentistry and are required as a part of the dental curriculum.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
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<tbody>
<tr>
<td>60 115</td>
<td>Human Gross Anatomy for Dental Students</td>
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<tr>
<td>60 112</td>
<td>General Histology for Dental Students</td>
</tr>
<tr>
<td>60 114</td>
<td>Oral Histology and Embryology</td>
</tr>
<tr>
<td>61 112</td>
<td>Health Sciences Microbiology</td>
</tr>
<tr>
<td>72 101</td>
<td>Biochemistry for Dental Students</td>
</tr>
</tbody>
</table>

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, Prosthodontics, Operative Dentistry, Endodontics, Oral Pathology and Diagnosis, Oral and Maxillofacial Surgery, Orthodontics, Periodontology, 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 its equivalent (except for Dental Hygiene), and departmental approval.

Departments also offer postgraduate programs of study designed as prepreparations for clinical specialty practice. These programs do not lead to an academic degree. Prerequisites for admission to the postgraduate programs of study are the same as for graduate programs. A certificate is awarded upon satisfactory completion of the postgraduate program.

112 200 | Interdepartmental Seminar in Dental Research |
112 210 | Dental Science Research (on the basis of satisfactory completion of required and experimental procedures in dental science, evaluation of literature and design of research projects) |
112 250 | Advanced Dental Research |
110 500 | Advanced Research in Oral Science |
110 510 | Oral Science Research |
DENTAL HYGIENE

Chair: Felicia Brito
Professor: Joanne Army
Associate professors: Felicia Brito, Nancy Tracy, Lea Green, Elizabeth Pelton, Nancy Thompson
Adjunct assistant professors: Joye Korna, Gayle Collins, Jane Bower
Undergraduate degree offered: BS in Dental Hygiene
Graduate degree offered: M.S. in Dental Health

Undergraduate Program

Qualified by education and licensure, the dental hygienist applies knowledge of the basic, social, and dental sciences in providing services for the prevention and control of oral disease.

The Bachelor of Science degree program in dental hygiene includes (two years of general education followed by two years of specific dental hygiene courses). The curriculum is accredited by the Commission on Dental Accreditation of the American Dental Association. Program graduates are prepared to join the national, regional, and state dental hygiene licensure 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 DD 109 Human Histology, 71 130 Introduction to Dental Pharmacology, 91 104 Introduction to Dental Laboratory, and 91 140 Introduction to Dental Hygiene. In the senior year, students enroll in DD 106 Oral Pathology and 91 104 Dental Radiology for Dental Hygienists, 87 104 Anesthesiology and Analgesia, 87 101 Dental Anatomy, and 91 102 Head and Neck Anatomy

In addition, junior learn the basic theory and clinical procedures necessary for dental hygiene practice in 87 101 Dental Hygiene Core I, and 87 103 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 87 105 Clinical Dental Hygiene in 91 106 Advanced Periodontics for Dental Hygienists. Students, each student is assigned to work with a graduate student in periodontics, performing procedures on adults who have active periodontal disease. This experience not only advances dental hygiene clinical skills, but provides both the hygiene and graduate dental students with a learning experience emphasizing the team approach.

Seniors receive additional clinical experience in 87 107 Clinical Dental Radiology for Dental Hygienists. Weekly lectures and seminars explore the clinical learning in 87 106 Seminar: Dental Hygiene Concepts and Practice.

Senior students also are required to take 91 107 Practicum: Community Dental Hygiene, 91 108 Seminar: Community Dental Health, and 91 121 Practicum in Dental Hygiene.

Courses traditionally taught as isolated subject-oriented units, such as dental health education, public health and epidemiology, are integrated 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 care. Field assignments provide students opportunity 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 support courses for students who wish to specialize in geriatric dentistry. Further information, see the "Aging Studies Program" in the College of Liberal Arts section of the Catalog.

Minors and Double Majors

Dental hygiene students have the opportunity to develop a minor in another field or to pursue a double major. Students select this option should plan their course of study with their dental hygiene advisor in close cooperation with faculty from the minor or other major department.

Admission

High School Preparation

Although there are no specific high school course requirements, college preparatory courses are recommended. These courses should include four years of English, four years of one foreign language (previously Spanish), two years of high school algebra, one year of high school geometry, and one year each of biology and chemistry.

College Preparation

Eligibility for admission to the professional program in dental hygiene requires satisfactory completion of 60 semester hours of college course work. In fulfilling this requirement, students must satisfy the General Education Requirements of the College of Liberal Arts and complete the following dental hygiene prerequisites.

Four semester hours (or transfer -students) of zoology or general biology - 31 100 Introductory Animal Biology.

Three semester hours of organic chemistry - 31 101-31 103 Organic Chemistry.

Three semester hours of microbiology - 31 104 Microbiology.

One semester hours of nutrition - 11 101 Introductory Nutrition.

Three semester hours of psychology - 31 103 Elementary Psychology.

Three semester hours of sociology - 31 102 Introduction to Social Psychology.

One semester hours of anatomy - 61 101 Elementary Human Anatomy.

Four semester hours of histology - 71 100 Human Histology.

These prerequisites provide the educational background necessary for the course of study. In addition, students admitted into the professional program of study must complete a Medical College Admission Test (MCAT) prior to acceptance.

Completion of a bachelor's degree or an associate of arts degree 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 begin the professional program in dental hygiene only in the fall. Those enrolled in the University of Iowa College of Liberal Arts need submit only the dental hygiene application for the spring semester of their freshman year. Transfer students must satisfy both College of Liberal Arts and dental hygiene applications.

It is recommended that students apply for dental hygiene admission by March 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 new 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 programs in dental hygiene are overcrowded with advanced scientific knowledge in dental hygiene; the biological, social, physical sciences; and basic knowledge of and experience in conducting research.

The curriculum design provides students with major concentrations in advanced dental hygiene theory. In the biological field, 26 units of the physiology of dental plaque including plaque microbiology and biochemistry, and the relation of plaque to caries and periodontal disease, the response of the host to dental plaque, emphasizing immunological mechanisms, and the prevention of dental disease by immunization and antimicrobial agents.

In the social science area, students consider the implications of applied sociological, psychological, economic, cognitive, and emotional concepts related to oral health. Selected readings examine sociocultural aspects, structural elements of dental care delivery systems in relation to individual family, and community oral health outcomes.

Study in the educational field includes dental hygiene theory with emphasis on dental hygiene education, elements of curricular design, and the theory and application of didactic, clinical, and practice teaching in dental hygiene.

Approximately 14 semester hours are taken as assigned courses to acquire advanced knowledge in dental hygiene and 10 are taken in research methodology and thesis preparation and defense. The remaining 10 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, and pharmacology: anesthesiology.

Electives emphasizing the social, economic, and political aspects of health include epidemiology, medical sociology, health care costs, and administration, and health economics.

Students also are encouraged to complete taking electives in higher education such as educational measurement, theories of learning, and administration.

Courses required in dental hygiene are 88:205 Dental Hygiene Literature Review, 88:205 Research Dental Hygiene, 88:205 Social Factors and Oral Health, 88:205 Clinical Dental Hygiene Education; and 88:205 Selected Topics in Dental Hygiene. Other required courses are 111:212 Statistical Methods in the Biomedical Sciences or TP 143 Introduction to Statistical Methods; and 111:224 Design and Evaluation of Research in Dentistry. Although students may begin the 34-semester-hour program during the summer session or fall semester, enrollment at the beginning of the fall semester is preferred. Most students should expect to take two academic years to complete degree requirements.

Admission
Applicants for admission are subject to the general rules of the Graduate College. Experimental requirements include an acceptable score on the Graduate Record Examination (GRE) Aptitude Test and a 2.30 minimum undergraduate cumulative grade-point average. The undergraduate education of the applicant should include courses in the following: English, history, political science, the sciences, mathematics, the social sciences, and the humanities. No minimum requirements related to the assessment of a patient's general and oral health and the principles of complete oral health services.

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, Colburn Hall. Since these materials are received before the candidate's application can be processed, students are encouraged to submit materials as early as possible prior to the semester for which admission is desired. Application 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 in the University's modern Dental Science Building. This building is part of the University of Iowa Health Center campus, one of the nation's outstanding health science teaching, research, and patient care facilities.

Financial Aid
In addition to financial assistance available to University students, there is a limited number of scholarships and loans specifically for undergraduate dental hygiene students. These loans are based on assessment of students' academic records as well as financial need.

Financial support for graduate students is available through teaching assistantships and patient care service awards. Awards are based on students' academic record and potential contributions to the teaching and patient service goals of the program. Resident assistants are charged to help other students who are teaching assistantships or patient service awards. Low interest rate loans also are available through the department.

Excellent undergraduate and graduate scholarships are available for minority students who have outstanding academic records. For further information, see "Financial Aid" in the "College of Dentistry" section of the Catalog.

Courses

For Undergraduates

010: Dental Anatomy 3.0 h.

Dental terminology, the anatomic characteristics of teeth, their physical identification, and function. Emphasis on the identification of dental morphology to clinical dental hygiene practice.

011: Head and Neck Anatomy 3.0 h.

Locate on the anatomy of the head and neck, including intracranial.

020: Dental Hygiene Care I 3.0 h.

Introductory dental hygiene theory, clinical skills, and patient selection. Clinical height and width of the oral cavity, necessary steps related to the assessment of a patient's general and oral health and the principles of complete oral health services.

021: Dental Hygiene Care II 3.0 h.

Dental hygiene treatment plan for treatment planning and performance of interproximal clinical dental hygiene and oral disease control procedures.

022: Clinical Dental Hygiene 7.5 h.

Practice of referred dental status procedures with emphasis on providing comprehensive prophylaxis and periodontal care.

025: Seminar Dental Hygiene Concept 3.0 h.

Review of current research and advances in periodontal disease, plaque, and salivary gland conditions as pertains to health care providers, current and extended roles in dental hygiene practice.

027: Practicum: Community Dental Hygiene 3.0 h.

Knowledge of dental health, dental care, and professional and research techniques employed in field experience to improve, implement, and evaluate health care and educational programs.

028: Seminar Community Dental Health 4.0 h.

Usefulness of the patient and factors that influence it, including need and demand for dental care, financing of dental care, provider and patient relationships, and active and passive disease states.

031: Independent Study 1.0 h.

A plan will be made to pursue additional work or in required topics in order to develop oral hygiene practice, evaluation and prevention of health.

For Graduates

0920: Doctoral Dental Hygiene Literature Review 2.0 h.

Analysis of dental hygiene literature on political, sociological, and educational factors influencing need and current status of knowledge in the field of dental hygiene.

0921: Research Dental Hygiene 5.0 h.

Research in dental hygiene literature, preparation of research proposal, methodology and design of dental hygiene research.

0922: Social Factors and Oral Health 3.0 h.

Cultural, social, economic, and psychological factors influencing oral hygiene and oral health care.

0929: Clinical Dental Hygiene Education 2.0 h.

Integration of research on clinical dental hygiene education, philosophy of skill teaching, scientific basis of clinical procedures, and evaluation techniques used through observation and performance in a clinical setting.

0930: Selected Topics in Dental Hygiene 2.0 h.

Subject of current, emerging, or innovative trends related to dental hygiene education.

0933: Thesis Dental Hygiene 1.0 h.


Predoctoral Program

Course work and clinical experiences in endodontics are of vital importance in the overall education of a dental student. Preclinical endodontics, taught during the sophomore year, includes both didactic and laboratory courses. In clinical endodontics, students study both normal and pathological conditions of the dental pulp and periodontium, emphasizing the areas of prevention and diagnosis of pulp and periapical 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-G.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 48 hours of classroom and laboratory instruction during the first year. Students then complete a thesis. The certificate program is designed for students employed full-time in clinical or research positions.

Courses

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<tr>
<td>63:140 Endodontics</td>
<td>2.5 h</td>
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<tr>
<td>63:145 Endodontic Preclinical and Technical Procedures</td>
<td>3 h</td>
</tr>
<tr>
<td>63:150 Clinical Endodontic Practice</td>
<td>3.0 h</td>
</tr>
<tr>
<td>63:235 Endodontic Literature Review I</td>
<td>3.5 h</td>
</tr>
<tr>
<td>63:236 Endodontic Literature Review II</td>
<td>3.0 h</td>
</tr>
<tr>
<td>63:240 Endodontic Literature Review III</td>
<td>2.5 h</td>
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Graduate

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<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>63:235 Update in Endodontics</td>
<td>1.0 h</td>
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<tr>
<td>63:236 Endodontic Literature Review I</td>
<td>3.5 h</td>
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<tr>
<td>63:237 Endodontic Literature Review II</td>
<td>3.0 h</td>
</tr>
<tr>
<td>63:238 Endodontic Literature Review III</td>
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FAMILY DENTISTRY

The Department of Family Dentistry is responsible for the training of students in the clinical and preventive aspects of dental care. The major goal is the integration of previously learned clinical skills into a well-organized and systematic approach to the comprehensive dental treatment of patients. The experience encompasses approximately three-fourths of the senior year.

Students spend five days a week in a clinical setting, where they gain experience in total patient management and care. Their didactic course work builds on the previous year's education. All areas of clinical and didactic instruction, patient communication, and sensitivity to patient needs are stressed.

The departmen't's two practice management courses are lecture and laboratory, the other clinical—preceptor training to make practice location selection as well as manage the business aspects of a dental office.
Advanced Education in General Dentistry

The Department of Family Dentistry sponsors a multi-year Advanced Education in General Dentistry Program (c.i.D.3) to improve and retain residents with clinical skills and knowledge in the practice of general dentistry and to develop general practitioners who can plan and deliver high-quality dental services. AEGD practitioners are better able to plan and coordinate comprehensive care for patients and to act as principal coordinators when specialists' services are necessary.

Residents are exposed to a broad range of clinical experiences while delivering comprehensive care to an assigned group of patients, who are treated under the AEGD practitioner's care. The didactic portion consists approximately 15 percent of the total experience and consists of seminars by discipline-trained faculty in all specialty areas. Dental emergency responsibilities are included in the program, as are orientation, microbiological, and preclinical postgraduate cases presentations. Initial clinical help is rendered by preclinical residents with the current literature and research.

The AEGD program lasts one year and carries 70 credits.

Applicants for the program must be graduates of accredited U.S. or Canadian dental schools. Further information is available from the Department of Family Dentistry. Applicants should be received no later than October 15 of each year.

Courses

Predoctoral

110.00 Introduction to Hypnotherapy in Clinical Practice
1.5h
Hypnosis as an aspect of the dental care process, emphasis on hypnotic background, a survey of current clinical uses and practical approaches for the healthcare professional. Pre-requisite consent of course director – course no 111.56

114.02 Advanced Clinical Hypnosis in Dentistry
1.0h
Same as 111.56

114.03 Practice Management in Dentistry
1.0h
Study and review of professional practice, personal management, business and office management, leadership roles, including job responsibilities, communication, decision making, personal and professional development. Emphasis on understanding the process of developing a dental practice. Designed to provide students with opportunities to operate a dental practice effectively and efficiently.

110.06 Clinical Practice Management
2.5h
Applying the principles of dental office management to clinical situations and dental facilities; emphasis on the importance of efficiency and organization in delivering high-quality care to patients.

114.07 Family Dental Care I
2.5h
Characteristics of family dental care; support of the family as an integral part of comprehensive care in family dental care management.

114.08 Family Dental Care II
2.0h
Overview of comprehensive family dental care planning and treatment; stress on implementing a comprehensive plan of family dental care management.

114.05 Family Dental Practice Lectures
1.5h
General education, oral health, public education, prevention, and development of patient knowledge and experience for preventive and comprehensive quality dental health care.

114.06 Group Practice Session
1.0h
Discussion of key issues related to the operation of group dental practices.

114.07 Symposiums and Treatments Pending
1.0h
Student participation in selected symposiums and treatment pending topics.

HOSPITAL FAMILY DENTISTRY

Acting head: John C. Montgomery

Director of Dental Health; Jeffrey Novak (Pediatric Dentistry); Robert F. Toler (Oral and Maxillofacial Surgery). Same as 110.06 (Family Dentistry)

Office of the President: General Dentistry Residency Program: Same as 110.06 (Family Dentistry)

Operative Dentistry


Assistants: Gerald L. Scott, Stephen D. Vacone, Carol R. Wilcox

The organizational framework of the University of Iowa Hospitals and Clinics includes a hospital-based dental clinical service with dentistry and oral and maxillofacial surgery, family dentistry, and pediatric dentistry. There is specialty interaction from the departments of orthodontics, periodontics, endodontics, oral pathology, prosthodontics, and craniofacial anomalies within family dentistry division. An one-year general practice residency is conducted under the auspices of that division.

Residency Program

The aim of the residency program is to provide preparation 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 program covers one year of hospital-based training designed to provide clinical, didactic, and hospital experience at the postgraduate level. Experience and knowledge gained in the residency program prepares residents for the oral health needs of a wide range of ambulatory and nonambulatory patients.

Residency training includes use of hospital resources, management of ambulatory patients, inpatients, same-day surgery patients, and emergency medical and dental patients. Residents participate in consultations with other hospital services and are assigned to appropriate hospital programs to fulfill the objectives of the training program. They are assigned to the house staff of the hospital and have the same privileges and responsibilities as residents in other professional education programs.

Applicants must be graduates of an 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 Surgery and the American Dental Association. September 1 for admission on July 1 of the next year. Applicants are appointed after the results of the match have been received and the state takes action.

OPERATIVE DENTISTRY

Head: John W. Reichard


Graduate degree offered: M.S. in Operative Dentistry.

Prodoctoral Program

Course work and clinical experiences in operative dentistry are fundamental to the overall education of a dental student. The operative dentistry curriculum is designed to be skill-developing material presented visibly close to the laboratory and clinical experiences. The program provides students with the knowledge and experience necessary to proceed independently in operative dentistry during the fourth year of training.
Graduate Program

The Department of Operative Dentistry offers a program of advanced training designed to prepare dentists for teaching, research, and practice. Since operative dentistry is not a specialty area of dentistry, there is ample opportunity in the graduate program for students to pursue courses that are of particular interest to them. They may study 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 specified graduate-level courses. Preparation of an acceptable thesis is an original research and formal defense of 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

405-406 Operative Dentistry Laboratory for Practicals

2.0 b.

Basic principles of application of dental materials and equipment to the maintenance processes of operative dentistry.

Predoctoral

523-524 Dental Anatomy Seminars

1.0 b.

Lecture and seminars covering dental terminology and understanding of dental structures and function as it relates to direct and indirect procedures of primary and permanent dentistry.

523-524 Dental Anatomy Laboratory

2.0 b.

Detailed study of the anatomy and function of the mouth utilizing wax and dental replicas to develop understanding of oral structures and functions. Techniques for clinical procedures and sound and safety principles in patient care.

532-532 Operative Dentistry I

1.0 b.

Lectures and seminars covering dental terminology, principles of operative procedures, anatomic structures, and principles and techniques of operative procedures. Introduction to use of instruments and construction procedures of indirect restorations.

533-532 Operative Dentistry I Laboratory and Clinic

1.0 b.

Study and application of procedures involved in preparing, constructing, and placing restorations. Students prepare all of the steps in isolation in natural and plastic teeth and use various dental instruments in fabrication of restorations.

534-534 Operative Dentistry II

1.0 b.

Lecture and seminars reviewing principles and design of composite restoration methods of teeth, partial removable, fixed partial, and various dental restorations in fabrication of restorations.

534-534 Operative Dentistry II Clinic

1.0 b.

Clinical training in operative dentistry on patients in operative clinic.

535-535 Operative Dentistry III Clinic

1.0 b.


536-536 Operative Dentistry III Seminar

1.0 b.

Lecture and discussions about current cases, clinical problems, and treatment methodologies discussed in relation to students' clinical experience for their respective cases.

Graduate

Discipline Studies

5235 Operative Dentistry Seminar I

1.0 b.

Literature review and discussions of current research and status of operative dentistry.

5225 Operative Dentistry Seminar II

1.0 b.

Discussion and research in operative dentistry and related to current research in dentistry.

5237 Operative Dentistry Seminar III

1.0 b.

Reading and discussions of research on problems associated with dental pulp vitality.

5238 Operative Dentistry Seminar IV

1.0 b.

Research Program

5239 Operative Dentistry Research I

2.0 b.

Trends, research, current research, and literature review for research projects, student research projects.

5231 Operative Dentistry Research II

2.0 b.

Literature review and research projects.

5229 Operative Dentistry Research III

2.0 b.

Student research projects and reports.

5339 Operative Dentistry Research IV

3.0 b.

Student research projects.

5399 Thesis Proposal in Operative Dentistry

2.0 b.

Students prepare the thesis, defend it before the committee, and take comprehensive examinations.

Clinical Studies

5235 Operative Dentistry Advanced Clinic I

4.0 b.

In-depth study of oral and permanent restorative procedures, restorative assignment in a clinic.

5241 Operative Dentistry Advanced Clinic II

4.0 b.

Treatment of patient cases in the operative clinic. Discussion of case problems and cases presented to the class by clinicians.

5243 Operative Dentistry Advanced Clinic III

2.0 b.

Patient care in the operative clinic. Discussion of case problems, critical techniques in restorative procedures.

5244 Operative Dentistry Advanced Clinic IV

2.0 b.

Patient care in the operative clinic. Discussion of cases presented to the class by clinicians.

5245 Clinical Supervision

2.0 b.

ORAL PATHOLOGY AND DYSNOSIS

Mehrdad K. Khayat


Graduate Program

The department's primary objective is to provide instruction to dental students and other health professions students in the etiology, natural history, and diagnosis of clinical and laboratory, radiographic, and microscopic features of diseases and their management, and physical evaluation of patients to identify systemic diseases and their role in oral dentistry; and the influence of dental treatment on systemic diseases.

Graduate Programs

Master of Science

Advanced instruction is available for graduate-level students in health sciences and related fields who are preparing for specialty practice or careers in teaching and research in the areas of oral patholology, oral and maxillofacial pathology, and oral radiology.

Candidates for the Master of Science degree are expected to conduct substantial ability for research into mechanisms of oral diseases. They should anticipate the considerable effort devoted to completing an assigned research project and the thesis based on it.

Minimum requirements for completion of the program are 30 semester hours of graduate credit and a thesis. A required course are:

111-212 Statistical Methods in the Behavioral Sciences

6819 Medical and Dental Science

6820 General Pathology for Medical Students

6830 Pathology for Medical Students

101-201 Oral Pathology and Dysnosis

112-210 Dental Sciences Research Methods

120-250 Pathological and Paroion Disease

120-255 Physical Laboratory and Historical Features of Disease

120-270 Oral Surgical Pathology

120-275 Research in Oral Pathology and Diagnosis

120-276 Oral and Maxillofacial Pathology

120-277 Hospital Oral Pathology

120-280 General Surgery and Surgery Clinic

120-285 Advanced Oral Pathology

The courts for research are determined for each student after consultation with the major advisor. Since most graduate of advanced programs in oral patholology follow academic careers, students

Adjunct assistant professors: S. G. Hoang, Arthur M. Hoang. Assistant in Instruction: Patty Nogroso G Garcia.
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 as orientation to hospital procedures, integration of basic and clinical sciences, evaluation of the principles of surgery, and familiarization with the routine aspects of patient care in the hospital. Competence in clinical oral and maxillofacial surgery requires knowledge of the broad spectrum of surgical problems related to the specific specialty. Therefore, in addition to hospital and clinical training, residents have advanced course work in subjects such as applied pharmacology, surgical anatomy, pathology, physiology, and microbiology. They also review closely related disciplines such as neuroanatomy, anesthesiology, physical diagnosis, and laboratory procedures.

The assumption of increased responsibility and opportunity for clinical and operating room experience are important aspects of residency training. Residents gain clinical training in oral and maxillofacial surgery through an assigned rotation in the Department of Anesthesiology. Provide advanced training in physical diagnosis, pharmacology, and pathology are greater clinical application, and increased responsibility for total patient care as first assistant and surgeon further develops surgical skills and abilities. 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 care during rotations at The University of Iowa Hospitals and Clinics and at Veterans Administration Medical Center. Each third-year resident is assigned a rotating basis in the clinical and didactic coordinator, and assumes responsibility to evaluate and assist the residents 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 is a two-year course of study designed to include clinical and research training. Initiating a research project and the presentation of a thesis.

Admission

Students must begin the four-year program only on July 1. The application deadline for oral and maxillofacial surgery is September 1 for admission on July 1 of the next year.

The applicant must take the Graduate Record Examination (GRE) Aptitude Test. The applicant must be a graduate of an accredited college of dentistry and be licensed to practice dentistry in the United States, and should be in the upper one-fourth of their graduating class.

Medical requirements include application for license to practice oral and maxillofacial surgery; an approval letter from the applicant’s referring consultant, and letters of recommendation from the dean of the student college from which the candidate graduated and two professional references.

Interviews are not required, but are strongly recommended.

Applicants are selected via a matching program sponsored by the American Association of Oral and Maxillofacial Surgeons. Applicants are matched after the match results are released and the 1st choice to take official action. All appointments should be tendered or before February 1 priority prior to the July 1 effective date.

The Office of Graduate Affairs sends an official form to applicants. The forms must be completed for the Graduate College approximately by March 1.

Facilities

The University of Iowa Health Care has outstanding basic and clinical science departments that are currently support advanced research and superior clinical practice. The facilities of The University of Iowa Hospitals and Clinics, the Veterans Administration Medical Center, and the Colleges of Dentistry and Medicine provide an appropriate environment for residency training in oral and maxillofacial surgery.

Courses

Dental Hygiene

9124 Licensure and Nargear 1sh

Provides introduction to the use of local anesthesia, practical application of drill techniques for dental hygiene students.

Predoctoral

91231 Advanced and Control I 1sh

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, neurosurgery and craniofacial structure, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.

91230 Basic Oral and Maxillofacial Surgery

Basic principles of oral surgery, induction and emergency situations, including induction, evaluation of the patient, and control of hemorrhage.

91233 Anatomy and Control 

Terminology and classification of oral, maxillary, and facial bones, and an introduction to the techniques of oral and maxillary bone surgery.

91234 Advanced and Maxillofacial Surgery

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.

91235 Oral and Maxillofacial Surgery

Provides introduction to the use of local anesthesia, practical application of drill techniques for dental hygiene students.

91236 Advanced Oral and Maxillofacial Surgery

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.

91237 Oral and Maxillofacial Surgery

Provides introduction to the use of local anesthesia, practical application of drill techniques for dental hygiene students.

Graduate

92100 Hospital Preclinical 1sh

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.

92105 Basic Science Review 1sh

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.

92110 Oral and Maxillofacial Surgery

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.

92115 Oral and Maxillofacial Surgery

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.

92120 Oral and Maxillofacial Surgery

Purposes and restrictions of clinical medical theory, basic and clinical neuroscience, an introduction to neurosurgical and instruction in the use of local anesthesia and in proper use of the drill.
ORTHODONTICS

Head: John E. Casali

Professor: George F. Anderson, Senior, E.
Barbee, Richard L. Jordon, Charles R. Kerbitz,
Robert N. Sayle

Graduate degree offered: M.S. in Orthodontics

Program Description

The purpose of the predoctoral program in orthodontics is to enable the general practitioner of dentistry to recognize, diagnose, and treat with competence simple malocclusions of the teeth. Lecture courses guide the student in basic concepts of dental and facial growth, as well as treatment-oriented subject matter. It is a laboratory course, diagnostic records are taken and evaluated and treatment appliances are fabricated. The department supervises a volunteer program for clinical treatment of selected patients.

Graduate Program

The purpose of the graduate program in orthodontics is to educate specialists capable of diagnosing and treating more complex tooth malocclusions of the teeth requiring comprehensive care. The specialist should be familiar with and able to critically analyze biologic, biomechanic, diagnostic, and treatment concepts in orthodontics.

Satisfactory completion of a 23-month period of intensive study, including lecture courses, seminars, clinical practice, and a research project, qualifies students for the Certificate of Orthodontics. If a student satisfactorily completes a thesis based on an original research project, they qualify for an M.S. degree in addition to the certificate.

Opportunities are available for research and independent study in the department. Special facilities for research in biomathematics and computer-assisted growth are available.

Interaction with other departments provides learning and research opportunities in surgical orthodontics, clinical and artificial joint treatment, growth pathology, animal experimentation, and human growth.

Admission

Admission requires the D.D.S. degree or equivalent and satisfactory grade in General College requirements.

The application deadline is October 1 for the class starting July 1. Applicants are required to come to the University for interviews with department faculty.

Courses

Predoctoral

Orthodontic Growth and Development

Orthodontic Diagnosis and Its Biological Foundation

Orthodontic Research Laboratory

Orthodontic Clinic

Orthodontic Treatment

Orthodontic Practice

Orthodontic Diagnosis and Its Biological Foundation

Orthodontic Research Laboratory

Orthodontic Clinic

Orthodontic Treatment

Orthodontic Practice
PEDIATRIC DENTISTRY
Read: Benny R. Pedersen
Professor: Carl Edland, Clarence A. Full, Arthur J. Howard, Jemmy E. Pashley, Benny D. Walker, James B. Yagen
Associate professors: Stephen J. Copefield, Mark R. Brown
Adjunct clinical associate professors: Donald Collins, Deborah A. Lathrop, Walter G. Martin, Michael J. Sackel, Loraine Lynch, Robert W. Reeder
Assistant instructors: Carl Edland, Matthew J. Rapoza
Graduate degrees offered: M.S. in Pediatric Dentistry, Certificate in Pediatric Dentistry

The Department of Pediatric Dentistry provides instruction for dental and graduate students in the prevention and treatment of dental diseases in children. Instruction combines didactic, laboratory, and clinical experiences and gives special consideration to reviewing current literature and managing dental problems of handicapped children. It also emphasizes efficient treatment through proper utilization of dental auxiliary personnel and record management.

Graduate Program
Graduate study in pediatric dentistry leads to both a certificate 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.

Studies 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 service, 30 percent to didactic course and practice teaching, and 20 percent to origination research. The program includes a core of clinical and basic science courses supplemented by elective selections determined by students' individual interests.

Dental care 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 Clinics permits 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 selected 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 area of caries, dentistry for handicapped persons, fluoride therapy, and child behavior management.

Faculty
Faculty members have numerous national and state offices, committee memberships, consultancies, and American Dental Association 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 practitioners. Several members are diplomates of the American Board of Pediatric Dentistry.

Financial Aid
Stipend assistant is available to qualified students through a grant from the Office for Maternal and Child Health, Bureau of Community Health Services, Department of Health and Human Services.

Admission
Prospective students must apply to the Graduate College.

Courses
Predoctoral

0614 Pediatric Dentistry Diagnoza and Treatment
Concepts of growth and development, behavior management, and preventive operative techniques for pediatric patients.

My 170 Clinical Pediatric Dentistry

0615 Advanced Pediatric Dentistry

Graduate

0625 Advanced Clinical Pediatric Dentistry

0626 Research in Pediatric Dentistry

0631 Thesis Proposals

0640 Advanced Clinical Pediatric Dentistry

0641 Pediatric Physical Diagnosis for Dental Practice

0642 Pediatric Therapy for Dental Practice

PERIODONTICS
Head: Philip S. Adair
Professor: Philip S. Lazzara, Jr., Charles M. Cutti, William C. Banker

Predoctoral Program

The Department of Periodontics is concerned with the diagnosis, treatment, and prevention of periodontal disease. The research program combines didactic, laboratory, and clinical experience, with emphasis on applying the biological concepts of periodontology to the comprehensive clinical management of patients who have periodontal disease.

Graduate Programs

Master of Science

The Master of Science program is designed primarily for those specializing in research, education, and specialization in periodontics. The program meets the eligibility requirements for the American Board of Periodontology certification.

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 College of Dentistry grants final approval of such special programs. The Department of Periodontics assists in developing individualized doctoral programs designed to train dentists for careers in teaching and research in periodontal diseases. Such programs are interdisciplinary with anatomic, biochemical, microbiologic, pharmacologic, and physiologic studies.

0644 General Periodontal Disease

0645 Periodontal Disease Research

0646 Practice Teaching in Pediatric Dentistry

0647 Pedodontics Case Review

0648 Periodontics for Pediatric Dentistry

0649 Periodontics and infection control in current practice
Certification

Designed to meet all the requirements of the American Board of Periodontology for eligibility for certification, the certification program provides the foundation for the clinical practice of periodontics. The certification program may be combined with the Ph.D. program.

Completion of the program requires 24 to 26 credit hours, including satisfactory completion of required and elective courses, satisfactory completion of a comprehensive written and oral examination, and an acceptable literature review or research paper.

Opportunities are provided for experience in clinical and basic research.

Admission

Admission to graduate study in periodontics requires the D.D.S. degree or its equivalent, and satisfactory performance on Graduate College admission requirements. (See the "Graduate College" section of the Catalog.) National Dental Board Examination scores, if available, are required. Interviews are encouraged but not mandatory.

Facilities

The department has 20 modern, well-equipped laboratories devoted exclusively to periodontics, and access to laboratory space in The University of Iowa Hospital and the Veterans Administration Medical Center. In addition, departmental facilities include a dental research laboratory and collaborative laboratories in biology and biochemistry, microbiology and biochemistry, and the department's own research facility.

Financial Aid

Applicants must be financially prepared to undertake uninterrupted studies. Assistantships and loans are offered, depending on available resources.

Courses

Dental Hygiene

30:104 Introduction to Periodontology 2 s.h.

Fundamental concepts of periodontology as they relate to periodontal disease and to the patient and treatment team.

30:106 Advanced Periodontology 2 s.h.

Advanced clinical diagnosis and management of periodontal disease; methods and techniques of treatment.

Predoctoral

52:106 Periodontic Methods I 1 s.h.

Basic periodontal methods, periodontics, diagnosis, and treatment planning.

52:201 Periodontal Therapy I 1 s.h.

The initial phase of periodontal therapy, treatment of periodontal disease, periodontal therapy, and surgical periodontal therapy.

52:108 Periodontics 3 s.h.

Comprehensive clinical management of the periodontal patient.

52:206 Clinical Periodontology 2 s.h.

Comprehensive clinical and laboratory management of periodontal patients.

Graduate

52:205 Advanced Periodontology 4 s.h.

Comprehensive review of periodontal therapy; emphasis on periodontal plastic surgery.

52:206 Clinical Seminar in Periodontology 3 s.h.

Comprehensive management of periodontal patients with emphasis on periodontal plastic surgery.

52:207 Periodontal Therapy II 3 s.h.

Clinical periodontal therapy, including diagnostic methods and treatment planning.

52:209 Laboratory Methods II 1 s.h.

Advanced laboratory methods in periodontics.

52:210 Clinical Periodontology 3 s.h.

Clinical periodontal therapy, including diagnostic methods and treatment planning.

52:211 Bioclinical Aspects of Periodontics 3 s.h.

Clinical periodontal therapy, including diagnostic methods and treatment planning.

52:212 Periodontic Literature Review I 1 s.h.

Periodontal literature review.

52:213 Periodontal Literature Review II 1 s.h.

Periodontal literature review.

52:214 Research Literature Review 1 s.h.

Research literature review.

52:215 Thesis Preparation in Periodontology 3 s.h.

Supervised writing of original research project and completion of thesis.

52:406 Advanced Clinical Periodontology 6 s.h.

Comprehensive clinical management of patients with emphasis on the complex case.

PREVENTIVE AND COMMUNITY DENTISTRY

52:102 Introduction to Preventive Dentistry 2 s.h.

Introduction to preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

52:104 Advanced Preventive Dentistry for Dental Hygienists 2 s.h.

Advanced clinical preventive dentistry, prevention of disease, recognition of risk factors for disease, and maintenance of treated periodontal conditions.

52:202 Preventive Dentistry 2 s.h.

Preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

52:204 Advanced Preventive Dentistry for Dental Hygienists 2 s.h.

Advanced clinical preventive dentistry, prevention of disease, recognition of risk factors for disease, and maintenance of treated periodontal conditions.

Predoctoral Program

Programs in preventive and community dentistry are designed to increase dentists' awareness of public health needs and to encourage them to develop and implement approaches to alleviate these needs effectively.

Programs are designed to provide students with opportunities to interact with health care teams and members of communities in Iowa. The department conducts five full-time and one part-time educational programs throughout the state.

Using the community as the classroom, students are able to observe and participate in a variety of activities intended to make them aware of the societal obligations they must assume in order to practice effectively.

Included in the department's resources is a mobile dental van designed for geriatric purposes. The van, operated throughout southeast Iowa, gives senior dental students a unique experience with this age group.

Graduate Program

The Master of Science degree program is designed to prepare students in community dentistry and dental public health with emphasis on research. In addition, a clinical track emphasizing geriatric dentistry is concurrently available. The program objective is to help students achieve a high level of competence in their respective areas of research. Successful graduates will have met educational requirements necessary to maintain their eligibility for the American Board of Dental Public Health.

The program requires a minimum of 51 credit hours, each of which includes a thesis containing original research. Students are expected to take at least two academic years to complete all degree requirements.

Courses

Predoctoral

110:106 Preventive Dentistry I 3 s.h.

Introduction to preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:108 Preventive Dentistry II 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:110 Preventive Dentistry III 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:112 Preventive Dentistry IV 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:114 Preventive Dentistry V 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:116 Preventive Dentistry VI 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:118 Preventive Dentistry VII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:120 Preventive Dentistry VIII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:122 Preventive Dentistry IX 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:124 Preventive Dentistry X 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:126 Preventive Dentistry XI 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:128 Preventive Dentistry XII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:130 Preventive Dentistry XIII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:132 Preventive Dentistry XIV 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:134 Preventive Dentistry XV 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:136 Preventive Dentistry XVI 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:138 Preventive Dentistry XVII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:140 Preventive Dentistry XVIII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:142 Preventive Dentistry XIX 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:144 Preventive Dentistry XX 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:146 Preventive Dentistry XXI 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:148 Preventive Dentistry XXII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:150 Preventive Dentistry XXIII 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

110:152 Preventive Dentistry XXIV 3 s.h.

Advanced preventive dentistry, including basic information on oral health, and the role of preventive dentistry in the patient care situation.

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 1967, and the College of Education, structured in the basic pattern that governs it today, was founded in 1915. The growth of the college has corresponded to the growth of the University.

Faculty members have been leaders in a variety of educational fields. Particularly noteworthy were their early developments in educational testing and measurement. They helped lay the foundation for today's educational testing and measurement industry, making Iowa City one of the best-known centers for its educational specialty.

The college has seven divisions: Counseling Education; Early Childhood and Elementary Education; Educational Administration; Foundations; Professional and Continuing Education; Psychological and Quantitative Foundations; Secondary Education; and Special Education.

It is accredited by the National Council for Accreditation of Teacher Education (NCATE) through the doctoral degree for the program of elementary and secondary teachers and other professional school personnel. Teacher preparation programs are also reviewed and approved by the Iowa Department of Education.

Teacher Education Programs

The College of Education at The University of Iowa offers an undergraduate teacher education program, each of which leads to a state of teaching certification. Two of the programs involve earning a College of Education major: elementary education and health occupational education.

The other two programs are teacher education programs, one in early childhood teaching, the other in teaching subject areas at the secondary level. To receive an endorsement to teach at the secondary level, students must complete an appropriate major in one of the departments of the College of Liberal Arts and complete the professional degree required by the College of Education. To receive an endorsement for each major, students must complete a major in elementary education.

Preparation for special education teaching is offered at the graduate level. A limited number of undergraduate special education courses are also open to all students seeking an interest in this area. These include the other teacher education programs, and those planning to pursue graduate degrees in special education.

All students admitted to a teacher education program (TEP) from one of the four major programs of the College of Liberal Arts General Education Requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies.

Undergraduate Admission to Teacher Education Programs

Undergraduate applicants to The University of Iowa who are interested in becoming teachers should indicate their proposed 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, N110 Liedquist Center.

Application Deadlines

The deadlines for applicants to teacher education programs are July 1. Applications also may be submitted by November 1 or April 1. Admission of qualified applicants on these dates will be approved if openings in the programs are available.

General Requirements

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);
- Attained sophomore standing (completed 30 semester hours) prior to the semester during which enrollment is made in the foundations of education sequence of courses;
- Achieved a 2.50 grade point average on all college courses, as well as course work completed at The University of Iowa; and
- Applied for admission to a teacher education program.

Graduate Admission to Teacher Education Programs

Students who have completed a baccalaureate degree may be admitted to a teacher education 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 area with a Master of Arts in Teaching (M.A.T.) objective. Students selecting this route must meet the following conditions:
  - Admission to the Graduate College;
  - A cumulative grade point average of not less than 2.50 in undergraduate work;
  - 3.00 for M.A.T. objective; and
  - Admission to a specific certification program (e.g. elementary education, special education, or secondary English).
- They may apply to the College of Liberal Arts as preprofessional 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 admission section.

Student Teaching

The final phase of the teacher education program is the professional semester. Devoted to supervised student teaching, directed observation is a variety of situations. Periodic conferences for discussion and evaluation of student teachers' experiences. The student teaching requirement may not be met by triniversity credit unless a similar classroom experience is approved.

Admission to the senior year student teaching semester is by separate application. Applications must be submitted by March 15 of the academic year preceding the one during which the student teaching is to be completed to the Office of Student Services, N110 Liedquist Center. Opportunities for overseas and urban student teaching experiences are available. Requirements for admission to student teaching vary by programs and academic area. Students should consult their advisors regarding specific requirements for the several programs areas.

Waivers

Students who have completed teacher education programs at other institutions that they think should be considered in lieu of standard requirements should consult with their advisor.

Urban Student Teaching

Students who want to advance their educational interests through student teaching in an urban setting may apply through the Office of Student Field Experiences. Popular settings for urban student teaching include the CUTF Program (Cooperating Urban Teaching Fields). This option is open to all major departments of education (bilingual, elementary, secondary, and special education) who meet the requirements for students teaching.

Overseas Student Teaching

Overseas students teaching experience is available in cooperation with the University of Wisconsin—River Falls. The overseas areas available include Ireland, England, Scotland, Wales, and Austria. In most locations, assignments are assisted by housing by the on-campus coordinator. Interested students must meet the regular requirements for student teaching and must have the approval of their advisor and the appropriate division chair. Overseas assignments are for eight weeks. Secondary education students are required to
Master of Science

The M.S. in education is designed for students who wish to study the application of the latest in educational research and methodology to their own instructional practices. The program is designed to provide students with the knowledge and skills necessary to become effective educators in today's schools. It is ideal for those interested in enhancing their classroom performance, improving curriculum development, and leading educational innovation.

Support and Special Resources

The College of Education provides a wealth of resources to support its students and faculty. The library houses a vast collection of books, journals, and other materials, providing access to the latest research and best practices in education. The College also offers workshops, seminars, and conferences to keep faculty and students informed of the latest trends and developments in the field. Additionally, the College has partnerships with local schools and districts, providing opportunities for practical experience and professional development.

Audiovisual, Video Production

The College of Communication and Information offers a range of options for students interested in audiovisual and video production. The College provides state-of-the-art facilities and equipment, as well as access to professional mentors and opportunities for hands-on experience. Students can choose to specialize in areas such as digital media, video production, and audio engineering, and can develop skills in areas such as storyboarding, editing, and production techniques.

University of Iowa

For more information, visit the University of Iowa website at www.uiowa.edu.
College of Education
Student Loan Fund

The College of Education Student Loan Fund was established by combining four existing accounts honoring Associate Dean Emeritus L.H. Van Dyke, Prosector Emeritus John Heister and John Mulkern; the late Peter Morelove; a separate account for former alumnus; and the late Donald Seyer, a University professor. The benevolence of the friends of Education students who are faced with extraordinary expenses while pursuing degree or certification programs, for example, unforeseen emergencies.

The borrower must be a senior or post-bachelor's degree student seeking teacher certification or a graduate student seeking an advanced degree or certification in the College of Education. The borrower must have completed the equivalent of at least two semesters of full-time course work at The University of Iowa, have a strong academic record, and demonstrate potential for success in the field of education.

Information and application forms are available from the director of college development, Educational Placement Office, NHU Uniquity Center.

College of Education Awards

Awards are presented to outstanding graduate students in the College of Education at the spring semester faculty meeting of the college. The awards include:

- The Hewner-Hieronymus Fellowship, awarded annually to a doctoral student in the field of educational measurement and statistics. Nominees must have completed at least one full year in the graduate program.

- The Cardinal Fellowship. The award is based on academic performance in the field of educational measurement and statistics. The fellowship stipend supplements the recipient's teaching or research assistantship each year until graduation, to a maximum of three years.

- John Leonard Duvall Memorial Award, awarded to an outstanding graduate student majoying in education whose specialization is adult and continuing education.

- Harvey R. Davis Award, awarded to an outstanding student in education administration whose specialization is higher education, particularly a student interested in the financing of education.

- Howard R. Jones Achievement Award, awarded 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.

- Perry Eugene McGuffin Award, awarded to the outstanding candidate for an advanced degree in educational administration.

- Leonard J. Miller Memorial Award, awarded to an outstanding first-year M.A. student majoring in rehabilitation counseling.

- The Melvin R. Novick Award, presented annually to a student enrolled in the doctoral program in educational measurement and statistics. This award is given to a third- or fourth-year student with at least 2 years of study remaining who has shown the most outstanding academic performance and promise of the highest level of achievement in this field.

- The award honors Professor Melvin R. Novick (1921-1986) for his significant contributions to the field of educational measurement and statistics and for his devoted service to the arts and educational programs at the University of Iowa. The field is established to honor students recommended by Professor Novick.

- Paul C. Packer Award, awarded to the outstanding graduate student majoring in the Master's Degree in Education.

- Pi Lambda Theta Award—Senior, M.A., and Ph.D. levels, to outstanding students of high scholarship, promise in the professional role of teaching, research, or writing, and supporting personal qualities.

- James and Corena Stross Fellowship for Doctoral Study in Educational Psychology, Measurement, or Statistics, to an outstanding graduate student in the Division of Psychological and Quantitative Foundations who is entering the dissertation phase of study.

- Janet R. Zorer Memorial, to an outstanding student preparing to teach in a visually handicapped (including the hearing impaired).

- Friedrich Stromfelt National Student Award, to an outstanding international student pursuing a Ph.D.

Faculty

All tenure track faculty members with professional rank have teaching and research duties in their teaching fields, and the majority have had teaching or administrative experience in the public schools.

A major strength of the college is its close working relationship with the College of Liberal Arts. With few exceptions, professors in the College of Education also hold academic rank in the College of Liberal Arts. A majority of the professors who teach secondary school methods have doctorates in their teaching disciplines as well as preparation in education, and hold professional rank in both their academic departments and in education.

Interdivisional Courses

TE402 Cooperative Education Internship (3 hrs.) 

Students participating in cooperative education internships register during the assigned period, register at least prior to the internship and present the completed application to the appropriate Personnel Office for approval and satisfactory completion of cooperative education requirements.

TE500 Issues Seminar in Education (1 hr.) 

Introduction to research and education and related problems with presentations by College of Education faculty; students select a faculty member with whom to collaborate on research.

TE605 Topic in International Education (1-3 hrs.) 

Topics in education in the United States and foreign countries, issues of minority and special populations, language and culture, and interpersonal human relations skills.

TE650 Topic in Human Relations (1-3 hrs.) 

Issues and faculty seminar topics. May be repeated.

TE670 Human Rights and Equity Issues (1-3 hrs.) 

Selected human rights and equity issues, behavioral bases of prejudice, discrimination, racism and sexism, institutionalized racism, cultural politics and the meeting of cultural needs, cross-cultural communication, aspects of cultural and ethnic minority groups, multicultural education in the United States.

COUNSELOR EDUCATION

Chair: Nicholas Colangelo


Assistant Professors: Diane Logan Thompson, Suzanne Weisman, Michele Mosher, Susan M. Mikesell, Ann M. Doolan

Adjunct Instructors: Alice Schur, Orlie Thomas

Adjunct Assistant Professors: Nancy Barrett, Kay Collum, Cheryl Gettins, Philip James, Nancy Norton, Mary Stathen, Aneen Hake

Adjunct Associate Professor: Donald H. Multis

Adjunct Professor: William A. Mathis

The Division of Counselor Education is primarily involved in the preparation of practitioners and certificate students at the graduate level; through degree programs in student development, counseling, rehabilitation counseling, counseling and human development, and substance abuse counseling. The division also offers basic courses in interviewing and interpersonal skills for students in other professional and graduate programs, as well as for undergraduates.
Admission

Requirements

Detailed information on admissions and program requirements is presented in the brochure "Preparing for Advanced Degrees," available from the Division of Counselor Education.

All applicants for the Master of Arts, Education Specialist, and Doctor of Philosophy degrees are typically expected to meet the following admissions requirements:

- Completed graduate application form.
- Copies of original transcripts of all previous college work—undergraduate and graduate.
- Official report of Graduate Record Examination (GRE) General Test scores—verbal and quantitative.
- A statement of the candidate's reasons for seeking an advanced degree in counselor education, including a statement of personal career objectives.
- A personal or telephone interview if requested.

Three current letters of recommendation from professors in a position to assess both the applicant's potential for completing the M.A., Ed.S., or Ph.D., and his or her suitability for the profession.

In addition to the above, the following requirements must be met for the individual programs:

M.A. Candidates

An undergraduate grade-point average of 2.75 or better and a composite (verbal and quantitative) GRE General Test score of 1000 or better.

Ed.S. Candidates

A graduate grade-point average of 3.25 or better and a composite (verbal and quantitative) GRE General Test score of 1000 or better.

Ph.D. Candidates

An undergraduate grade-point average of 3.00 or better or a graduate grade-point average of 3.00 or better if the graduate degree has been completed; composite (verbal and quantitative) GRE General Test score of 1100 or better.

Typically, doctoral students are not admitted unless they have completed a master's degree in counseling or a related field. Relevant work experiences are important. Students who are accepted without a master's degree (including a master's ungraded or counselor education) must complete core multi-semester coursework before taking the doctoral level advanced courses. Core coursework and experiences to be completed are determined in consultation with the advisor and are included in a student's curriculum plan.

International Students

International students must also provide a Test of English as a Foreign Language (TOEFL) score with their applications. Typically, a score of 550 is acceptable. Depending on the TOEFL score, the division may require applicants 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 admission. Final decisions on admissions are made by faculty committees. Also, some programs may have specific admissions 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 the minimum requirements for regular admissions consideration may still be admitted on a conditional basis if the faculty members feel that there are strengths and promises warranting conditional status. The following are divisional conditions:

M.A. Level—Students must complete 12 semester hours of core courses (approved by an advisor) over two consecutive semesters and earn a minimum cumulative grade-point average of 3.00.

Ph.D. Level—Students must complete 12 semester hours of core courses (approved by an advisor) over two consecutive semesters and earn a minimum cumulative grade-point average of 3.50.

Application Deadlines

Deadlines for the M.A. and Ed.S. programs are June 1 for fall semester; November 1 for spring semester; and April 1 for summer session. The Ph.D. program deadline is March 1 for fall semester.

Application must be complete before they will be reviewed. Applicants are responsible for providing a complete applications package. Application forms are available from the Division of Counselor Education secretary, 1088 Library Center, The University of Iowa, Iowa City, IA 52242; phone (319) 335-2375. Applicants should check on whether an application is complete by contacting the Office of Student Services, 1088 Library Center, The University of Iowa, Iowa City, IA 52242; phone (319) 335-2355.

Admission applications are accepted immediately after such deadline, applications are reviewed in writing. Applicants who are accepted are expected to write in order to maintain their admission status.

Maintaining Candidacy

All graduate students must meet the following standards in order to maintain their candidacy for degree.

- Maintain a cumulative grade-point average of 3.00 or better (GPA of 3.00). This includes the first semester of study. Students who earn a grade-point average lower than 3.00 are put on probation.
- Maintain a cumulative grade-point average of 3.25 or better (GPA of 3.25). This includes the second semester of study. Students who earn a grade-point average lower than 3.25 are put on probation. Students on probation 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.

Programs

Student Development in Postsecondary Education

The M.A. program provides preparation for college placement, admission, student services, financial aid, student union, career planning and placement, residence halls, foreign student services, community college counseling, adult counseling, and special education programs. Students, with experience, is a foundation for positions as student advisors and college teachers.

No specific program of undergraduate study or work experience is required for admission to the M.A. program. A personal interview is desirable, but not required.

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Education Specialist

The U.S. program provides specialization in professional preparation in college student development beyond the master's level for persons setting to enter doctoral study. It helps prepare candidates for positions such as associate dean or director of academic or student services or in a small college, or director of
Doctor of Philosophy

The Ph.D. program provides preparation for positions in university teaching and research, and for professional or public service in education, industry, government, or health-related fields. The program is designed to develop research skills and to prepare students for careers as teachers and researchers. The program includes course work and a dissertation. The dissertation is expected to contribute to the field of education and to meet the standards of the university. The dissertation is expected to be an original contribution to knowledge and to be based on significant research. The dissertation is expected to be submitted to the Graduate School for review and approval. The dissertation is expected to be a substantial and significant contribution to the field of education. The dissertation is expected to be a valuable contribution to the field of education. The dissertation is expected to be a valuable contribution to the field of education.

Counseling and Human Development

The M.A. program prepares students for careers in counseling and related fields. The program includes course work and a practicum. The practicum is expected to be an opportunity for students to gain hands-on experience in counseling. The practicum is expected to be a valuable opportunity for students to gain hands-on experience in counseling. The practicum is expected to be a valuable opportunity for students to gain hands-on experience in counseling. The practicum is expected to be a valuable opportunity for students to gain hands-on experience in counseling. The practicum is expected to be a valuable opportunity for students to gain hands-on experience in counseling.

Rehabilitation Counseling

Master of Arts

The M.A. program prepares students for careers in rehabilitation counseling. The program includes course work and a practicum. The practicum is expected to be an opportunity for students to gain hands-on experience in rehabilitation counseling. The practicum is expected to be a valuable opportunity for students to gain hands-on experience in rehabilitation counseling. The practicum is expected to be a valuable opportunity for students to gain hands-on experience in rehabilitation counseling. The practicum is expected to be a valuable opportunity for students to gain hands-on experience in rehabilitation counseling.

Doctor of Philosophy

The Ph.D. program prepares students for careers in rehabilitation counseling. The program includes course work and a dissertation. The dissertation is expected to be an original contribution to knowledge and to be based on significant research. The dissertation is expected to be submitted to the Graduate School for review and approval. The dissertation is expected to be a valuable contribution to the field of rehabilitation counseling.

Rehabilitation Psychology

The Ph.D. program in rehabilitation psychology includes a strong component in psychology. A minimum of 18 semester hours is required in basic psychology core courses in the areas of biological, cognitive, developmental, social, clinical, and educational psychology. These areas of study are necessary for the program to be recognized by the American Psychological Association as a psychology program. They allow the program to be listed as a "designated" psychology program by the National Register of Health Service Providers in Psychology.

Facilities

A wide variety of counselor-education practitioners and students are involved in the counseling of students in the counseling and human development graduate program. The counseling and human development graduate program is designed 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. The program is designed 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. The program is designed 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. The program is designed 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.

Financial Aid

Interested in federal funding, graduate training fellowships 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. Some graduate assistantships are awarded on a part-time basis to graduate students in the division. Applicants for assistantships should contact the coordinator of the particular counselor education graduate program they plan to enter.

Courses

TCH 535: Research in Educational Counseling

An applied psychological principles of educational counseling. 3 s.h.

TCH 613: Career Counseling for Education

A survey of career counseling theories, methods, and techniques. 3 s.h.

TCH 612: Educational Psychology and Psychology of Learning

An introduction to educational psychology. 3 s.h.

TCH 611: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 610: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 609: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 608: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 607: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 606: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 605: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 604: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 603: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 602: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 601: Educational Psychology

An introduction to educational psychology. 3 s.h.

TCH 600: Educational Psychology

An introduction to educational psychology. 3 s.h.
URGENT

Undergraduate Elementary Education Program

Students pursuing a major in elementary education must meet the College of Liberal Arts requirements for either the B.A., B.S., or B.G.S. degree. The type of liberal arts degree earned is a matter of personal choice; school district and most graduate colleges of education do not discriminate between the B.A., B.S., or B.G.S. degrees.

Admission
In order to be considered for admission into the elementary program, students must have a minimum 2.50 grade-point average as at least 28 semester hours of college work. The student must have a 2.50 grade-point average on all college courses and on all University of Iowa courses. These are minimum criteria; they do not guarantee admission into the program.

Applications for admission to the undergraduate elementary education program should be submitted to the College of Education Office at Student Services, 7130 Lindquist Center. The deadline for application for admission to the elementary teacher education program is July 1. Applications also may be submitted by November 1 or April 1. Qualified applicants will be admitted on these dates only if openings in classes become available. Once admitted, students must maintain a minimum grade-point average of 2.50 for all work completed in the College of Education as well as at all University of Iowa courses.

Program Requirements

Foundation Courses
These three courses must be completed before any methods courses are begun.

7E/101 Pre-Practicum, Elementary Education 3 s.h.
7E/100 Introduction: Elementary and Early Childhood Teaching 3 s.h.
7T/15 Educational Psychology and Measurement 3 s.h.

These two courses should be completed before methods courses begin, but may be completed during the final semester of methods courses.

7E/102 Audiovisual Equivalents for Instruction 1 s.h.
7W/02 Introduction to Microcomputer for Teachers 1 s.h.

Total 10 s.h.

Methods Courses

Block A (to be taken concurrently)
7E/123 Literature for Children I 2 s.h.
7E/160 Methods: Elementary School Language Arts 3 s.h.
7E/159 Methods: Elementary School Reading 3 s.h.

Block B (to be taken concurrently)
7E/101 Methods: Elementary School Mathematics 2 s.h.
7E/102 Methods: Elementary School Science 2 s.h.
7E/159 Methods: Elementary School Art 2 s.h.
7E/160 Mathematics-Science Projects 2 s.h.

One of the following:
7E/120 Methods and Materials in Music for the Classroom Teacher 3 s.h.
7E/122 Methods and Materials: Art for the Classroom Teacher 3 s.h.
7E/127 Methods and Materials: Physical Education for the Elementary Teacher 2 s.h.
7E/120 Methods and Materials: Health Education for the Elementary Teacher 2 s.h.

Total 19 s.h.

Other Requirements
7T/110 Exceptional Persons 3 s.h.
7T/110 Human Relations for the Classroom Teacher 3 s.h.

Area of Specialization

A minimum of 24 semester hours must be completed in one of the following areas of specialization: art, English as a second language (ESL), early childhood, English language arts, health, history, mathematics, multicultural, music, physical education, religion, science, social science, speech communication, theater. Courses of the requirements for each area of specialization are available in the Division of Early Childhood and Elementary Education office. Courses in the area of specialization may be taken pass-no-pass if they are offered with the pass-no-pass option. Courses in some areas of specialization are sequenced in a definite pattern leading up to student teaching; others have no required sequence and may be completed before or after student teaching. Students should consult with their advisors if they have questions.

Student Teaching

A minimum of 24 semester hours must be completed in one of the following primary areas:

7T/127 Classroom Management 2 s.h.
7T/120 Supervised Teaching in the Elementary School: Interactive Phase 6-7 s.h.
7T/121 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase 5-6 s.h.
7T/129 Special Area Student Teaching 6 s.h.

Total 16 s.h.

Transfer students must complete at least 21 semester hours of course work, including two core courses:
7E/101-2, 164, or 7E/123 at The University of Iowa in their student teaching. A minimum of 14 semester hours of student teaching is required.
Graduate Programs

Master of Arts

Early Childhood Education

The program is designed to prepare persons to administer and deliver care and education to children from infancy through the early primary grades in private and public settings, or to serve as early childhood consultants or community college teachers. Admission preference will be given to applicants with undergraduate degrees that focus on the education and/or development of young children, from colleges or departments of education, home economics, social work, or child development.

A core of courses (or their equivalents) is required of all students:

- TED 200 Methods and Materials: Music for the Classroom Teacher 3 s.h.
- TED 202 Methods and Materials: Art for the Classroom Teacher 3 s.h.
- TED 250 Parent-Teacher Communication 3 s.h.
- TED 451 Early Childhood Education I 3 s.h.
- TED 456 History and Philosophy of Early Childhood Education 3 s.h.
- TED 458 Development and Administration of Child Care Centers 3 s.h.
- TED 459 Supervision of Teaching Early Childhood Education 3 s.h.

- Either TED 120 or TED 122 may be taken as part of the core.

Students seeking teacher education or endorsements in other states must assume the responsibility of determining what extra requirements have to be met. Addresses for other state certification offices are available in the College of Education Student Services Office, NIT300 Lindquist Center.

Admissions

The liberal arts and elementary requirements total approximately 110-130 semester hours. Students who meet or test out of the rhetoric, foreign language, math, and other liberal arts requirements may be able to satisfy their program requirements in as few as 113 semester hours.

Adding Endorsements to Certificates

The undergraduate elementary education program is designed specifically to prepare students to teach kindergarten through sixth grade. As an addition to the K-6 Iowa endorsement, students may complete requirements for the Iowa preschool/kindergarten endorsement or the Iowa English as a second language (ESL) endorsement or as Iowa subject area endorsement (see "Area of Specialization," above). Students seeking the preschool/kindergarten endorsement must complete the elementary major, the early childhood specialization, and the following additional courses:

- TED 120 Methods and Materials: Music for the Classroom Teacher 3 s.h.
- TED 122 Methods and Materials: Art for the Classroom Teacher 3 s.h.
- TED 153 Early Childhood Education I 3 s.h.
- TED 160 History and Philosophy of Early Childhood Education 3 s.h.
- TED 180 Development and Administration of Child Care Centers 3 s.h.
- TED 459 Supervision of Teaching Early Childhood Education 3 s.h.

- Either TED 120 or TED 122 may be taken as part of the core.

Elementary Education

This degree program, which may be taken with either 124 (20-week/sixteen-hour minimum) or without (32-week/twenty-hour minimum), is designed to prepare master’s degree candidates in elementary education to serve as teacher leaders, grade level or subject area supervisors, or curriculum consultants. Admissions requirements are the same as those established by the Graduate College. In addition, applicants must meet all competencies and pass the core course work in advanced methodology. Graduate students who have not completed an undergraduate program in elementary education may be admitted initially as "certification only" candidates.

Developmental Reading

This program prepares graduate students for positions as reading specialists in kindergartens and grades 1-12. The course work required develops the skills, knowledge, and competencies needed for supervisory, curricular, and remedial teaching positions in reading. The program also builds a background in reading for students who wish to specialize further in this area and eventually to teach and/or conduct research in a college or university. Successful completion of this program, combined with one year of successful teaching experience that includes the teaching of reading as a significant part of the responsibility, qualifies the student for certification as a reading specialist.

Admissions

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.

Degree Requirements

A minimum of 32 semester hours with thesis, 35 without thesis, is required. The following courses are required of all candidates:

- TED 171 Reading and Language Skills Reading 3 s.h.
- TED 174 Reading Clinic: Teaching Techniques 2-3 s.h.
- TED 177 Reading Clinic: Teaching Practices 2-3 s.h.
- TED 204 Reading Foundations for Reading: Primary and Secondary 2-3 s.h.
- TED 205 Supervision of Intermediate Grade Reading 3 s.h.

- Either of the two following courses:
  - TED 194 Methods High School Reading 2-3 s.h.
  - TED 195 Developing Reading Skills in Secondary Schools 2-3 s.h.

- Either of the following two courses:
  - TED 150 Introduction to Educational Measurement 3 s.h.
  - TED 152 Diagnostic and Prescriptive Approaches to Reading Instruction K-12 1-4 s.h.

- Either of the following two courses:
  - TED 244 Seminar: Secondary Reading 3 s.h.
  - TED 248 Seminar: Secondary Reading and Current Issues (Reading) 3 s.h.

- One of the following courses:
  - TED 108 Developmental Reading 3 s.h.
  - TED 131 Educational Psychology 3 s.h.

- One of the following courses:
  - TED 133 The Adolescent and Young Adult 3 s.h.

- One of the following courses:
  - TED 186 Curriculum Foundations 3 s.h.
  - TED 291 Secondary School Curriculum 3 s.h.
  - TED 300 Design and Organization of Curriculum 3 s.h.
  - TED 290 Improving Instruction in the Classroom 3 s.h.

- One of the following courses:
  - TED 280 Supervision of Student Teachers and Auxiliary Personnel 3 s.h.
  - TED 383 Supervision and Evaluation 3 s.h.
  - TED 390 Reading Clinic: Supervision and Evaluation 3 s.h.
  - TED 390 Problems in Supervision 2-3 s.h.

- Thesis (If Relevant): one of the following
  - TED 190 M.A. Thesis in Elementary and Early Childhood Education 3 s.h.
  - TED 185 Master's Degree Thesis 3 s.h.
  - TED 185 Research in Educational Measurement, or Statistics 3 s.h.

Students in consultation with their advisor, may select the remaining hours as elective from among such courses as supervision, language arts, teaching and evaluation, linguistics, or speech pathology.
Students take six hours of comprehensive examinations. One examination is based on reading courses. The other is based on course work in supporting areas. With the agreement of adviser and the student's committee, a comprehensive project may be substituted for the written examination in the supporting areas.

Master of Science

The master of science program in elementary education is open to master’s degree candidates to serve as elementary school specialists. The program may be taken with a thesis (30-semester-hour minimum) or without (22-semester-hour minimum). Admission requirements are the same as those established by the Graduate College. In addition, applicants must have completed an undergraduate program of teacher preparation in elementary education.

The following courses are required of all candidates:

- TE 525 Science Education: Issues, History, and Rationale 3 s.h.
- TE 526 Science Education: The Nature of Science 3 s.h.
- TE 527 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
- TE 528 Advanced Techniques of Teaching Science in the Elementary Classroom 3 s.h.
- Science courses (18 semester hours) are selected by the candidate in consultation with the Chair of the Graduate Committee, from a list of application courses (97 102 Societal and Educational Applications of Earth and Environmental Sciences, 97 103 Societal and Educational Applications of Life Sciences, and 97 105 Societal and Educational Applications of Physical Sciences) are an integral component of the science courses. Candidates who have not taken comparable science courses are expected to take two application courses. At least one corresponding science discipline course as a pre- or corequisite is to be taken with the science courses. These courses, along with the electives (up to 6 semester hours), are determined in consultation with the adviser. All candidates for the Master of Science degree must satisfy the requirements for a basic science endowment, an additional science requirement, and an advanced science requirement.

Doctor of Philosophy

The doctoral program in elementary education prepares students for college and university teaching and research positions in elementary education, and for research, curriculum, supervision, or administrative positions in public school systems and educational agencies. The 2-year program requires a minimum of 90 semester hours, including semester hours earned for the dissertation. Each student prepares an individual plan of study in consultation with an adviser. The final plan must be approved by the adviser and the division chair.

As a general guideline, each student is expected to have a broad and varied educational background in all facets of elementary school education and a very strong background in the specialization in at least one content.

Commonly selected specializations areas are elementary school administration, children's literature, early childhood, curriculum, language arts, mathematics, reading, and social studies.

Each doctoral student will complete a cognate or related field of concentration. The external field may be a professional specialization, such as educational psychology and measurement, special education, or general school administration, or it may be a subject field, such as English.

In addition, all students must demonstrate competence with respect to appropriate research tools, most commonly statistical analysis and data processing.

Assistantships

A number of teaching assistantships are available for graduate students pursuing advanced programs in early childhood and elementary education. Specific assignments vary. Some involve supervising undergraduate majors enrolled in the program, and some involve teaching sections of undergraduate methods courses and supervising student teachers. Most assistantships are classified as one-half-time. This classification means that the student is expected to register for a minimum of 12 semester hours of credit per semester. Graduate students with assistantships must register for a minimum of 6 semester hours per semester.

All assistantships are awarded on a competitive basis. To be considered for an assistantship, applicants must have been advised 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.

Courses

- TE 721 Growth and Motor Development 3 s.h.
- Teaching methods for elementary physical education: includes geriatric motor development. Open only to physical education majors. Open also to other majors. Same as PH 721.
- TE 722 Methods of Elementary School Physical Education 2 s.h.
- Physical education methods and curriculum planning for elementary school physical education. Open only to physical education majors. Open also to other majors. Same as PH 722.
- TE 723 Methods of Elementary Science Education 2 s.h.
- Methods of instruction for pre-service work with children and teachers in elementary school. Enrollment to limited to those majoring in TE 723. Open also to other majors. Same as TE 723.
- TE 724 Administration and Supervision in Elementary Education 2 s.h.

- TE 750 Pre-Education Practicum 1 s.h.
- Students spend one half-credit per week working with children and teachers in a pedagogical setting. Includes supervised practice teaching in the elementary school. Open only to instruction permit to elementary teacher education program. Consent: TE 750.

- TE 752 Pre-Education Practicum, Kindergarten and Early Elementary 1 s.h.
- Students spend full credit per week for eight weeks in kindergarten and early elementary school. Open only to those assigned to assignments in school are made in TE 752. Prerequisite: admission to elementary teacher education program. Consent: TE 752.

- TE 753 Pre-Education Practicum, Elementary and Early Childhood 3 s.h.
- Students spend full credit per week for eight weeks in grades 1 through 4. Open only to those assigned to assignments in school are made in TE 753. Prerequisite: admission to elementary teacher education program. Consent: TE 753.

- TE 754 Pre-Education Practicum, Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 754.

- TE 755 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 755.

- TE 756 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 756.

- TE 757 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 757.

- TE 758 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 758.

- TE 759 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 759.

- TE 760 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 760.

- TE 761 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 761.

- TE 762 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 762.

- TE 763 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 763.

- TE 764 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 764.

- TE 765 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 765.

- TE 766 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 766.

- TE 767 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 767.

- TE 768 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 768.

- TE 769 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 769.

- TE 770 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 770.

- TE 771 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 771.

- TE 772 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 772.

- TE 773 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 773.

- TE 774 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 774.

- TE 775 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 775.

- TE 776 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 776.

- TE 777 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 777.

- TE 778 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 778.

- TE 779 Pre-Education Practicum, Early Childhood Education 3 s.h.
- Prerequisite: admission to elementary education. Consent: TE 779.
TLE204 Curriculum Development in Basic Education 2 s.h.
Curriculum development, instructional materials, analysis of current teaching methods, and techniques in school curriculum design.

TLE207 Public School Curriculum in Physical Education 2 s.h.
Treatment of major physical, sociological, and biological factors as they relate to physical education, emphasis on current methods, equipment, and course projects required. Same as TLE209.

TLE208 Teaching the Low Achiever in Mathematics 3 s.h.
Strategies for improving attitude and mathematical proficiency of low achievers in mathematics.

TLE210 Supervision of Physical Education 3 s.h.
Theories of group control and individual supervision, with graduate students in the field of administration and supervision; major topics include program supervision and evaluation, procedures for supervision and evaluation of teachers, and analysis of teaching methodologies. Same as SY 417D, SY 524.

TLE211 Supervision and Curriculum Development in Art Education 3 s.h.
Procedures and responsibilities in art supervisor, including curriculum, training, placement, guidance, supervision, training and reporting, levels of teaching, influence and evaluation of the art program, and the development of program evaluation, supervision, and evaluation. Same as TLE209.

Critical analysis of research reports, philosophical disarmament, systemic studies, and issues stemming from characterization, study of educational science education. Offered fall semester. Same as J 5125.

TLE216 School Libraries: The Nature of School 3 s.h.
Topics in psychology, philosophy, science, history, and sociology of the school system. Emphasis on research, practice, and current issues in science education. Offered spring semester. Same as J 5125.

TLE217 School Libraries in Teaching, Learning, and Curriculum Development 3 s.h.
Teaching strategies, interpersonal needs, and curriculum development. Emphasis on the school system in the areas of research, practice, and bibliographic instruction. Offered fall and spring semesters.

TLE218 School Libraries Research Monographs and Conceptual Schemes 3 s.h.
Research in research design and major research areas in academic libraries. Emphasis on research design and stay current in research education research. Offered spring semester. Same as J 5126.

TLE219 Supervision of Elementary School Language Arts 3 s.h.
Curricular models, curriculum development, methodology and materials for reading and language arts. Focus on the theoretical and philosophical basis underlying the reading program in elementary schools. Same as E 540.

TLE220 Supervision of Elementary School Social Studies 3 s.h.
Curricular content used for coordination of students' learning, instructional improvement, course problem assignments, provision for individual differences and functional development.

TLE221 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.
Theories of teaching science of the elementary school level, emphasis on processes that parallel implementation of modern philosophies characterizing elementary school science education, emphasis on the experimental elementary teachers progressing toward graduate degrees.

TLE222 Supervision of Secondary School Mathematics 2 s.h.
History of mathematics education in the United States, learning theory applied to teaching and learning environment of broad reading of research, general research, results in curriculum design, recent trend.

TLE244 Building Foundation for Reading: Phonetics and Primary 3 s.h.
Understanding of early reading experiences, intimate basis of reading to other academic areas, knowledge of reading in context of other academic areas, individual differences in reading, current research in measurement considerations, interpretation of home and school interviews, identification of current and seminal issues and relevant research.

TLE245 Supervison of Intermediate Grades 3 s.h.
Procedures for improving instruction and mathematical proficiency of the low achiever in grade school.

TLE246 Curriculum Development in the Kindergarten and Early Primary 3 s.h.
Current and current practices in administration and organization of curriculum and methods of teaching to promote learning, assertive and practical.

TLE249 Curriculum Development Early Education 3 s.h.
Issues in curriculum development including grade level organizations, sequences, approaches, and environment for young children in group settings. Instructional planning for drills, group social skills, and the expressive arts. Offered spring semester. Same as TLE250.

TLE271 Advanced Reading Skills: Techniques and Strategies 3 s.h.
Specialized instructional procedures for children with lower learning abilities in remedial areas of reading disabilities, educational programs for severely disabled readers.

TLE272 Advanced Reading Skills: Practice 3 s.h.
Principles in selecting and using specialized instructional programs, using trial teaching techniques into a special reading emphasis.

TLE280 Supervision of Student Teachers and Laboratory Practicum 2 s.h.
Analysis of the techniques and strategies for supervising student teachers. Emphasis on techniques for selecting student teachers, professional, and professional and social development.

TLE285 Individual Instruction I Early Childhood and Elementary Education 3 s.h.
Prerequisite: consent of instructor.

TLE286 Design and Organization of Elementary Schools 3 s.h.
Major issues, modern selection, sequential arrangement, and incorporation of content, relationship of time allocation to implementation, evaluation of instructional programs, appraisal, present and participation in organizational restructuring of instruction.

TLE287 Advanced Reading Skills: Practice 3 s.h.
Principles in selecting and using specialized instructional programs, using trial teaching techniques into a special reading emphasis.

TLE300 Behavior of Student Teachers and Laboratory Practicum 2 s.h.
Evaluation of the techniques and strategies for supervising student teachers. Emphasis on techniques for selecting student teachers, professional, and professional and social development.

TLE301 Advanced Reading Skills: Techniques and Strategies 3 s.h.
Specialized instructional procedures for children with lower learning abilities in remedial areas of reading disabilities, educational programs for severely disabled readers.

TLE302 Advanced Reading Skills: Practice 3 s.h.
Principles in selecting and using specialized instructional programs, using trial teaching techniques into a special reading emphasis.

TLE303 Individual Instruction I Early Childhood and Elementary Education 3 s.h.
Prerequisite: consent of instructor.

TLE304 Seminar Elementary Education 3 s.h.
Consideration of major problems, research findings, and current developments in elementary school curriculum development.

TLE306 Introduction to Research in Art Education 3 s.h.
Methods of inquiry and research in art education and related disciplines, methods of research design. Same as TLE300.

TLE307 Seminar: Research and Current Issues 3 s.h.
For a specific curriculum area. Involve the literature, critical analysis of research report, study of current research, and the development of theses. Emphasis on the literature of current research. Title varies with specific area offered. May be repeated. Prerequisite: consent of instructor.

TLE308 Reading Clinic: Supervision 3 s.h.
Supervised experience in reading guidance and teaching techniques of instructional programs. Prerequisite: consent of instructor.

TLE309 Administering and Supervising K-12 3 s.h.
Supervision Programs 3 s.h.
Theory and practice in controlling K-12 school programs, supervision in group and individual schools, and leadership, and means of preparing two practicum projects required. Offered spring semester and study seminar. Same as TLE419.

TLE310 Laboratory Practice in Supervision 3 s.h.
Individualized practical experience in a variety of supervision settings. Prerequisite: consent of instructor.

TLE315 Practicum in College Teaching 3 s.h.
Prerequisite: consent of instructor.

TLE358 Research Project 3 s.h.
Individualized research project in a specific curriculum area for advanced students. May be repeated. Prerequisite: consent of instructor.

TLE360 Field Service Project 3 s.h.
Individual field service project in a specific curriculum area for advanced students. May be repeated. Prerequisite: consent of instructor.

TLE377 M.A. Thesis in Early Childhood and Elementary Education 3 s.h.
Prerequisite: consent of instructor.

TLE379 Ph.D. Thesis in Early Childhood and Elementary Education 3 s.h.
Prerequisite: consent of instructor.

EDUCATIONAL ADMINISTRATION
Chairmen: George A. Chambers, Walter J. Fisher
Frederic H. Jones, William R. Lewis, John J. McComb
Graduate assistant: Dennis O. Andrews, Barry D. Bartlett
Graduate assistant: Edward E. Sprague

Degrees offered: M.A., M.S., Ph.D.

The Division of Educational Administration prepares students for leadership positions and offers programs leading to the M.A., M.S., Ph.D., and to administrative certification.

The Division of Educational Administration offers its programs jointly with other divisions in the College of Education and with other colleges in the University.

Certification
To be eligible for recommendation to The University of Iowa for certification in Iowa as an elementary principal, secondary principal, or superintendent, students must complete an approved program. The specific requirements for each program are available through the division office and the College of Education Office of Student Services.

Students who hold an M.A. degree must satisfy all core requirements and must complete at The University of Iowa the minimum semester-hour program for the certification level they seek. An administrative certification program at a level different from that characterizing the students' prior preparation and experience must be planned with an advisor. Because of the specific requirements for each administrative certification, candidates are required to plan their program with their advisor's approval.
Graduate Programs

M.A. in Educational Administration

The primary purpose of the M.A. program is to prepare individuals for appointments as elementary or secondary school principals, 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 Entrance Exam (GRE) General Test scores, and other evidence of academic ability and professional promise.

Course Requirements

With the aid of an adviser, the student prepares a plan of study including the following core requirements:

- TD-201 Foundations of School Administration
- TD-203 Computer Applications in Education
- TD-236 Administration of Students with Special Needs
- TD-242 Principalship
- TD-248 Legal Aspects of School Personnel
- TD-383 Supervision and Evaluation
- TD-390 Design and Organization of Curriculum

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 adviser to satisfy the following degree requirements.

Elementary Level

Required
- TD-258 Contemporary Management Strategies for the Elementary Principal
- TD-491 Field Service Project in Elementary Administration

Electives
- Electives are selected with approval of the adviser.

Secondary Level

Required
- TD-250 Contemporary Management Strategies for the Secondary Principal
- TD-493 Field Service Project in Secondary Administration

Electives
- Electives are selected with approval of the adviser.

Ed.S. in Educational Administration

The Ed.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 seeking certification plan a program approved by an adviser 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.

Course Requirements

- TD-210 Administration of Educational Programs and Personnel
- TD-258 Policies and Economics of the Governance and Financing of Public Education
- TD-297 Administrative Leadership Theory
- TD-248 Legal Aspects of School Administration
- TD-350 Educational Specialist Research in Educational Administration

Program Emphasis

Students must complete the balance of their minimum required semester hours (minimum cognates and electives) in one of the following areas: emphasis courses specifically listed in each area or specialization are required courses.

Elementary School Administration
- TP-142 Introduction to Educational Measurement
- TP-205 School Organization Patterns
- TD-248 Seminar: Supervision and Administration
- TC-270 Issues and Ethics in Counseling

Secondary School Administration
- TP-142 Introduction to Educational Measurement
- TD-205 Improving Instruction in the Secondary School
- TC-270 Issues and Ethics in Counseling

General School Administration
- TD-205 Collective Bargaining in Education
- TD-205 Financial Management of Local School Systems
- TD-270 Educational Administration Practicum

Electives

Students choose electives completing the 24-semester-hour requirement for the Ed.S. degree. They may choose electives for specialization in fields such as staff personnel, business affairs, instruction, theory, legal aspects, curriculum, and information systems.

Research

All candidates for the Ed.S. degree must complete a formal research paper (4-semester-hour credit) that deals with a specific problem in school administration or instruction.

Comprehensive Examination

The comprehensive examination for the Ed.S. degree comprises one three-hour examination in educational administration and one three-hour examination in a specialized area in either educational administration or a related or cognate field. Students must be registered in the Graduate College during the semester in which they take the comprehensive examination if they plan on graduating that semester.
Ed.S. in Special Education Administration

The Education Specialist in Special Education Administration program is offered jointly with the Division of Special Education.

The primary objective of the program is to provide sufficient training and experience to enable graduates to obtain entry-level positions in administration. The career focus of the program is on middle management positions such as supervisor and assistant administrator. Successful completion of the program qualifies the student for certification in special education administration.

The program requires a minimum of 66 semester hours of credit. Admission to the program is limited to those who have been admitted to the graduate school. 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 ten students in the fall semester or the preceding summer session. Factors considered include the candidate's ability to perform at the desired level of scholarship and for academic success, grades, and GMAT score.

Core Courses

Core courses are designed to provide the necessary background for the student's study, including research in specialized areas, and to develop competencies common to the functional areas of special education administration. The core course requirements are designed to develop planning educational personnel programs, analysis of the political and economic influences on the planning of educational programs, evaluation of administrative leadership, leadership theories, and organizational research methodology and quantitative analysis.

Seminar

Seminar designed primarily for doctoral candidates is offered to supplement each student's core area. Seminar also provides an opportunity to work in small groups.

Cognates

Students specializing in administration must complete a 9-hour seminar outside the College of Education with the advisor's approval.

Comprehensive Examinations

Doctoral students must satisfactorily complete an extensive written examination in the functional area of special education administration. The examination is designed to test the student's knowledge of the content and competencies common to the student's area of specialization and approved by the student's advisor. The examination is administered by the department. Students must complete the comprehensive examination and must be registered for the research requirement to take the comprehensive examination. Students must be registered in the Graduate College at the time of the examination. No P.D. comprehensive examinations are held during summer session.

Students pursuing doctoral programs in areas other than specialization who want to use some aspect of the educational administration program as a core area of concentration for which they need a comprehensive examination should consult with their advisor in the Division of Educational Administration early in their sequence of study.

Any of the areas of specialization open to doctoral students in educational administration are open to other doctoral students who meet the necessary registration prerequisites for specific courses. Students should complete approximately 12 semester hours in one area of specialization before 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 15 semester hours of directed coursework in educational administration.

Research Dissertation

Prospectus

All students must write a formal dissertation prospectus and submit it for approval before their first and then every other semester. The dissertation prospectus is written in consultation with the student's advisor. This is a final report and must be submitted to the director of the prospectus committee meeting. Dissertation prospectus meetings are not held during summer session.

Completion and Final Examination

Students must accumulate a minimum of 96 semester hours of directed coursework. Students usually register for the same examination within the same examination, which must be completed in two academic years. Students must be registered at The University of Iowa in the semester in which they graduate.

Residency

Each candidate must successfully complete the remaining credit hours for the degree. Students must register for the same examination within the same examination, which must be completed in two academic years. Students must be registered at The University of Iowa in the semester in which they graduate.

Required Core

48 s.h.
Undergraduate 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, licensure, or registry appropriate to the area of health occupations education in which they wish to teach, e.g., dental assisting, medical office assisting, or respiratory therapy. The health occupations education major is planned on this basis and includes work in professional education and liberal studies appropriate to teachers who want to earn a baccalaureate degree.

Applicants to this program must satisfy criteria for admission to the teacher education program (TEP) of the College of Education.

Program requirements are as follows.

Professional Education Component

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>T715 Educational Psychology and Measurement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>T919 Instructional Equipment for Instruction</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>T912 Introduction to Multicultural Teachers</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>T717 Teaching of Adults</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>T717 Foundations of Vocational Education</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>T71911 Teaching Health Occupations Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>T71913 Foundations of College Teaching</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>T71914 Teaching Internship</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>T91190 Professional Development</td>
<td>2.5 s.h.</td>
</tr>
</tbody>
</table>

Additional specialty coursework in health occupations education 10 s.h.

Course work in the health occupations education specialty and supporting field should be planned carefully in consultation with the advisor.

Students may take workshops or courses offered by specific health colleges or choose electives such as development of official aids or computers in education, in keeping with their educational goals.

Master of Arts without Thesis

The purpose of the M.A. program in higher education is to prepare individuals for entry and middle level administrative, curriculum and instruction, or continuing education positions in two- and four-year institutions. It is appropriate for positions such as assistant dean, assistant to the president, director, in-service director, and division 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. Transcripts, the GRE scores, and three letters of recommendation are required for consideration for regular admission. An interview is recommended.

Deadlines for receipt of the application for admission, transcripts, GRE General Test scores, three letters of recommendation, and a statement of educational goals are July 15 for fall semester admission, December 1 for spring semester admission, and May 1 for summer session admission.

Requirements

The M.A. program requires a minimum of 32 semester hours. Students take two three-hour examinations, one in higher education and one covering the area of concentration and specialization.

Areas of concentration in which examinations may be written are administration, curriculum and instruction, and continuing education. Areas for related field examinations are the same. Students majoring in another field who want to complete a related field in higher education and be eligible to write a related field examination should consult with a higher education advisor early in their studies.

Place 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, curriculum and instruction, and continuing education and, with the proper advisor, preparation for doctoral study in education. The specialist degree also may be awarded upon completion of a joint program that consists of a minimum of 40 semester hours of graduate work in higher education and an academic field, or upon completion of a higher education sequence following a master’s degree program.

Admission

Applicants for admission must satisfy the general requirements for admission to the Graduate College. Candidates are selected on the basis of grade-point average, GRE General Test scores, and promise for professional growth. Transcripts, GRE scores, and three letters of recommendation are required for regular admission. An interview is recommended.

Deadlines for receipt of the application for admission, transcripts, GRE General Test scores, three letters of recommendation, and a statement of educational goals are July 15 for fall semester admission, December 1 for spring semester admission, and May 1 for summer session admission.

Majors in Higher Education

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 four areas: administration, curriculum and instruction, community college administration, and continuing education;

At least 26 semester hours in the area of specialization, to be determined in consultation with the advisor;

Ten semester hours of electives, to be approved by the advisor;

Research conducted under registration in 73195 Educational 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, perhaps reflecting an area of specialization within the concentration, followed by an oral examination.

Major in Higher Education with Emphasis in College Teaching

Students may earn a major in higher education with emphasis in college teaching must take the following courses:

At least 18 semester hours in professional education and related fields appropriate for college teaching, including a structured internship:

73770 Intern Seminar 1 s.h.

73770 College Teaching Internship 1.5 s.h.

73771 Post-High School Staff Development Workshop 1 s.h.

7395 Auditory Equipment for Teachers 1 s.h.

73111 Educational Psychology 3 s.h.

At least 26 semester hours in the area of teaching specialization, 10 semester hours of electives to be approved by the candidate and the advisor, and research conducted under registration in 73195 Educational Specialist Research in Higher Education for 4 semester hours.

Students must take a comprehensive examination in two parts.

An examination of the nature of postsecondary institutions and student characteristics, the professional responsibilities of a faculty member, and the candidate’s ability to organize the subject matter into select appropriate teaching strategies;

And an examination in the candidate’s teaching field, written and administered by the faculty in that field, and followed by oral examination.
Admission
Applicants for admission to the doctoral program must satisfy the requirements of the Graduate College. Candidates will be selected on the basis of grade-point average, GRE General Test scores, and potential for professional growth. Transcript, the GRE General Test scores, three letters of recommendation, and a statement of educational goals are required for regular admission. Interviews are recommended and may be required. Deadlines for receipt of the application for admission, transcripts, GRE General Test scores, three letters of recommendation, and a statement of educational goals are July 15 for fall semester admission, December 1 for spring semester admission, and May 1 for summer session admission.

Iowa Community College Certification
To qualify for a professional certificate with authorization to teach in an arts and sciences field of an area community college in Iowa, students must hold a master's degree granted by an approved institution, with specialization in a field of instruction offered in the area and sciences division of an area college. Preparation must include 6 semester hours of professional preparation appropriate for college teaching and 3 semester hours of 12-171 Human Relations for the Classroom Teacher.

The following courses fulfill the requirements:

TH 171 The Community College 2.5 s.h.
TH 192 Curriculum Development in Community College Health Careers 3 s.h.
TH 170 Intersession Seminar 3 s.h.
TH 175 Post-High School Staff Development Workshop 1-2 s.h.
TH 112 Teaching of Adults 3 s.h.
TH 190 College Teaching Internship 3 s.h.

In addition, applicants for certification must have completed an approved human relations course for 3 semester hours of credit.

A master's degree in the student's teaching area is required for certification in arts and science areas.

Facilities
A resources and documentation collection relating to community colleges is available for students doing research or seeking employment information.

Courses
Social Foundations and Comparative Education

7227 Analysis for Decision Making

Thesis problems and papers in modern social research, policy analysis and decision science, application to social, economic, and educational policy issues. 3 s.h.

7228 Education, Politics, and Culture of Relational Societal Acts 3 s.h.

Different approaches to educational development being pursued in the region from social matrices to community traditions in Nordic, Nordic traditions and culture, social change and educational reform efforts occurring in a cultural policy context.

7229 Education in the Third World 2 s.h.

Educational implications of modern social changes, including the role of the media and non-governmental organizations in the development of educational reform efforts occurring in cultural policy contexts.

7230 History of Western Education 2 s.h.

Philosophical and historical traditions in the history of education and the relationship of first world and third world educational and contemporary educational policies in the United States.

7231 Philosophy of Education 2 s.h.

Introduction to the principal philosophical and historical traditions in the history of education and the relationship of first world and third world educational and contemporary educational policies in the United States.

7232 Introduction to the Politics of Education 2 s.h.

Introduction to the political setting of education at all levels—local, state, and federal—and the historical and political consequences of factors that condition internal school and district politics.

7233 Educational Sociology 2 s.h.

Marxist-Leninist perspectives of the role of education in socialist society, change in the role of education in social stratification, social mobility, and economic achievement at the national and state levels; and cultural aspects of education.

7234 John Dewey and Education 2 s.h.

Exploration of the philosophy and educational work of John Dewey, emphasis on his theories of knowledge, education, and democracy, applied to educational theory and practice.

7235 Education of Immigrants and Refugees 2 s.h.

Study of educational issues of refugees and immigrants to the United States. Focus on the process of cultural assimilation, language attitudes, attitudes toward academic education, and the role of other factors, including race, ethnicity.

7236 Education, Race, and Ethnicity 2 s.h.

The nature and significance of recent trends in the education of African American, Latino, and Asian American groups in the United States and worldwide. The relationship of education to Black, Latino, and Asian American experiences, reflections, and contributions to contemporary social and economic issues.

7237 Survey Research and Design 3 s.h.

Design, execution, and analysis of research projects. Focus on such topics as advanced statistical techniques, sample design, and survey design.

7238 U.S. Educational System and Society 3 s.h.

Structure and characteristics of the U.S. educational system as an institution of social change, primarily for students interested in the superstructure and social background of the development of formal education at the national level.

7239 Research Process and Design 3 s.h.

Introduction to research processes, with emphasis on the development of critical thinking and research skills. Analysis of selected recent research in the field, students will research a proposal. Same as STAT 2970.

7241 Educational and Social Change 2 s.h.

Policies for the development of educational institutions, in connection with political and economic structures, in the process of social change. Demonstration of factors of social change through case studies of educational systems in both developing and developed nations.

7242 Sociology: Theory and Practice of Learning 2 s.h.

Theory-based literature and criticisms of societal problems presented in various social systems such as biology, sociology, politics, philosophy, and psychology.

Degree Programs

Master of Arts

Educational Psychology

This program provides an overview of educational psychology as 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 entry into a specific vocation. Rather, it contributes to a broad understanding of the psychological principles on which education builds.

Program Requirements

Students may take the degree with or without thesis. The degree without thesis requires a minimum of 32 semester hours of course work; with thesis, it requires a minimum of 28 semester hours of course work plus 2-4 semester hours of thesis credit. Both programs require TP-143 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, choosing courses from the following four areas: human development, cognitive/learning, motivation, and socialization/personality. Students must take at least one course in each of these areas. The faculty encourages devotee candidates to enroll in at least two courses outside the division.

The program culminates in six hours of comprehensive examinations consisting of either three two-hour or two three-hour exams. The three-hour exams each calls for a minimum of 2 courses in each area tested. The two-hour exams each call for a minimum of two courses in each area tested. The comprehensive exam is planned jointly by the student and the advisor and must be approved by the M.A. committee.

Admissions Requirements

Admissions requirements are the same as those established by the Graduate College. Teaching experience is desirable but not required. The faculty reviews applications as they are received.

Educational Measurement and Statistics

A Master of Arts degree in this field prepares students for positions that require a basic knowledge of educational testing, program evaluation, and data analysis. Such positions occur in research centers, testing organizations, large school systems, and state education agencies. The program is also appropriate for students who seek to broaden their knowledge of measurement and research methodology for personal development.

Program Requirements

The degree may be taken without thesis (minimum of 28 semester hours of course work plus 2-4 semester hours of thesis credit). Admission to the program involves the completion of 32 semester hours. Admitted students are required to write a master's thesis. The thesis is a significant academic work and includes a comprehensive review of the literature, a methodology section, presentation of results, and a discussion of implications.

The plan of study includes the completion of courses in educational measurement and statistics, educational research methodology, and a seminar in educational research methodology. In addition, the student must complete at least one more course in the area of specialization.

The six-hour course requirement typically includes three-hour examinations in educational measurement and in applied statistics. The approval of the M.A. committee, the student may take two examinations in three fields or three two-hour examinations in educational psychology or a combination of other areas. Three-hour examinations must be taken in three courses in the two two-hour examinations must be taken in two courses in the area.

Admissions Requirements

Graduate-credit average requirements for admission to the program are the same as those established by the Graduate College. Applicants who score for the quantitative, verbal, or analytical section of the Graduate Record Examination (GRE) General Test that are above 300 typically are not admitted. However, if the student does not speak English as the native language and there is evidence of equivalency, the faculty may adjust the GRE admissions requirement. Applicants should have at least one course in college mathematics. Some work experience as a teacher or researcher is highly desirable. The faculty reviews applications as they are received.

Reading Disability

This program prepares graduate students for positions as reading specialists in kindergarten and grades 1-12. The course work required develops the knowledge, and competencies needed for supervision, curricular, and remedial teaching positions in reading. The program also builds on comprehensive training for students who seek further specialization in the area and want to teach reading to prepare for research at the college or university level.
Admission Requirements

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 competing two years of a successful teaching experience.

Degree Program Requirements

The degree requires a minimum of 33 semester hours of graduate credit, at least 21 of which must be earned in residence at the University of Nebraska-Lincoln. Students admitted conditionally must complete the prescribed requirements. Course work and the thesis must be completed within six years from the date of admission.

Course Work

Course work is completed through the Department of Instructional Design and Technology. The major consists of 21 semester hours of course work, with 15 semester hours in instructional design and technology and 6 semester hours in related areas.

Instructional Design and Technology

The Master of Arts in instructional design and technology provides students with the basic knowledge and skills to work in educational and training environments such as schools, business and industry, health care, government, and consulting agencies. The program consists of 33 semester hours of course work and may be completed with either a thesis or a project.

Admissions Requirements

Regular admission requires a minimum grade-point average of 3.00 on all previous course work and a score of 500 or higher on 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 required to have 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 fall admission should be received by June 1; for spring admission, by October 15, for summer admission, by March 15. Admissions decisions are announced approximately one month after the application deadlines.

Program Requirements

The degree requires the following core courses (or approved equivalents):

TP 730 Introduction to Instructional Design and Technology
TP 710 Selective Use of Media for Instruction
TP 710 Design and Production of Media for Instruction
TP 710 Psychological Bases of Instructional Design
TP 715 Introduction to Educational Measurement
TP 720 Advanced Instructional Design and Technology
TP 722 Instructional Strategies

Students planning to do research for their thesis or dissertation should complete at least 2 hours of course work in a cognate area outside the College of Education. Students who have not had previous experience in designing instruction or training must complete a practicum in the area. The final project or thesis is required. If the project is to be completed as a practicum, it must be approved by the student's committee. The final project or thesis is required.

The program culminates with a six-hour block of comprehensive examinations based on core and cognate-area courses. The examinations are divided into two- or three-hour sets as follows: general instruction design, 3.5 hours; area of emphasis, 2.5 hours; other, 0.5 hours.

Educational Specialist in Instructional Design and Technology

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. is usually considered a first degree.

Admissions Requirements

Regular admission requires a minimum grade-point average of at least 3.00 on all previous course work and a score of 500 or higher on 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 required to have 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 fall admission should be received by June 1; for spring admission, by October 15, for summer admission, by March 15. Admissions decisions are announced approximately one month after the application deadlines.

Program Requirements

Course work required for the degree includes the master's level core courses (or equivalent), three research methods courses (TP 710 Introduction to Statistical Methods, TP 720 Educational Research Methodology, TP 720 Survey of Research in Instructional Design and Technology, or equivalents), and 15 semester hours of study in one area: classroom instruction, computer applications, instructional development, health sciences education, training evaluation, or media production or school media. In addition, the student must complete a semester of course work in a cognate area outside the College of Education. Students who have not had previous experience in designing instruction or training must complete a practicum.
The program culminates with the completion of a final project and a six-hour act of comprehensive examinations based on courses in the core, research, and emphasis areas. The examinations are divided into two or three parts as follows: general instructional design, 2 hours; area of emphasis, 2-3 hours; other, 0-2 hours.

Doctor of Philosophy

Educational Psychology

This doctoral program prepares specialists for a variety of careers that share a concern for the application of psychological principles to educational practices. Such careers include psychologists at the university and college level and research or administrative positions in educational agencies, school systems, hospitals, testing organizations, and public schools. A concentration in the area of reading disabilities prepares students for careers as reading consultants, directors of reading clinics, and professors who train diagnostic and prescriptive reading specialists.

Program Requirements

The program requires a minimum of 72 semester hours beyond the bachelor's degree and encompasses three substantive areas—human development, cognitive/learning, and motivation/socialization/personality. Students must take a minimum of 12 semester hours of courses numbered 200 or above, at least five of which should be in one of these areas in each year. In addition, students must show a substantial commitment to graduate work in at least one of these areas. A passing demonstration of competence requires the successful completion of a three-hour comprehensive exam on no fewer than six semester hours at the 200 level.

Additional requirements include the following: TP-210 Research Methodology: a minimum of 6 semester hours of courses in the three-hour comprehensive exam to be submitted in the individual psychology. Students are encouraged to take courses outside the College of Education in their area of interest. A Ph.D. degree without the M.S. degree without the M.A. degree without a Ph.D. must undertake a project in lieu of the thesis. This project must be approved by three members of the educational psychology faculty. The candidate's program is reviewed yearly by the student and the advisor. The record of each student admitted to the program is reviewed near the end of the second year of residence. The division faculty considers courses given evidence of critical and analytical skills development during the year, and provides for continued growth. Students who show insufficient potential or deficiencies that cannot be remedied are dropped from the program.

After candidates have completed the major portion of the course work, they must write comprehensive examinations. Six of the six hours of comprehensive examinations must be based on course work in educational psychology offered by the division or in closely related course work offered by other University departments. A comprehensive examination must be taken outside the area of emphasis with the advisor. The proposed examination schedule must be approved by the comprehensive examination committee.

Admissions Requirements

Applicants 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. Completion of the M.A. program must occur before the student can take Ph.D. comprehensive exams. The graduate grade-point average for admission is the same as that established by the Graduate College. Applications whose scores on the verbal and quantitative sections of the Graduate Record Examination (GRE) General Test exceed the 750th percentile are not accepted. However, candidates must be admitted conditionally on the basis of other evidence, such as high grade-point average, strong academic preparation, and highly supportive recommendations. Applications are reviewed as received.

Counseling Psychology

The doctoral program in counseling psychology was granted full approval by the American Psychological Association in 1982. No master's degree is offered in counseling psychology.

The program's prime goal is to train students in the provision of a wide range of psychological services, including counseling and psychopharmacology, and in the conduct of research on and the solution of psychological problems. To achieve this goal, the curriculum integrates psychological theory, research training, and professional practice. The faculty strives to train psychologists who will promote psychology as a science and contribute to the advancement of the profession through sound research and excellent practice.

Since the profession of psychology is constantly changing to meet human needs, faculty and students represent a variety of backgrounds and interests. The program encourages innovative approaches to psychological services and provides training in traditional counseling approaches. Upon graduation, students obtain positions as university faculty, professional staff in counseling and medical centers, and psychologists in private practice, business settings, and public health service units.

Admissions Requirements

The Ph.D. gives preference to applicants who have completed a minor or major in psychology or related psychology courses. Applicants must submit the following: the Graduate Record Examination (GRE) General Test scores, transcripts from all colleges attended, and three letters of recommendation. Admissions decisions are made around March 15. Typically, six to eight students are admitted to the program each year.

Educational Measurement and/or Statistics

This doctoral program prepares students for senior professional positions in the fields of educational measurement, program evaluation, and statistical methods. Such positions generally occur in colleges and universities, state departments of education, large public and private school systems, testing agencies, and research centers.

Program Requirements

In addition to the substantive courses in educational measurement and/or statistics offered by the division, all students must complete the following three core courses:

TP-130 Educational Psychology 3 s.h.
TP-220 Educational Research Methodology 3 s.h.
TC-254 Statistical Assessment 3 s.h.

The student's advisor specifies additional coursework in areas appropriate to the student's interests and vocational objectives. The coursework may include additional work in educational psychology and/or educational measurement and/or Education division and University divisions.

Students who concentrate in the area of statistics with the intention of teaching on the college level are required to take courses in the mathematical theory of statistics. Those who concentrate in the area of educational measurement and evaluation are advised to take courses in curriculum, counseling, and higher education. All students must develop familiarity with computer-processing techniques and processing equipment.

Candidates who enroll in the program without completing an M.A. thesis must complete a substitute project approved by three members of the division faculty. The project must be completed before the Ph.D. comprehensive examinations may be withheld. A minimum of 90 semester hours is required for the degree, including 12 or more semester hours of thesis credit.
The record of every student admitted to the program is reviewed after completion of approximately 18 semester hours of course work. The faculty considers course grades, evidence of clinical and analytical skills, development since admission to the program, and promise for continued growth. Students who show insufficient progress or whose progress cannot be remedied are dropped from the program.

Final evaluation of the major portion of their course work, candidates must write comprehensive examinations. Typically, these consist of three three-hour written examinations over the courses in statistics, educational measurement, and educational psychology or an approved substitute area. A substitute area is generally one in which the student is not required. At least 6 semester hours of course work will be covered by one examination in which 50 questions may be asked. Evidence of readiness for the examination will be based on the course work and the results of a comprehensive examination. Admissions Requirements

Applicants for admission to the program must hold a M.A. degree in an area of education equal to an M.S. degree. The average requirement is the same as that for the Graduate College. If an applicant's scores on the verbal, quantitative, or analytical section of the Graduate Record Examination (GRE) General Test are lower than 500, the applicant is required to demonstrate evidence of superior ability, the applicant will be rejected. However, the faculty may admit the GRE standards for students who do not speak English as their native language. Students who expect to concentrate in the area of statistics should have work in college mathematics through the calculus level and integral calculus. The absence of such background may preclude their admission up to the first year of residence. At the end of the first semester and the second semester of the program in educational psychology, teaching, research, or a related field is highly desirable. The faculty reviews applications as they are received.

Educational Psychology with Concentration in Reading Research

This doctoral program prepares graduates for careers as college teachers, as directors of reading clinics, and as supervisors of remedial reading programs in larger school systems.

Program Requirements

The course requirements are essentially the same as those for the doctoral program in educational psychology. The elective courses, however, include those pertinent to the area of research and reading. The courses offered by the division of special education, early childhood and elementary education, and secondary education, and the departments of educational psychology and educational psychology, linguistic, and educational psychology. One of the comprehensive examinations must be in the area of reading and learning.

Admissions Requirements

The admissions requirements are the same as those for the Ph.D. program in educational psychology.

Instructional Design and Technology

The Ph.D. program in instructional design and technology provides a broad background for persons interested in teaching, research, and leadership positions. The two-hour program emphasizes the acquisition of knowledge and skills needed to expand the understanding of instructional and learning and their effects on learning and performance.

Admissions Requirements

Introduction to the program is competitive. Basic requirements are a grade-point average above 3.00 on previous course work and a score of 500 or higher on the quantitative and verbal sections of the Graduate Record Examination-General Test. Other factors considered are the nature of previous course work and experience, language proficiency, and letters of recommendation. The candidate must include a personal letter and a list of former achievements, including any special skills, interests, and employment. Potential students are strongly encouraged to discuss their plans with a faculty member. Applications for fall admission must be received by June 1; for spring admission, by October 1; for summer admission, by March 15. Admissions decisions are announced approximately one month after the application deadlines.

Program Requirements

Course work required for the degree includes the core M.A. program or examinations, five semester-credit hours in research courses (including three in the area of research), and 12 semester-credit hours in one specialized area: instructional development, computer applications, health sciences education, or training and development. In addition, students must complete 9 semester hours of course work in a cognate area outside the College of Education.

Near the end of the course work requirements, students must submit a formal paper that reflects their ability to organize and present a topic. The conceptual level expected for the dissertation. The completed paper must be approved by a faculty committee before the comprehensive examination may be taken. All students must successfully pass a nine-hour set of comprehensive examinations that include the core, research, and specialized courses as follows: general instructional design, 3.5 hours; area of specialization, 3.5 hours; other, 2.0 hours.

The program culminates with the successful completion and defense of a dissertation.

Financial Aid

The division normally employs several advanced graduate students as teaching, research, and guidance assistants. The appointments are typically half-time for the academic year, and fellows are permitted to carry a course load and research load of up to 12 semester hours per semester. Candidates should address inquiries to the chair of the division.

Other types of graduate assistantships are supported by the Iowa Training Programs. Funds are varied, including research opportunities such as test development, test norming, and data analysis. There are also a few assistantships supported by the Iowa Testing Programs that are not specific to the programs cited above. Inquiries should be directed to the program directors.

Courses

Educational Psychology, Measurement, and Statistics

Psychological tests for predicting success; the major statistical techniques; research design and measurement; algorithms and logics; algebra and number theory; statistical, psychological, and social processes. Ph.D. courses available. Prerequisite: PSY 1060. Spring 10:30.

Educational Psychology and Measurement

Principles of cognitive and social development, learning, memory, problem solving, attention, motivation, and emotional management from infancy to maturity.

Psychology of Academic Learning

Theories of teaching and learning, the effects of physical and psychological conditions, and the role of motivation in learning. An introduction to methods of instruction, including classroom teaching and problem-solving techniques. Prerequisite: PSY 1040. Fall 10:30.

Psychotherapy: Theory and Practice

An overview of psychotherapy as a field, the evolution of therapeutic practice, the role of the therapeutic relationship, and the treatment of different problems. An introduction to psychological treatment. Prerequisite: PSY 1040. Fall 10:30.

Developmental Psychology

Psychological development of infants and preschool children. A discussion of research methods and findings relating to learning and development. Prerequisite: PSY 1040. Fall 10:30.

Developmental Psychology of Young Children

1.0. An overview of human development and the physical and psychological implications of research findings and relationships between instruction, learning, and performance.

Developmental Psychology of Children

An overview of human development and the psychological implications of research findings and relationships between instruction, learning, and performance.

Developmental psychology and activities involving mental growth of children and adults, role of experiences in development, and effects of experiences on mental growth in virtual and quantitative studies.

Developmental psychology and activities involving mental growth of children and adults, role of experiences in development, and effects of experiences on mental growth in virtual and quantitative studies.

Developmental psychology and activities involving mental growth of children and adults, role of experiences in development, and effects of experiences on mental growth in virtual and quantitative studies.
SECONDARY EDUCATION

Chair: Marilyn J. Zweig
Professor: Robert M. Reath, Dorothy Walley, John E. Brattek, Harold L., Schuler, Douglas D., Bradt, Robert E. Bryer, Merle E. Zweig
Professors: Robert H. Collins, John H. Newton, Caroline L. Ericks, J. W. McNamara, Hugh F. Scaife, Lawrence A. Van Omme
Assistant Professor: John W. Quare, George W. Crowland, Gary F. Braxton, Gregory Roper, David L., Schuler, Richard C. Bible, John T. Wilson, Sara C. Williams
Associate professor: Elizabeth L. Leach
Assistant professor emeritus: Ira M. Baden, Howard Morris
Instructor: Richard F. John
Degree offered: M.A.T., M.A., M.S., Ed.S., Ph.D.

Teacher Certification

Program Requirements

Undergraduate students seeking secondary school certification are degree candidates in the College of Liberal Arts and Manual. Complete the requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies degrees described in the "College of Liberal Arts" section of the Catalog.

Students who have completed the requirements for a Bachelor of Science degree should consult the catalog for the guidelines in the "College of Liberal Arts" section of the Catalog.

Graduate students may be admitted to a program leading to their certification as "certification only" candidates in the College of Education. They are subject to all policies, rules, and regulations of that college. Eligible graduate students must complete teacher certification by pursuing an M.A.T. degree in English education, home economics education, foreign language education, or science education.

Certification requires a major of at least 30 semester hours of course work in a subject area taught in the secondary school.

The following requirements are provided for each major area:

in the Division of Secondary Education, ODES Bldg 12, Custer. Candidates for secondary school teaching certification who have completed an approved program of 12 or more semester hours of course work in those areas.

Secondary school teacher preparation programs are as follows:

Art: Teaching Communication at The Arts

Foreign Languages—Spanish, French, German, Russian, Latin, Chinese, and Japanese

Health education

Home economics

Journalism

Music

Physical education

Science: including general science, physical science, biology, chemistry, physics, and earth science.

Social science, including anthropology, economics, geography, history, political science, psychology, and sociology.

Available in an additional approved area only.

A major in another subject matter area is required for certification.

An Iowa secondary school teacher certification qualifies candidates to teach in grades 7-12. Students planning to teach art, music, or physical education must complete the program prepared their for both elementary and secondary school certification. Beginning in the fall of 1988, secondary teacher preparation programs in several other subject areas will offer a program that leads to certification as a subject major in grades K-6. This K-6 certification will only be issued in the subject area in which the elementary school certification. Mathematics and science education will require the completion of the elementary school certification.

Each teacher certification program at the time this catalog was published, candidates are encouraged to obtain additional professional and the name of an advisor for the Secondary Education office, ODES Bldg 12, Custer. Undergraduate advisor for certification must be a member of the secondary education office in the Secondary Education office, ODES Bldg 12, Custer. Undergraduate advisor for certification must be a member of the secondary education office in the Secondary Education office, ODES Bldg 12, Custer.
Competency in computer-based education (CBE) may be satisfied by taking TW-32 Introduction to Microcomputing for Teachers, by examination, or by completing a CBE course or module in the subject area. 0-1 s.h.

Student teaching 12 s.h.

With their advisor's approval, graduate students may elect equivalent graduate courses in lieu of 75.90-75.99, 75.100, and 75.75. Students must complete the methods courses in their major teaching field prior to student teaching.

For all subject areas, student teaching must be done all day for a full semester. Students in secondary education may do their student teaching at the Center for Urban Teacher Education (CUTE), through the Regents' Exchange Program, or in the customary contractual areas established by the College of Education. An exception to student teaching in the customary contractual area will be considered only if the proposed student teaching site provides the student with a specific program opportunity not available in the contractual area or utilizes special cooperating teacher expertise.

Students may also 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 the various alternatives for student teaching and applications procedures is available from the Office of Student Services, N100 Cobele Center. Applications for student teaching must be filed in the Office of Student Services by March 15 prior to the academic year during which the student teaching will be done.

Admission

Prior to taking required professional education courses, undergraduate students must be admitted to the teacher education program (TEP). The application for admission should be submitted to the College of Education Office of Student Services, N100 Lindquist Center. The deadline for application to the secondary teacher education program is July 1. Applications also may be submitted by November 1 or April 1. Admission of qualified applicants on these dates will be approved if openings in classes become available.

In order to be considered for admission, students must have completed a minimum of 28 semester hours of core course work with a minimum cumulative grade-point average of 2.80. A limited number of applicants are accepted into the Teacher Education Program (TEP), so having a 2.50 grade-point average does not assure admission. Admissions decisions are based on grade-point average in the major and other criteria relevant to teaching success.

If at any time after admission the grade-point average falls below 2.80, students are dropped from the TEP. Students should consult a College of Education advisor in their subject matter field, or the Division of Secondary Education office, N100 Lindquist Center, for additional information on admission criteria. Graduate students may have been admitted to the Graduate College for "certification-only" or to an M.A.T. program; they do not have to apply for admission to the teacher education program. These students to "certification-only" automatically inherit admission to the TEP.

Upon admission to the TEP, students are assigned an education advisor.

Admission to Student Teaching

While admission to the TEP, which permits students to take certain College of Education courses, requires a 2.50 cumulative grade-point average, for some majors higher criteria must be met for admission to student teaching. Students should consult their secondary education advisor or the Division of Secondary Education office for the student teaching admissions requirements for their certification program.

Degree Programs

The Division of Secondary Education offers, or jointly administers with departments in the College of Liberal Arts, advanced degree programs in the following fields of professional interest: art education, communication studies education, curriculum and supervision, developmental reading, English education, foreign language education, home economics education, mathematics education, music education, physical education, science education, and social studies education.

In some fields, only master's level programs are offered, whereas in other fields, educational specialist and Ph.D. degree programs also are offered. All degrees offered are listed below, grouped by program area.

Art Education

Master of Arts

The master's degree program is administered by the School of Art and Art History in cooperation with the College of Education. Students make application for admission to the School of Art and Art History.

The purpose of the program is to prepare highly qualified teachers of art for elementary and secondary schools and community colleges. The strong academic emphasis of this program enables teachers who are themselves creative artists to become highly literate in the history and language of art.

Admission

Applicants must have completed the equivalent of the minimum core course work in art required for the B.A. or B.F.A. degree in art from The University of Iowa and a certificate to teach art. Applications must be accompanied by a representative portfolio of the candidate's work, consisting of eight slide reproductions of art work and one example of written work. The written work may be a paper previously written for a course or it may be an original paper. Deficiencies in undergraduate art or courses recommended for teacher certification are evaluated, allowing admittance on the condition that the student make up required course work concurrently with work for the degree. Calumet must meet Graduate College requirements for admission.

Degree Requirements

Studio and art history (18 s.h.): either 1° semester hours of studio art and 6 semester hours of art history, or 2° semester hours of art history and 6 semester hours of studio art.

Art education seminars (6 s.h.) for the courses 75.367 Seminar: Current Issues in Art Education.

Twelve semester hours to be specified after the student begins the program.

Thesis: either a written or studio thesis; if a studio thesis is elected, the student must pass M.A. clearance in the School of Art and Art History. Comprehensive examinations: a written and/or oral examination in an art education; master's degree programs may require a three-hour examination or a one-week research project.

Doctor of Philosophy

The doctoral degree program is administered by the College of Education with the cooperation of the School of Art and Art History. Students make application for admission to the School of Education College of Education.

The program prepares college teachers and researchers in art education and related fields to fill state departments of education and school systems. It also provides students with an opportunity to continue inquiry and creative work in art education and in studio.

Admission

Students must meet the general requirements for doctoral students in the Graduate College and have an M.A. degree in art education from The University of Iowa or an equivalent degree from an accredited degree-granting college or university. Application to the program must be accompanied by a representative portfolio of the candidate's work, consisting of 12 slide reproductions of art work and two examples of written work. The written work may consist of papers previously written for a course or original papers.
These should be submitted to the office of Art Education, North Hall.

In the case of course work deficiencies, students must register for referred courses. One year of successful teaching experience in an elementary or secondary school is required prior to admission or completion of the doctoral program.

Degree Requirements
At least 60 semester hours of graduate work beyond the M.A. as planned with the student's advisor, including at least 15 semester hours in the School of Art and Art History, 15 semester hours in an art education stream, 15 semester hours in a related area (e.g., aesthetics, anthropology, higher education, early childhood education, psychology, sociology), and 15 semester hours in thesis and tool courses. 75.306 or TE.330 Introduction to Research in Art Education.

Comprehensive examinations, both oral and written—the written examination consists of an in-depth research paper(s) assigned by the examining committee to be completed within 14 days, after which an oral examination on the project is held (the written portion of the examination is not intended to relate directly to the dissertation proposal). Satisfactory completion of a written dissertation that constitutes a contribution to scholarship, for at least 12 semester hours, the student is expected to prepare a dissertation proposal before the dissertation committee; an oral examination on the dissertation is the Ph.D. final examination.

Communication Studies Education

Master of Arts
The program prepares teachers and supervisors of speech communication for secondary and post-secondary positions.

Admission
Candidates must have a grade-point average of 2.75. Candidates with strong academic background in speech communication may need additional courses beyond the minimum requirement. Application should be made to the Department of Communication Studies, Communication Studies Building.

Degree Requirements
A minimum of 36 semester hours of approved graduate courses, at least 24 at the University of Iowa, including:

Two graduate courses in communication education;

Two graduate courses in a second division of the department;

Two graduate courses in a third division of the department;

36.306 Introduction to Research.

Three 200- or 300-level courses, and

Other courses recommended by the advisor and committee.

Successful completion of a paper or project covering substantial scholarly investigation, and writing, usually done in a seminar or independently under the direction of an advisor. The project or paper must be evaluated by the committee with the comprehensive examination.

A comprehensive examination consisting of three two-hour segments to be defined and limited by the student and an advisor when the plan of study is prepared.

Curriculum and Supervision

Master of Arts
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.

Degree Requirements
Common Core (18-20 s.h.)

75.196 Curriculum Foundations 3-4 s.h.

75.117 Philosophy of Education (or its equivalent) 2 s.h.

75.257 Educational Measurement and Evaluation 3 s.h.
or

75.255 Construction and Use of Evaluation Instruments 3 s.h.
or

75.150 Introduction to Educational Measurement 3 s.h.

75.281 Junior High School and Middle School Curriculum 4 s.h.

75.291 Secondary School Curriculum 3 s.h.

75.300 Design and Organization of Curriculum 3 s.h.

Research tool, selected in consultation with the advisor, typically:

75.143 Introduction to 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:

75.393 Master's Degree Thesis 2-4 s.h.

Total 30-32 s.h.

Two-hour comprehensive examinations, one in curricular and one in a related field in education or in a cognate field, or three two-hour examinations.

Doctor of Philosophy
The 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.

Degree Requirements
A minimum total of 60 semester hours, including other approved graduate course work, is required.

Common Core (36-42 s.h.)

75.196 Curriculum Foundations 3-4 s.h.

75.281 Junior High School and Middle School Curriculum 3 s.h.

75.291 Secondary School Curriculum 3 s.h.

75.300 Design and Organization of Curriculum 3 s.h.

75.291 Problems of Curriculum Planning 3 s.h.

At least two advanced supervision courses in secondary or elementary school subject fields 6 s.h.

75.257 Educational Measurement and Evaluation or 3 s.h.

75.255 Construction and Use of Evaluation Instruments or 3 s.h.

75.150 Introduction to Educational Measurement 3 s.h.

75.280 Individualization in Secondary Education (3-6 s.h.)

A minimum of two research tools, typically statistics, data processing, research design, or foreign language 9-12 s.h.

Electives, to be chosen in consultation with advisor 6-8 s.h.

Recommended electives include:

75.130 Educational Sociology 2 s.h.

75.117 Philosophy of Education 2 s.h.

75.121 Educational Psychology 3 s.h.

75.170 Introduction to Psychology of Reading 3 s.h.

75.297 Administrative Leadership Theory 4 s.h.

75.120 Introduction to Instructional Design and Technology 3 s.h.

75.121 Curriculum Personnel 3 s.h.

All doctoral candidates are required to complete at least 8 semester hours of capstone work in areas such as sociology, psychology, or political science.

A.493 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.

Developmental Reading

Master of Arts

This program prepares graduate students for positions as reading specialists in kindergarten and grades 1-12. The required course work develops the skills, knowledge, and competencies needed for supervisory, certificated, and remedial teaching positions in reading. The program also builds a background in reading for students who want further specialization in the area and eventually to teach and/or conduct research in a college or university. Successful completion of the program, combined with one year of successful teaching experience that subject teaching reading as a significant part of the experience, qualifies students for certification as a reading specialist.

Admission

Students must meet the general requirements of the Graduate College, have an undergraduate grade-point average of 3.00, hold a bachelor's degree, and satisfied the Board of Regents of the University of Iowa. In addition, the student must have a valid reading certificate, or evidence of two years of successful teaching experience.

Degree Requirements

Requirements include a minimum of 33 semester hours with 36 hours required to complete the degree program. The following courses are required of all students:

TP 170 Introduction to the Psychology of Reading 3 s.h.
7C 171 Reading Clinic: Teaching Techniques 3 s.h.
7C 172 Reading Clinic: Teaching Practicum 3 s.h.
7E 263 Developing Foundations for Reading: Preparatory and Primary 3 s.h.
7E 355 System of Intermediate Grade Reading 3 s.h.
 EITHER of the following courses:
7P 101 Methods of High School Reading 3 s.h.
7P 105 Developing Reading Skills in the Secondary School 2 s.h.
 EITHER of the following courses:
TP 110 Introduction to Educational Measurement 3 s.h.
TP 113 English Language Development 3 s.h.
 EITHER of the following course:
7P 254 Seminar: Secondary Reading 3 s.h.
7E 255 Research, Resources, and Current Issues (Reading) 3 s.h.
  OR
7P 106 Child Development 3 s.h.
7P 133 Educational Psychology 3 s.h.
7P 133 The Adolescent and Young Adult 3 s.h.
One of the following:
7S 186 Curriculum Foundations 2.5 s.h.
7S 291 Secondary School Curriculum 2.5 s.h.
7S 300 Design, Organization of Curriculum 3 s.h.
7S 302 Improving Instruction in the Secondary School 2 s.h.
One of the following courses:
7S 362 Supervision of Student Teachers and Auxiliary Personnel 2.5 s.h.
7S 363 Supervision and Evaluation 2.5 s.h.
7S 365 Reading Clinic: Supervision and Evaluation 3 s.h.
7S 366 Problems in Supervision 2.5 s.h.
Thesis, if relevant; one of these:
6S 2750 M.A. Thesis in Early Childhood and Elementary Education 3 s.h.
7S 293 Master's Degree Thesis 2 s.h.
7P 235 MA. Thesis in Educational Psychology, Measurement, or Statistics 3 s.h.
Students may select in consultation with their advisors the remaining hours on elective from among such as curriculum, supervision, language arts, teaching and evaluation, linguistics, and speech pathology.

Students take six hours of comprehensive examinations. One examination is based on reading courses. The other examination is based on course work in supporting areas. With the agreement of the advisor and the student's committee, a comprehensive project may be substituted for the written examination in the supporting areas.

English Education

Master of Arts

The program prepares supervisors of English, department chairmen, curriculum specialists for secondary schools, and teachers of specialized areas. Application should be made to the Graduate 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 28 semester hours in English. Preferred applicants will have a minimum score of 1000 on the verbal and analytical portions of the Graduate Record Examination (GRE) General Test. Students must maintain a 3.00 grade-point average while enrolled in the program.

Degree Requirements

Students specialize in English education and one or two other areas. The other areas may be a library field, junior high school teaching, foreign, 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 at courses numbered 200 or above. Students take a comprehensive examination in English education and in their chosen areas.

Master of Arts in Teaching

The M.A.T. degree program is designed for students who have an undergraduate degree in English and have no professional education courses. Successful completion of the program enables 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 3.00. Since this is a certification program, candidates must have qualified for certification previously. Applicants are expected to have no more than 6 semester hours of course work in professional education courses prior to admission.

Degree Requirements

Students must complete a minimum of 33 semester hours. This includes at least 18 semester hours of graduate courses offered by the Department of English, planned with the advisor to supplement the undergraduate major, and the following professional education courses:

- 7P 124 Educational Psychology 3 s.h.
- 7P 194 History of Western Education 3 s.h.
- 7S 101 Principles of Education 2 s.h.
- 7S 110 Individual Projects in Literacy Practice 1-3 s.h.
- 7S 102 Reading Instruction for the Classroom Teacher 3 s.h.
- 7S 121 Reading: High School Reading 3 s.h.
- 7S 195 Developing Reading Skills in the Secondary School 3 s.h.

Basic competency in microcomputing

- 7S 154 Methods: English Language 3 s.h.
- 7S 156 Seminar: Curriculum and Instruction 2 s.h.
- 7S 191-72 Observation and Laboratory Process in the Secondary School 12 s.h.

A two-part comprehensive examination is required. One part covers methods, materials, and curriculum for high school English; the second part covers one-half the comprehensive examinations administered to Master of Arts (library study) candidates in the Department of English.

Doctor of Philosophy

This program is administered by the College of Education. It prepares teachers of English, specialists in literature for young people, specialists in reading as secondary and junior college levels, specialists in writing at secondary and junior college levels, and
Foreign Language Education

Master of Arts in Teaching

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 2.00 undergraduate grade-point average are required.

Degree Requirements

Students must complete at least 18 semester hours of graduate courses in a foreign language department and the following professional education courses:

75:92 Introduction to Teaching Foreign Language
71P:131 Educational Psychology
71P:107 History of Western Education
71P:117 Philosophy of Education
71P:133 Basic Program for Foreign Language Computer-Assisted Instruction (same as 91:58, 35:117)
71P:116 Methods in Foreign Language
71P:191-192 Observation and Laboratory Practice in the Secondary School
71P:187 Seminar: Curriculum and Student Teaching
71P:170 Human Relations for the Classroom Teacher

A comprehensive examination covering the candidate's knowledge and proficiency in the language, literary or cultural analysis, and foreign language education.

Home Economics Education

Master of Arts

The M.L. program is administered by the Department of Home Economics and is described in the "College of Liberal Arts" section of the Catalog.

Master of Arts in Teaching

Admission to the M.A.T. program is through the College of Liberal Arts. The program requirements are described under "Home Economics" in the "College of Liberal Arts" section of the Catalog.

Mathematics Education

Master of Arts

The program provides students with advanced specialization in mathematics and education as a better foundation 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 to teach secondary school mathematics.

Degree Requirements

A minimum of 16 semester hours of course work in mathematics approved by the student's advisor.

A minimum of four courses in mathematics education, which must include 75:235 Current Issues in Mathematics Education: 2-3 s.h. The remaining three courses are to be selected from the following:

50:230 Workshop in Secondary School Mathematics 1-3 s.h.
75:211 Computer-Based Teaching of Secondary School Mathematics 3 s.h.
75:230 The Teaching of Geometry 2-3 s.h.
75:232 The Teaching of Trigonometry 2-3 s.h.
75:239 The Teaching of Algebra 2-3 s.h.
75:235 Seminar in Mathematics Education 2-5 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 of philosophy of education, instructional design and technology, counseling, 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.

Three two-hour comprehensive examinations are required; two in secondary mathematics education, the second in mathematics, and the third in the cognate area.

Master of Science 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. Application should be made to that department.

Admissions requirements are the same as for the M.A. in education.

Degree 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.
Doctor of Philosophy

The program for a Ph.D. in mathematics education provides supervision, teacher education, employment, community college personnel, and mathematicians in mathematics education. It is administered by the College of Education.

The 72 semester hours include work taken toward the master's degree. Credit earned more than ten years previously must be submitted to the mathematics department for approval, and only up to 80 semester hours.

Admission

Applicants must have a graduate major in mathematics or the equivalent; a master's degree in mathematics, mathematics education, or education; a 3.00 grade point average; and, except in unusual circumstances, a current teaching certificate and a minimum of two years of teaching experience.

Degree Requirements

A minimum of 36 semester hours of graduate work in the Division of Mathematical Sciences (mathematics, statistics, and computer science) included the master's-level core requirements by pure or applied mathematics described under "Master of Science in Mathematics with Education Option" in this section of the Catalog. Courses passed toward a master's degree must be taken in 3.00 grade point average; and, except in unusual circumstances, a current teaching certificate and a minimum of two years of teaching experience.

A minimum of five courses in mathematics education, which must include 75.335 Seminar in Mathematics Education, and a minimum of two additional hours in 75.335 Seminar in Mathematics Education. Two additional comprehensive examinations are if either the student fails the comprehensive examinations at least twice or for the examinations. The comprehensive examination usually is at the end of the first year of study and is held during the last two days of the term. The comprehensive examination consists of a written examination in mathematics education and two selected from other fields of education or mathematics; an oral examination follows the written examinations. A dissertation is a research proposal in mathematics education; a proposal of the proposed research is required to be presented to the dissertation committee prior to the undertaking of the study. Upon completion of the dissertation, an oral examination is conducted in defense of the dissertation.

Music Education

Both the Master of Arts and Doctor of Philosophy degree programs are administered by the School of Music. The application to the College of Education is made to the School of Music.

Master of Arts

The program provides students with a deeper understanding of music education, and the role of music in the school curriculum. The degree program may be taken in 3.00 grade point average; and, except in unusual circumstances, a current teaching certificate and a minimum of two years of teaching experience.

Admission

The applicant must be a music teacher or in the process of completing certification. An undergraduate grade point average of 2.50, excluding grades in internships, is required for admission to regular status.

Degree Requirements

General Requirements

25.101 Introduction to Graduate Study in Music 2 s.h.

Music Theory

25.249 Introduction to Counterpoint and Analysis and Theory 3 s.h.
25.151 Electro 3 s.h.

Specific hour and course requirements in the theory area are determined by scores on the advisory examinations.

Music History and Literature

25.301 Advanced History and Literature of Music I 3 s.h.
25.302 Advanced History and Literature of Music II 3 s.h.
25.300-347 Electives 3 s.h.

Specific hour and course requirements in the history and literature area are determined by scores on the advisory examinations.

Music Education

25.144 Psychology of Music 2 s.h.
25.149 Research in Music Education 3 s.h.
25.265 Curriculum Development in Music Education 2 s.h.
25.269 Foundations of Music Education 2 s.h.
25.268 Electives to be selected in consultation with the adviser (may include thesis) 5-8 s.h.
Total 14-17 s.h.

Ensemble Credit

Two semester hours are required. The amount of credit applicable towards enrollment toward the degree in music education depends on the credit given. The amount of credit earned in music education electives count.

Graduate students must take a final written examination and complete the degree requirements.

Doctor of Philosophy

The program requires students for research, teaching, or administration in the following areas of specialization:

Colleges of music or music education and music education programs and planning; and director of music education and school music programs.

Graduate students must complete satisfactory credit equivalent to the corresponding course work in a master's program and complete the degree requirements.

Admission

Application is made to the School of Music. For admission to the Ph.D. program in music education, students must have a 3.0 grade point average on graduate work.
Electives
Students select courses in consultation with their advisors based on academic counseling and professional needs and goals. Students may choose from applied music, ensemble, theory, history, and literature; music education, statistics, and psychology.

Dissertation
Students earn a minimum of 12 semester hours for work on a dissertation.

Comprehensive Examination
The comprehensive examination is an exhaustive evaluation of the student’s knowledge of selected fields of study. Candidates must demonstrate mastery and scholarship in the areas of theory and practice of music education, research design and theory, specialized music performance, history and literature of music, and music theory and analysis. The examination typically is divided as follows: music education theory and practice and research methodologies, music theory and analysis, music history and literature, and a specialized related area.

Physical Education
Master of Arts
The M.A. programs in physical education are described in the "College of Liberal Arts" section of the Catalog.

Doctor of Philosophy
The Ph.D. programs in physical education are described in the "College of Liberal Arts" section of the Catalog.

Science Education
All graduate degrees in science education are administered by the College of Education.

Master of Arts in Teaching
The M.A.T. degree program is designed for students who have an undergraduate degree in one of the sciences and few or no professional education courses. Successful completion of the course work in science required by an endorsement program qualifies the student for an Iowa secondary teaching endorsement.

Admission
Applicants must have a bachelor’s degree 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:
75-170 Human Relations for the Classroom Teacher 3 s.h.

Component 3:
75-110 Educational Psychology 3 s.h.

Component 4:
75-111 Science Methods I: Elementary School Seminar and Practicum 2 s.h.

Component 5:
75-112 Science Methods II: Middle/ Senior High School 2 s.h.

Component 6:
75-110 Observation and Laboratory Practicum in the Secondary School 3 s.h.

Component 7:
75-133 Science Methods III: Resources, Resources, Teaching Strategies, and Curriculum Development for K-12 Science 3 s.h.

Component 7:
75-187 Seminar: Curriculum and Student Teaching 3 s.h.

75-188 Individual Projects in Laboratory Practice 3 s.h.

75-190 Observation and Laboratory Practice in the Secondary School 3 s.h.

75-190 Observation and Laboratory Practice in the Secondary School 3 s.h.

Science Core
91-128 Meaning of Science 2 s.h.

91-130 Science in Historical Perspective 2 s.h.

91-102 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.

91-103 Societal and Educational Applications of Biological Sciences 3 s.h.

91-165 Societal and Educational Applications of Physical Sciences 3 s.h.

Science Electives
11 s.h.

Master of Science in Science Education
This degree is designed for students who want to pursue advanced science education specialization in teaching (undergraduate through college) or in related fields such as medical education, museum programs, and textbook editing. It is offered with or without thesis.

Admission
Candidates must have a 2.50 undergraduate grade-point average and usually must have a baccalaureate degree in one of the sciences or in 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 with thesis or 34 semester hours without thesis, as prescribed as follows.

Science Education (9 s.h.)
- 78/79/255 Science Education: Issues, History, and Rationale 3 s.h.
- 78/79/256 Science Education and the Nature of Science 3 s.h.
- 78/79/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
- 78/252 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.
- 78/250 Seminar in Science Education 3 s.h.
- 78/251 Seminar: Science Education 3 s.h.
Science Specialization (17-21 s.h.)
- 78/258 Meaning of Science 3 s.h.
- 78/259 College of Applied Science courses selected in consultation with the advisor 3-20 s.h.
- Correlative Studies (4-6 s.h.) Science and applied science courses selected from an area other than the specialization 3-6 s.h.

Comprehensive Examination
The comprehensive examination consists of two parts: one dealing with science education, the other with the science specialization area.

Educational Specialist in Science Education
The Ed.S., in Science Education is an intermediate degree between the Master's and the Ph.D. degree. It is recommended for those who do not pursue a Ph.D. or science supervisors as well as for instruction in community colleges and small four-year liberal arts colleges.

Admission
Candidates must have a 2.70 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 degree beyond a master's degree may be applied to this total.

Science Education (26 s.h.)
- 78/79/255 Science Education: Issues, History, and Rationale 3 s.h.
- 78/79/256 Science Education and the Nature of Science 3 s.h.
- 78/79/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
- 78/79/258 Science Education Research Models and Conceptual Schemes 3 s.h.
- 78/355 Science Education Internship: Prosegr. Development and Implementation 1-3 s.h.
- 78/355 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
- 78/258 Seminar: Science Education 3-6 s.h.
- 78/355 Science Education Internship: Prosegr. Development and Implementation 1-3 s.h.
- 78/256 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
- 78/258 Seminar: Science Education 3-6 s.h.

Doctor of Philosophy in Science Education
This program is administered by the College of Education. The degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

Admission
Candidates must meet the minimum admission standards of the Graduate College. Usually, applicants must have completed a master's degree in one of the sciences or science education and have earned a 3.0 grade-point average on all graduate work taken prior to making the application.

Requirements
A minimum of 32 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 (24 s.h.)
- 78/79/255 Science Education: Issues, History, and Rationale 3 s.h.
- 78/79/255 Science Education and the Nature of Science 3 s.h.
- 78/79/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
- 78/252 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.
- 78/250 Seminar in Science Education 3 s.h.
- 78/251 Seminar in Science Education 3 s.h.

Science Specialization (17-21 s.h.)
- 78/258 Meaning of Science 3 s.h.
- 78/259 College of Applied Science courses selected in consultation with the advisor 3-20 s.h.
- Correlative Studies (4-6 s.h.) Science and applied science courses selected from an area other than the specialization 3-6 s.h.

Comprehensive Examination
The comprehensive examination consists of two parts: one dealing with science education, the other with the science specialization area.

Doctor of Philosophy in Science Education
This program is administered by the College of Education. The degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

Admission
Candidates must meet the minimum admission standards of the Graduate College. Usually, applicants must have completed a master's degree in one of the sciences or science education and have earned a 3.0 grade-point average on all graduate work taken prior to making the application.

Requirements
A minimum of 32 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 (24 s.h.)
- 78/79/255 Science Education: Issues, History, and Rationale 3 s.h.
- 78/79/255 Science Education and the Nature of Science 3 s.h.
- 78/79/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
- 78/252 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.
- 78/250 Seminar in Science Education 3 s.h.
- 78/251 Seminar in Science Education 3 s.h.

Science Specialization (17-21 s.h.)
- 78/258 Meaning of Science 3 s.h.
- 78/259 College of Applied Science courses selected in consultation with the advisor 3-20 s.h.
- Correlative Studies (4-6 s.h.) Science and applied science courses selected from an area other than the specialization 3-6 s.h.

Comprehensive Examination
The comprehensive examination consists of two parts: one dealing with science education, the other with the science specialization area.

Doctor of Philosophy in Science Education
This program is administered by the College of Education. The degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

Admission
Candidates must meet the minimum admission standards of the Graduate College. Usually, applicants must have completed a master's degree in one of the sciences or science education and have earned a 3.0 grade-point average on all graduate work taken prior to making the application.

Requirements
A minimum of 32 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 (24 s.h.)
- 78/79/255 Science Education: Issues, History, and Rationale 3 s.h.
- 78/79/255 Science Education and the Nature of Science 3 s.h.
- 78/79/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
- 78/252 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.
- 78/250 Seminar in Science Education 3 s.h.
- 78/251 Seminar in Science Education 3 s.h.
Social Studies Education

Master of Arts

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 baccalaureate degree in history or social sciences and wish to obtain a teaching certificate in the process of completing the master’s degree.

Admission

Applicants must have a bachelor’s degree in history or one of the other social sciences from an accredited institution; a cumulative grade-point average of 3.00; a 3.00 grade-point average in history and/or other social science courses; preferred composite Graduate Record Examination (GRE) General Test score of 1000 on the verbal and quantitative batteries; and two letters of recommendation. Evidence of writing ability in the form of a completed major paper or essay also is required.

After completing a social studies education major, the M.A. candidate must maintain at least a 3.00 grade-point average.

Requirements

Program A

Program A students must complete 36 semester hours distributed among history, social sciences, or related areas, with a minimum of 18 semester hours in each of three fields.

Nine of the total 36 semester hours must consist of graduate courses numbered 200 or above distributed among the fields selected for concentration.

Thesis (if this option is selected): A research or investigative problem in history or social science in a related area, in which case the thesis director is a member of the appropriate department; or an investigative problem in social studies education, in which case the thesis director is a faculty member in the College of Education.

Comprehensive examinations: A two-hour written examination in each of the three fields selected for concentration. An oral examination will follow the written examination, conducted by the candidate’s committee as a whole.

Program B

Program B students must complete a total of 26-36 semester hours, consisting of the courses listed below. All of the following courses must be completed, but students may elect to use some of the course work in the process of completing the baccalaureate 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 34. In all instances, the student must take appropriate work for meeting all laws Department of Education requirements for teacher certification.

Professional Education Courses

75:100 Issues in Education 3 s.h.
75:131 Educational Psychology 3 s.h.
75:170 Human Relations for the Classroom Teacher 3 s.h.
75:120 Introduction to Instructional Design and Technology 3 s.h.
75:170 Methods: Social Studies 3 s.h.
75:177 Philosophies of Education or 75:180 Educational Sociology 3 s.h.
75:377 Seminar: Social Studies Education 3 s.h.
75:191 Observation and Laboratory Practice in the Secondary School 6 s.h.
75:192 Observation and Laboratory Practice in the Secondary School 6 s.h.

Candidates also are required to register for a practicum in a public school (75:99) for which no credit is granted.

Subject Area Specialization Courses

In the semester hour of course work, one course in history or one other social science field is selected in consultation with the advisor.

Comprehensive Examination

The examination consists of three parts: a two-hour examination in the major area specialization, a two-hour examination in general professional education, and a two-hour examination in social studies education.

Doctor of Philosophy

This program is administered by the College of Education. It program prepares secondary chairs, supervisors, curriculum directors, teacher education personnel, and college instructors in the social sciences and pedagogy.

Admission

Applicants must have a bachelor’s degree in history or the social sciences, or a master’s degree in history, the social sciences, or education. They must satisfy the requirements for admission to a doctoral program in the Graduate College and have a grade-point average of 3.00 or above in a minimum Graduate Record Examination (GRE) General Test score of 1200 (combined of verbal and quantitative) is preferred. Six-hour papers or field research are required as equivalents if no thesis was written as part of the M.A. An interview is required prior to regular admission.

Degree Requirements

Course work: a minimum of 30 semester hours of course work and dissertation credit beyond the bachelor’s degree and including total requirements is required. The 90 semester hours must be distributed among history, social sciences or related areas, and professional education, depending on the background and goals of the candidate.

Seminars and courses numbered 200 or above are required in each of the areas of study constituting the major.

A minimum of 2.5 semester hours of 98:201, 98:202, or 75:203 must be completed with one of the faculty members in the social studies education, unless other course work with these faculty members has been completed.

Tool requirements: 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: three three-hour examinations, one in each of the areas of study, usually are required. Depending on the distribution of work taken, the nine hours of written examinations may be rearranged.

The Ph.D. examining committee consists of a minimum of one faculty member from the liberal arts disciplines and one from social studies education. The examining committee and the Ph.D. program in social studies education is determined with regard to the nature of the student’s Ph.D. program and distribution of course work. An oral examination is conducted by the committee as a whole following the written examination.

Alternatives to the traditional written comprehensive examinations may be considered by the candidate’s committee.

Disertation: a dissertation is required on a research problem in history or the social sciences, or in related areas, in which case the dissertation director is a faculty member of the appropriate department, or in 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 proposal of the proposed research to the dissertation committee prior to undertaking the study. Upon completion, a preliminary examination is conducted in defense of the dissertation.

Continuing requirements for maintaining candidacy are a grade-point average of 3.00 plus annual reevaluation.

Assistantships

A limited number of half-time assistantships are available for students pursuing Ph.D. degrees in secondary education. Holders of such assistantships may register for no more than 12 semester
hours pay semester, and, except with special permission, must register for at least 6 semester hours per semester. Assignments vary. Some involve teaching undergraduate courses or supervising practicum experiences, and others primarily involve research activities. Assistantships in some liberal arts departments also may be available for secondary education graduate students. Candidates with appropriate credentials should apply directly to the department in question or consult the College of Education adviser directing the program in their field.

Courses

7510 Introduction to Teaching English 3 cr.
Student teacher assigned to teaching English at elementary or secondary schools, five to six hours per week in the school plus one or two classroom meetings. Prerequisite: admission to the master's education program.

7514 Introduction to Teaching German 4 cr.
Student teacher assigned to teaching German at elementary or secondary schools, five to six hours per week in the school plus one or two classroom meetings. Prerequisite: admission to the master's education program.

7520 Introduction to Teaching Foreign Language 2 cr.
Student observer and assist foreign language teacher and students in secondary schools, four to six hours per week in the school plus two or three classroom meetings. Prerequisite: admission to the master's education program.

7523 Introduction to Teaching Spanish 3 cr.
Student teacher assigned to teaching Spanish at elementary or secondary schools, five to six hours per week in the school plus one or two classroom meetings. Prerequisite: admission to the master's education program.

7540 Introduction to Teaching Journalism 3 cr.
Student reporter and editor at high school newspaper, five to six hours per week on the paper plus one classroom meeting. Prerequisite: admission to the master's education program.

7550 Introduction to Teaching Mathematics 3 cr.
Student teacher assigned to teaching mathematics at elementary or secondary schools, five to six hours per week in the school plus one or two classroom meetings. Prerequisite: admission to the master's education program.

7560 Introduction to Teaching Music 3 cr.
Student observes and assists music teachers and students in elementary or secondary school, five to six hours per week in the school plus one or two classroom meetings. Prerequisite: admission to the master's education program.

7570 International Strategies and Design in Physical Education 3 cr.
Design and implement unit plans, strategies and activities for middle or secondary school students; 50 to 60 contact hours. Prerequisite: admission to the master's education program.

7580 Science Methods in Elementary School Practice and Seminar 3 cr.
Student observes and assists science teachers and students in elementary school, five to six hours per week in the school plus one or two classroom meetings. Prerequisite: admission to the master's education program.

7590 History of Education 3 cr.
Major topics in the history of education, including educational philosophies, organization, instructional procedures, and contemporary problems of both elementary and secondary schools. Same as 7015.

7591 Directing Fine Arts Programs 3 cr.
Service program planning, supervision, and evaluation in the secondary level departments of instrumental music programs. Prerequisite: limited to direct-service actions only. Same as 7037.

7592 Mathematics and Curriculum in Physical Education 3 cr.
Administrative issues in physical education and athletics, including strategic use of drills, skill development, public relations, and athletic scheduling. Same as 7080, 7085.

7593 Advanced Mathematics 3 cr.
All一轮 classes and methods at elementary and secondary levels, are curricular, and mathematics teaching and learning, assessment, and improvement, and role of technology in mathematics. Same as 7037.

7594 Introduction to Sociology 3 cr.
Introduction to sociology, theories of socialization, and management of museums and institutional sites. Emphasis on diversity experience. Same as 241-121, 122, 123, 124, 125, 126, 127.

7595 Methods: Second-Grade School Teacher 3 cr.
Course designed to provide methods training for teaching second grade, including planning, assessing children, and implementing methods. Same as 121-160, 161, 162.

7596 Methods: Elementary School Foreign Language 2 cr.
Methods, materials, procedures, and the theoretical basis for teaching foreign language instruction in elementary schools.

7597 Language Laboratory Equipment 2 cr.
Use of language laboratory equipment in various languages and in the classroom. Same as 162.

7598 Methods: Human Economics 3 cr.
Principles, concepts, and procedures central to teaching human economics.

7599 Methods and Materials in Family Life Education 2 cr.
Principles, exercises, and methods of promoting family life education material in elementary, middle, and secondary schools. Same as 162.

7600 Workshop for Secondary School Teachers 3 cr.
Teaching juridical writing and oral presentation in philosophy, mathematics, and science. Credit toward degree; developing curriculum and assessing student achievement for teachers responsible for preparing curricula programs or participating in educational media research projects.

7601 Introduction to Computer Programming for Teachers 3 cr.
Program design, selection of the appropriate computer languages, novice computer knowledge, programming language, or the applications of educational technology. Same as 160, 162.

7606 Curriculum and Methods 3 cr.

7607 Curriculum and Methods in High School Social Studies 3 cr.
Survey of professional and educational considerations in the teaching of social studies; methods, materials, and techniques of teaching in grades 9-12. Same as 153-240, 242, 243, 108.

7608 Methods of Mathematics for Low Achievers 3 cr.
Organization of concepts and methods of teaching mathematics to low achieving elementary school students. Emphasizes new materials, instructional aids, and technology-based methods, for special education teachers.

7610 Practicum: Band Instrument Care and Repair 1 cr.

7612 Child and Adolescent Voice Production 1 cr.
Principles and techniques of voice production and vocal development for children at the adolescent stage, plus voice development and methods of solving specific voice problems.

7613 Band Methods and Materials 3 cr.
High school and instrumental music-theoretical material required for teaching instrumental music teacher and private instructor. Same as 153.

7614 Measurement and Evaluation in Music Education 1 cr.
Measurement and evaluation techniques for music education, including personnel, methods, and performance evaluation. Same as 153, 154.

7615 Methods and Materials Secondary School General Music 3 cr.
Music education, musical, and experiential preparation of the general music teacher, at both the elementary and secondary levels, and in the instructional field. Same as 153.

7616 Instrumental Techniques 3 cr.

7617 Psychology of Music 1 cr.
Nature of music and its physical, psychological, and emotional influence on children, and music listening.

7618 Methods of Secondary Physical Education 3 cr.
Use of techniques of student movement-based games to develop the skills of methodologies, teaching technique, sport knowledge, physical education programs, and contemporary approach to teaching physical education (same as 153-240, 160, 162; 150).

7619 Clasical Methods 3 cr.
Materials and procedures for teaching of parochial school physical education, in local social development for the young athlete; teaching physical education in parochial schools. Same as 153-160, 162.

7620 Clasical Classroom and Literature 3 cr.
Teaching physical education to non-academic students, psychology, and life-style within student and illuminated environment, focusing on teaching in elementary or secondary schools. Same as 153-160, 162;

7621 General Research in Music 2 cr.
Principals of research in music education.

7622 String Methods and Materials 3 cr.
The same as 153-240, 160, 162;

7623 Science Methods in Elementary School 2 cr.
Integration of instructional theory and science curriculum with maximum potential for student participation in a variety of hands-on problem-solving situations as a model for teaching the science curriculum.

7624 Science Methods in Middle-Level School 3 cr.
Science methods, including physical science, life science, and social science, using middle-school level science texts.

7625 Science Methods in High School 3 cr.
Science methods, including physical science, life science, and social science, using high school level science texts.

7626 Principles of Health Education 3 cr.
Secondary school health education, student health, and health education in the secondary school. Same as 153.

7627 Health and the Sociology of Health 3 cr.
Secondary school health education, student health, and health education in the secondary school. Same as 153.

7628 Methods of Teaching Social Studies 3 cr.
Secondary school social studies, student learning, and social studies in the secondary school. Same as 153, 154.

7629 Methods of Teaching Foreign Languages 3 cr.
Secondary school foreign languages, student learning, and foreign languages in the secondary school. Same as 153, 154.
Degree Programs
Admission
Admission requirements include:
Comprehensive graduate application form: Copies of official transcript for all previous college coursework. Official report of the Graduate Record Examination (GRE) General Test, verbal and quantitative.
Three current letters of recommendation.
Evidence of experience in regular or special education.
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 and a combined verbal and quantitative GRE score of 1000.
Education Specialist: A graduate grade-point average of 3.0 and a combined verbal and quantitative GRE score of 1000.

Master of Arts

SPECIAL EDUCATION

Charie Van R. Fucsa
Professor

SPECIAL EDUCATION

SPECIAL EDUCATION

SPECIAL EDUCATION

SPECIAL EDUCATION

SPECIAL EDUCATION

SPECIAL EDUCATION
Admission requirements are:
A completed graduate application form;
Copies of official transcripts for all previous college coursework;
An official report of the Graduate Record Examination (GRE) General Test, verbal and quantitative, with a score of at least 1000;
Three current letters of recommendation;
Evidence of regularity in regular or special education; and
An undergraduate grade-point average of at least 2.75.

An interview may be required.

Program Core Requirements
Special education core requirements for all programs include:
7U130 Exceptional Persons 3 s.h.
7U134 Parent-Teacher Communication 3 s.h.
7U206 Practicum with Exceptional Persons 3 s.h.
7U229 Assessment of Learning Difficulties 3 s.h.

Learning Disabilities
A core of courses in learning disabilities is required for all students. It includes:
7U131 Introduction to Learning Disabilities 3 s.h.
7U157 Supervised Teaching with Learning Disabled 5 s.h.
7U209 Seminar: Graduate Supervision 1 s.h.

For students seeking elementary (K-6) approval, the following courses also are required:
7U171 Reading Clinic: Teaching Techniques 2-3 s.h.
7U172 Reading Clinic: Teaching Practicum 2-3 s.h.
7U193 Teaching Elementary School Mathematics 2-3 s.h.
7U203 Methods of Teaching Elementary Age Learning Disabled 5 s.h.
Total 10-15 s.h.

For students seeking secondary (7-12) approval, the following courses also are required:
7U121 Secondary Methods: Job Placement and Sampling for the Handicapped 3 s.h.
7U130 Methods: Mathematics for Low Achievers 3 s.h.
7U204 Methods: High School Reading 2-3 s.h.
7U303 Methods of Teaching Secondary Age Reading Disabled 3 s.h.
Total 10-15 s.h.

The remainder of the required 38 semester hours is elective courses chosen by the student and the academic advisor.

Behavior Disorders
A core of courses in behavior disorders is required for all students. It includes:
7U132 Introduction to Behavioral Disorders 3 s.h.
7U310 Characteristics and Programs for Severely Behaviorally Handicapped Children and Youth 2 s.h.
7U211 Intervention Methods for Severely Behaviorally Handicapped Children and Youth 2 s.h.
7U212 Seminar: Behavior Assessment and Evaluation 3 s.h.
7U218 Supervised Teaching with Behavior Disorders 5 s.h.
7U219 Seminar: Graduate Supervised Teaching 1 s.h.

For students seeking elementary (K-6) approval, the following courses also are required:
7U202 Methods of Teaching Elementary-Age Behavioral Disorder 3 s.h.
Total 31 s.h.

For students seeking secondary (7-12) approval, the following courses also are required:
7U204 Methods of Teaching Secondary-Age Behavioral Disorder 3 s.h.
7U212 Supervised Methods: Job Placement and Sampling for the Handicapped 3 s.h.
Total 34 s.h.

The remainder of the required 38 semester hours is elective courses chosen by the student and the academic advisor.

Mental Retardation—Mild/Moderate
A core of courses in mental retardation is required for all students. It includes:
7U130 Mental Retardation 2 s.h.
7U136 Teaching Moderately Mentally Retarded 2 s.h.
7U220 Supervised Teaching with Mildly Mentally Retarded 5 s.h.
7U221 Supervised Teaching with Moderate Mentally Retarded 5 s.h.
For students seeking elementary (K-6) approval, the following courses also are required:
7U214 Methods Teaching Elementary Mildly Mentally Retarded 3 s.h.
Total 30 s.h.

For students seeking secondary (7-12) approval, the following courses also are required:
7U212 Methods: Secondary Teaching Mildly Mentally Retarded 3 s.h.
7U220 Methods: Mathematics for Low Achievers 3 s.h.
Total 31 s.h.

Developing Reading Skills in the Secondary School 3 s.h.
7U229 Career Guidance and Job Placement 1 s.h.
Total 38-39 s.h.

The remainder of the required 38 semester hours is elective courses chosen by the student and the academic advisor. Students who meet the requirements for certification in the area of Elementary Mental Retardation—Mild/Moderate can meet the requirements for endorsement in the area of Physically Handicapped (K-6) by completing the following courses:
3.15 Introduction to Speech and Hearing Processes and Disorders 3 s.h.
7U130 Methods of Teaching Physically Handicapped 3 s.h.
7U139 Orientation to the Rehabilitation of the Physically Handicapped Child 3 s.h.
7U121 Supervised Teaching with Physically Handicapped 5 s.h.

Multicultural Resource—Mildly Handicapped
A core of courses is required for all students. It includes:
7U117 Interdisciplinary Programs for Disabled 3 s.h.
7U130 Methods of Teaching in Resource Programs 3 s.h.
At least two of the following:
7U131 Introduction to Learning Disabilities 3 s.h.
7U121 Introduction to Behavioral Disorders 3 s.h.
7U135 Mental Retardation 3 s.h.
For students seeking elementary (K-6) approval, the following courses also are required:
7U171 Reading Clinic: Teaching Techniques 2-3 s.h.
7U172 Reading Clinic: Teaching Practicum 2-3 s.h.
7U193 Teaching Elementary School Mathematics 2-3 s.h.
7U214 Methods: Teaching Elementary Mildly Mentally Retarded 3 s.h.
7U210 Methods of Teaching Elementary Age Learning Disabled 3 s.h.
7U220 Methods of Teaching Elementary Age Behavioral Disorder 3 s.h.
7U222 Supervised Teaching in Resource Program 5 s.h.
7U204 Seminar: Graduate Supervised Teaching 1 s.h.
Total 36-39 s.h.
Special Education

For students seeking secondary (7-12) approval, the following courses also are required:

7U:121 Secondary Methods: Job Placement and Sampling for the Handicapped 3 s.h.
7U:136 Methods: Mathematics for Low Achievers 5 s.h.
7U:194 Methods: High School Reading 2-3 s.h.
or 7U:195 Developing Reading Skills in the Secondary School 2-3 s.h.
7U:215 Methods: Teaching Secondary Mildly Mentally Retarded 3 s.h.
or 7U:203 Methods of Teaching Secondary-Age Learning Disabled 3 s.h.
or 7U:204 Methods of Teaching Secondary-Age Behavioral Disorders 3 s.h.
or 7U:222 Supervised Teaching in Resource Program 5 s.h.
7U:205 Seminar: Graduate Supervised Teaching 1 s.h.
Total 39 s.h.

Multidisciplinary Special Class with Integration
Requirements include the core courses from 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. For students seeking secondary (7-12) approval, the courses required at the secondary level in the two programs chosen above also must be completed.

Educational Specialist

Special Education
The program provides advanced graduate training for professionals in the field of special education. Included are individuals in consultation, supervisory work, and work-study coordination in special education.
In addition to the general graduate admissions requirements listed below, requirements for admission to the program include a master’s degree in special education or equivalent; preparation and certification in special education; and a minimum of one year of full-time teaching experience prior to admission to the program.
The program requires a minimum of 60 semester hours. The flexible plan of study is developed by and under the direction of the student. Degree requirements include written comprehensive examinations and a research paper (7U:395 Educational Specialist Research, 4 semester hours).

Special Education Administration
The E.S. in Special Education Administration is offered jointly with the Division of Educational Administration. Its primary objective is to provide sufficient training and experience to enable graduates to obtain entry-level positions in administration. The career focus of the program is on entry-level administrative positions such as supervisors and assistant directors. Successful completion of the program qualifies students for certification in Iowa to serve as directors of special education (State of Iowa Endorsement 45) and for certification in general school administration (State of Iowa Endorsement 61).
The program requires a minimum of 60 semester hours of credit.
Admission to the program is limited by available resources. Five to eight new students are admitted each year. Admission requirements include a master’s degree and certification in one area of teaching, experience in instruction in exceptional children, and classroom experience as a teacher or equivalent experience.

School Psychology
This E.S. program provides course work and internship training in the areas of education and psychology, preparing graduates to qualify for certification as school psychologists (State of Iowa Endorsement 46).
The program requires a minimum of 60 semester hours.
The plan of study includes courses in psychological foundations, school psychology, and research methods. Degree requirements include written comprehensive examinations and a research paper (7U:395 Educational Specialist Research, 4 semester hours).

Doctor of Philosophy

Special Education
The Ph.D. program in special education prepares students for positions in higher education research and teaching, for curriculum, supervision, research, and administrative positions in state and local educational agencies. The program permits students to study and practice effectively in their area of interest in special education.
Admission requirements for the Ph.D. program include a master’s degree or equivalent and, except for the school psychology program, 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. The plan of study is flexible and varies depending on student background and educational goals. In general, students are expected to pass a general examination in all areas of special education and to be in two areas of specialization. All students are required to pass a background in research methodology. The actual course of study is developed by the student and the academic advisor. Students are required to write a comprehensive examination and complete a doctoral dissertation (7U:403 Ph.D. Thesis in Special Education, 10 semester hours minimum).

School Psychology
The Ph.D. program in school psychology prepares students for positions in higher education research and teaching, and in consultation, supervisory, research, and administrative positions in public and private agencies. The program requires a minimum of 90 semester hours. The plan of study is flexible and varies depending on student background and educational goals.
Course work is chosen from four areas: psychological foundations, psychological foundations, school psychology, and research methods. The course of study is developed by the student and the academic advisor. Students are required to write a comprehensive examination and complete a doctoral dissertation (7U:408 Ph.D. Thesis in School Psychology, 30 semester hour minimum).

Facilities
Special facilities available to students in special education include the University Hospital and the Medical Clinic for the behaviorally disabled, and the University Psychiatric Hospital for children and youth with behavioral disorders.

Financial Aid
A limited number of teaching and research assistantships are available to full-time students in M.A., G.S., and Ph.D. programs. The center for Student Affairs is available to all graduate students.

Courses

7U:231 Introduction to Assessment in Special Education 3 s.h.
Prerequisite: 7U:100 Methods of developing an assessment skill in an area: program placement, program evaluation, and student progress evaluation in behavior modification. Introduction to 7U:237 Measurement. Prerequisite: admission to undergraduate special education program.
7U:311 Teaching Methods Proficiently Retarded 3 s.h.
Methods of developing programs, teaching, and assessing programs in various language arts, reading, social studies, and mathematics. Prerequisites: 7U:131A and 7U:131B.
Engineering is defined by the Accreditation Board for Engineering and Technology as that profession in which knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to use economically, the materials and forces of nature for the benefit of mankind. In short, engineering is the application of science and mathematics to solve problems for society.

The major aim of engineering is the creation of a new process, product, material, or system. This activity demands a high degree of creativity 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, governmental agencies, and private practice.

The College of Engineering has two major responsibilities. The first is to provide high-quality undergraduate engineering programs by maintaining contemporary curricula and laboratories, as well as support services such as academic advising and engineering career counseling.

The second responsibility is to provide graduate education in engineering that lead to the Master of Science in Engineering or Doctor of Philosophy degrees. Graduate education involves intensive research activities of a creative 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.E.) degree in the major fields of biomedical engineering, chemical engineering, civil engineering, electrical engineering, and mechanical engineering, as well as a program leading to the B.S. degree without designation of a major. Programs leading to the Master of Science and Doctor of Philosophy degrees are offered in the fields of biomedical engineering, chemical and materials engineering, civil and environmental engineering, electrical and computer engineering, industrial and management engineering, and mechanical engineering.

Any of the undergraduate programs offered by the College of Engineering may be combined with a program leading to a bachelor's degree in the College of Liberal Arts, an M.B.A. 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 degree program is available through the undergraduate engineering program and the Graduate Program in Urban and Regional Planning in the College of Liberal Arts. These combined degree programs usually may be completed in about five years. In addition, a minor in the College of Business Administration or a minor or minor in any degree-granting departmental or approved programs in the College of Liberal Arts may be combined with any of the undergraduate degree programs offered by the College of Engineering. The undergraduate programs in biomedical, chemical, civil, electrical, industrial, and mechanical engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Undergraduate Programs

Degree Requirements

The Bachelor of Science in Engineering (B.S.E.) degree requires a minimum of 128 semester hours of credit, including satisfaction of the specific requirements of the engineering program as described in the following sections. Candidates for the B.S.E. degree must be enrolled in the College of Engineering for at least the last 30 semester hours, or 46 of the last 60 semester hours, or a total of 90 semester hours. They must have a minimum grade-point average of 2.00 on all college work used in meeting the degree requirement as well as on all work undertaken at The University of Iowa. In addition, candidates must have completed 329.05 Engineering Calculus I and 329.06 Engineering Calculus II, or their equivalents, with a grade of C or better in each course.

Students who wish to be considered for graduation must file an application for degree with the Office of the Registrar before the deadline date during the session in which the degree is to be conferred. Students who do not graduate on the date indicated in the application must file another application for a degree for the next applicable session. Students do not need to be registered to apply for a degree.

Admission Requirements

To qualify for admission to the College of Engineering as a freshman, Iowa resident applicants must have:

- Successfully completed at least four years of English/Language arts; four years of mathematics, which must include at least two years of algebra, one year of geometry, one-half year of trigonometry, and one-half year beyond trigonometry; two years of a single foreign language; three years of natural science; which must include at least one year of chemistry and at least one year of physics; and at least two years of social studies.

- Completed the American College Tests with a composite standard score of 24 or above and a mathematics score of 24 or above in mathematics (or equivalent SAT scores); and

- Rank in the upper one-half of their high school graduating class.

One-half year of a high school computer programming course is highly recommended.

Nonresident freshman applicants must have completed the same high school requirements as required and recommended for resident applicants, and must have:

- Completed the American College Tests with a composite score of 25 or above and a mathematics score of 25 or above (or equivalent SAT scores); and

- Ranked in the upper 10 percent of their graduating class.

Transfer applicants must complete the same high school course 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 or its equivalent, and

- Maintained a cumulative grade-point average of at least 2.2.

Freshmen and transfer applicants who do not meet the foreign language requirement must enroll in a foreign language course for a minimum of four regular semesters in an introductory level foreign language. Students who do not meet the other high school course requirements may be admitted upon special review by the College of Engineering, and may be required to make up deficiencies. Courses taken at The University of Iowa may reduce deficiencies does not count toward engineering.

Fullfillment of the minimum requirements for admission does not ensure admission to the College of Engineering. The college selects those applicants who appear to be best suited for the study and practice of engineering.

Undergraduate Curriculum

The faculty of each engineering program or major has established a set of required and elective courses that must be satisfactorily completed as part of the requirements for a degree in that program. The specific set of courses is known as the curriculum for that program, Electrical Engineering.

The purpose of the curriculum is to prepare students for the practice of engineering in that program.
Understanding the Interrelationships and Importance of Each Stem

Freshman and Sophomore Years

Approximately one-half of the course requirements in each engineering program are common to all the engineering majors. These common course requirements constitute a core program. Most of the courses in the core program are scheduled in the freshman and sophomore years, along with a few program-specific courses. Hence, students may need to make a decision about major engineering interests to pursue, or to change their engineering major through the freshman year with minimal loss of time or credits.

Exceptions to the common freshman year courses are biomedical engineering and chemical engineering both of which require a second chemistry lecture course during the second semester of the freshman year. By careful planning, undecided engineering majors may schedule the common courses and postpone the decision about a major until as late as the end of the third semester. However, because of prerequisite sequencing, such delays may result in an extra semester or a summer session.

The curriculum for each engineering program is listed in the sections devoted to each major in this section of the Catalog.

Freshman Year

The following are freshman year courses that are common to all engineering curricula.

First Semester

- 433 Principles of Chemistry I 3 s.h.
- 163 Rhetoric 4 s.h.
- 22805 Engineering Calculus I 4 s.h.
- 571 Engineering I 3 s.h.
- Humanities or social science elective 3 s.h.

Total 15 s.h.

Second Semester

- 436 Principles of Chemistry Lab I 2 s.h.
- 22806 Engineering Calculus II 4 s.h.
- 454 Math for Engineers 2 s.h.
- 2517 Introductory Physics I 4 s.h.
- 576 Engineering II 3 s.h.
- Humanities or social science elective 3 s.h.

The courses listed above are required of all students in engineering; 414 Principles of Chemistry II is recommended for the second semester for students who are biochemical or chemical engineering majors. Students in these majors usually postpone taking 22806 Calculus for Engineers until the first semester of the sophomore year. Students pursuing a major in industrial engineering should review the social science requirement specified for that major before selecting any social science courses.

The above list of courses that are common for all the engineering majors assumes that entering freshmen qualify for the advanced rhetoric class. 103. Students who do not meet the eligibility requirement for 103 are required to complete the two-course sequence 101-103 Rhetoric, for a total of 8 semester hours. However, only 5 semester hours may be applied toward the degree requirement for rhetoric.

Credits earned for courses below the level of the beginning courses specified in each engineering curriculum appear on the student's grade report and permanent record, but generally are not used to satisfy any elective or required courses for an engineering degree. Examples of courses in this category includes 101 Rhetoric include mathematics courses 228-230, chemistry courses 415-416, and physics courses 204-205.

For undecided engineering majors who want to postpone selecting an engineering major beyond the freshman year, a third semester of courses common to all the majors could include the following.

Third Semester

- 228-41 Differential Equations for Engineers 3 s.h.
- 2618 Introductory Physics II 4 s.h.
- 571 Statics 2 s.h.
- 578 Electrical Circuits 3 s.h.
- 579 Thermodynamics I 3 s.h.

Total 15 s.h.

Students pursuing three semesters of courses common to all majors may encounter a delay in graduation because of scheduling problems for program courses that are offered or that are offered only once a year.

Humanities and Social Sciences Requirements

The goal of the humanities and social science requirements is to provide a more effective preparation for professional responsibilities by integrating humanities and social sciences into the undergraduate engineering curriculum.

Students select, with their advisor's approval, a minimum of 18 semester hours of humanities and social sciences electives with at least 6 in the humanities and at least 6 in the social sciences. In each case, the 6 semester hours usually include a humanities course followed by an advanced level course in the same department. Social science courses in the industrial engineering major are specified. Students selecting a major in this program should consult "humanities and Management Engineering" in this section of the Catalog for their required social sciences courses.

Courses that are primarily mathematical or scientific in nature and those that are designed specifically to develop introductory language skills or speaking, writing, artistic, or music skills are not acceptable as fulfillment of humanities electives even though they are offered through departments listed below.

Humanities electives may be selected from any of the following departments and schools: African-American World Studies;
American Studies; Art History; Classics; Asian Languages and Literatures; Communication Studies; Theatre Arts; Economics; Geography; Political Science; Psychology; Sociology; Journalism and Mass Communication; Social Work; and other departments — have been approved by the curriculum committee of the College of Engineering.

Following an introductory level-course, students select a minimum of three semester hours of advanced (300-level) coursework to secure sufficient depth of knowledge in an elected area of study. This advanced 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 courses do not satisfy any of the humanities requirements unless the courses are at or beyond the second-year level.

Social science electives may be selected from the following departments: Anthropology, Communication Studies, Theatre Arts, Economics, Geography, Political Science, Psychology, Sociology, Journalism and Mass Communication, Social Work, or other departments approved by the curriculum committee of the College of Engineering. To allow for an adequate depth of knowledge in a chosen area of study and following an introductory level-course, students select a minimum of three semester hours of advanced (300-level) coursework. This advanced 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.

Combined Engineering/ Liberal Arts Program

Students may now combine the following two levels: bachelor's degree in a combined program in Engineering and Liberal Arts. Successful candidates are awarded a B.S. (Bachelor of Science in Engineering and Liberal Arts) or B.A. (Bachelor of Arts in Engineering). To be admitted to the Bachelor's or Master's Program in Engineering, students must have completed two years of engineering study, earned a 3.50 grade-point average or better, and indicated their intent to pursue both degree programs simultaneously on a full-time basis. Students selected for admission to the program may be candidates for $10,000 per-semester scholarships while undergraduate, and candidates for $10,000 per-semester fellowships (100 per summer session) while graduate students. The undergraduate scholarships are provided by the College of Engineering and the graduate fellowships by the College of Business Administration.

Admission to the APT program does not guarantee admission to the Graduate College. However, since the undergraduate admission requirements are very high and the undergraduate curriculum demanding, it is anticipated that admitted students will readily qualify for admission to the graduate M.B.A. program upon application. A cooperative education internship experience with industry is arranged for admitted M.B.A. students. This professional employment experience with private industry is considered to be an integral part of the combined degree program. Typically, it is scheduled for the summer session after the completion of the bachelor's degree.

The combined program is designed for upper-level students: no previous courses in business are required. The program consists of nine courses: four fundamental courses, three core courses, and elective courses. The integrated core and elective courses will electives must be completed after students have been admitted to the Graduate College. Foundation courses, however, may be completed while students are enrolled as undergraduates. Engineering students may qualify for a waiver from certain foundation courses by proficiency exam or through equivalent coursework. Engineering students are assigned a major adviser in the College of Engineering. Upon acceptance into the APT program, advisor for the M.B.A. program is provided by the operations coordinator of the College of Business Administration. Coordination of the combined degree program for APT students is provided by the assistant to the dean of the College of Engineering and the associate dean of the College of Business Administration.

Combined B.S. in Engineering/M.B.A. Program

An Accelerated Professional Track (APT) Program has been initiated by the College of Business Administration for superior undergraduate students who want to begin their M.B.A. studies while finishing their engineering degree. Strategically selected coursework may allow such students to complete the bachelor's degree in four years and the M.B.A. degree in the fifth year. Exceptions are students with interest and competence in business administration who may be able to complete the requirements of the M.B.A. program in the fifth year. The accelerated program provides students with a comprehensive education in management, while allowing them to earn a bachelor's degree in engineering. The accelerated program is designed to prepare students for careers in business administration, finance, marketing, and related fields.

The Accelerated Professional Track (APT) Program is designed to provide students with a comprehensive education in management, while allowing them to earn a bachelor's degree in engineering. The program is designed to prepare students for careers in business administration, finance, marketing, and related fields. The program is designed to prepare students for careers in business administration, finance, marketing, and related fields. The program is designed to prepare students for careers in business administration, finance, marketing, and related fields.
As with the combined engineering/MBA program, admission to this program does not guarantee admission to the Graduate College, which is required in order to complete the degree requirements in the preceding program. Hence, students in this combined degree program should be aware of the admission requirements for the Graduate College (as listed above) and should be prepared to meet these requirements when they apply for admission to the program sometime before they are completing the B.S.E. degree requirements.

The curriculum is based on the philosophy that planners must develop the theoretical and analytical skills that permit them to identify issues and recommend alternate courses of action to resolve these issues. In addition, planners must develop the professional skills (e.g., report writing, presentations and handlings, computer literacy, team management) that allow them to function effectively in various organizational and policy 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 private issues. The core program is complete. The engineering students in the last two years of the undergraduate program as social science and technical elective courses. Students must earn 15 credits of technical concentration (two areas). All concentrations are organized around public policy themes and require at least 24 semester hours of graduation planning, campus development and environmental study. Students will fulfill these courses in one of the areas of concentration. Students may design two minors. The College of Business Administration, the College of Liberal Arts and Sciences, or another college may be earned by fulfilling requirements established by the college offering the minor. The minor is earned upon completion of the student's senior year.

Two Bachelor's Degrees in Engineering

Recent College of Engineering graduates and current students may earn two bachelor's degrees in engineering. The requirements for the second degree are as follows: at least 20 additional semester hours beyond the requirement of 128 semester hours for the first degree program. The additional semester hours must include all courses required for the second degree, including the senior-level design course sequence of the second degree program as well as any specific social science elective requirements. The technical electives selected for the second degree program must be of a variety and level that permit students to meet, at least, the minimal level of competence usually expected of graduates of that program.

Students must file an academic plan of study, which must be approved by the faculty of the second degree program and submitted to the office of dean, before they may initiate course work in the second degree program. The proposed academic plan of study should include a list of the courses to be taken in the second degree program along with a list of the courses already completed and yet to be completed for the first engineering degree program. The approved plan must be submitted to the office of the dean and placed in the student's permanent file before the student begins course work in the second program. Any changes in the plan must be approved by the student's faculty advisor in the second program and by the dean of the department chair of that program (the college petition form should be used for this purpose) and submitted to the office of the dean for inclusion in the student's permanent file.

Minors

While fulfilling degree requirements in engineering, undergraduate students also may fulfill requirements for a minor in the college of Business Administration, or in another department or program in the College of Liberal Arts and Sciences or another college. The College of Liberal Arts and Sciences is in another college may be earned by fulfilling requirements established by the college offering the minor. A minor of the minor is entered upon completion of the student's senior year.

Students must file the registrar's office a minor fulfillment form (student petition form) when they apply for a degree. This assures that the minor designation is included on their transcript.

Minor in Business Administration

Requirements for a minor are 10 cognate credits. Students may pursue courses in one of two economics courses (GE1 and GE2), two accounting courses (6A1 and 8A2), marketing course (H1A00), a management course (91A00), a finance course (51B00), and a legal environment course (68100). In addition to the required courses, students usually complete a calculus course, a computer course, and a probability and statistics course.

Engineering majors satisfy the mathematics, statistics, and computer science requirements with courses ZM281, ZS7, and 22539. A 2.00 grade-point average in courses applicable to the minor is required. Students who want to complete a Master of Business Administration degree later should take courses that satisfy M.B.A. requirements.

Minor in Liberal Arts

Requirements for a minor are a minimum of 15 semester hours in the minor department, at least 12 of which are in advanced courses at The University of Iowa and acceptable to the department. Students should confer with the minor department to identify acceptable courses. Students must achieve a 2.00 grade-point average in the courses applicable to the minor. Courses to be counted toward the minor need not be passed with a grade of B.

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 work periods, but the success of the program depends on the work experience having significant educational value. This is assured by careful monitoring of the work experience provided by participating employers and by matching student interest and ability to the work situation. The insight gained by involvement in the practical application of subject matter studied in the classroom usually results in improved motivation during the study period and a corresponding improvement in academic record. Another important aspect of cooperative education is that, although it is difficult to evaluate, is the increased awareness of the many non-technical considerations involved in any engineering profession.

The co-op phase ordinarily begins during or immediately following the sophomore year and continues until the beginning of the senior year. The total time for the degree program under this option usually is five years and includes the equivalent of at least one full year of work experience. The program is an option available to qualified students on a voluntary basis.

Undergraduate Academic Advising Center

The Undergraduate Academic Advising Center is a University program that helps students who have not selected a major field of study. Students enrolled in this program are students who may be considering engineering as a major field of study, but who are not yet ready to declare a specific major. For help in selecting a program, students are assigned an adviser from the center rather than from a specific department. These students meeting...
frequently and regularly with their assigned adviser for help with various academic matters, ranging from building a schedule of courses for the next semester to receiving counseling on choosing a career. The advisers’ offices are located in the Bierce Library Center. For more information, students may contact the director of the Undergraduate Academic Advising Center, 401 East, The University of Iowa.

Academic Standards

Semester Load Limit
A normal academic load is about 16 semester hours of course work for a semester, 8 semester hours for a summer session. No student may register for more than 18 semester hours in one semester, or 9 semester hours in a summer session, without the permission of the assistant to the dean.

Classification of Students
Students in the College of Engineering are classified by the number of semester hours of credit earned applicable to a bachelor’s degree in engineering, according to the following:
- Freshmen—fewer than 28 semester hours.
- Sophomore—28 to 45 semester hours;
- Junior—46 to 65 semester hours;
- Senior—90 or more semester hours.

Grading System
The college uses a letter grading system with a plus or minus to designate performances below the letters. The numerical equivalents of the letter grades and the plus and minus options are as follows:

<table>
<thead>
<tr>
<th>Grade (definition)</th>
<th>Numerical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
</tr>
<tr>
<td>A (superior)</td>
<td>4.00</td>
</tr>
<tr>
<td>A</td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
</tr>
<tr>
<td>C (average)</td>
<td>2.00</td>
</tr>
<tr>
<td>C+</td>
<td>1.67</td>
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<tr>
<td>D+</td>
<td>1.33</td>
</tr>
<tr>
<td>D (below average)</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.67</td>
</tr>
<tr>
<td>F (failing)</td>
<td>0</td>
</tr>
</tbody>
</table>

The grading system is used for all students in both undergraduate and graduate engineering courses. Grades of D– and passing grades, that is, courses completed with grades of D or better count toward collegiate requirements. Grades of A– have a value of 4.25 in calculating grade-point averages for a student, but the averages displayed in University records will be truncated so they do not exceed 4.00.

Academic Probation and Good Standing
Students enrolled in the College of Engineering who fail to attain the following minimum semester and cumulative grade-point averages based on all work taken at The University of Iowa are placed or continued on academic probation:
- Freshmen—1.80;
- Sophomore—1.90;
- Junior—1.90;
- Senior—2.00.

Students whose semester and cumulative grade-point averages equal or exceed those appropriate to their classification are considered to be in good standing in the college.

Students are removed from, or placed on, academic probation only at the end of a semester. Students are not permitted to register without specific approval following two consecutive approved semesters on probation. Students who have not made satisfactory improvement in scholarship may be dismissed from the college; they may petition the assistant to the dean for permission to re-enroll after an interval of two regular semesters.

Dropping and Adding Courses
Courses may be added with permission of the adviser and the instructor during the first three weeks of the semester or first one-and-one-half weeks of the summer session.

Courses may be dropped with permission of the adviser and the instructor at any time during the first ten weeks of the semester. Only under compelling circumstances may courses be dropped after the tenth week, in which case special permission must be granted by the adviser, the course instructor, and the associate dean. Under no circumstance are students permitted to drop after the beginning of the second week of fall term or first two weeks of the summer session.

Undergraduates receive the mark of W for any course dropped after the third week of the semester or first one and one-half weeks of the summer session. To curtail excessive registration and dropping of the same course, students may not drop the same course with a mark of W more than twice. Special courses that may be repeated are exempt from this rule.

Withdrawal of Registration
Students in good academic standing who withdraw their registration during the final four weeks of a regular semester, or during the final three to two weeks of a twelve- or eight-week summer session, respectively, are not permitted to enroll for the semester immediately following without specific approval from the assistant to the dean. Students on scholastic probation who withdraw their registration at any time without good cause are considered as

having been dismissed for poor scholarship.

Withdrawal of students enrolled in the college are signed by the assistant to the dean only upon recommendation by the student’s adviser and department chair.

Pass/Nonpass Option
A maximum of two courses taken in the colleges of Liberal Arts or Business Administration on a pass/nonpass basis may be applied toward satisfaction of the humanities and social science requirement. Students who wish to pursue such courses in visual arts or business administration pass/nonpass must meet the course and follow the procedures specified by those 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 adviser and instructor must be obtained on the proper form and the completed form must be submitted to the registrar by the student within the time period established by University policy.
- The mark of P (pass) is awarded where the final course grade earned was C- or above; the mark of N (nonpass) is given for grades of D+ or below, marks of P and N are not used in computing the grade-point average and the mark of N does not count as earned hours.
- No course work taken in the College of Engineering on 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 only after the new grade being computed in the grade-point average. This option can be elected only prior to completion of a course for which the repetition is course of a prerequisite. The option may be applied to no more than three courses and it may be applied only once to a given course. Transfer students may apply the option on a predetermined basis. For example, students who transfer no more than 42 semester hours of applicable engineering course work may use this option for a maximum of three courses, while students who transfer between 42 and 86 semester hours of credit may use this option up to no more than two courses, and students who transfer 86 or more semester hours may use this option only one course. Students who want to exercise this option should apply to the assistant to the dean.

Satisfactory/Fail Courses
The noncredit professional seminar courses required in each of the professional programs are offered only satisfactory/fail.
Advanced Placement Program
Students who have completed college-level courses in high school through the Advanced Placement Program (AP®) of the College Entrance Examination Board and have achieved satisfactory scores on the comprehensive examination administered through the Advanced Placement Program are awarded college-level credit. For example, students earning scores of 3, 4, or 5 in an AP Calculus course in the Advanced Placement Program receive 4 semester hours of credit for 22M:35, Engineering Calculus I. Likewise, students earning scores of 3, 4, or 5 in a BC-level calculus course receive 6 semester hours of credit for 22M:36-38 Engineering Calculus I-III. Credit earned through other AP courses may also be applied to other engineering coursework requirements as appropriate to content and level, so long as credit for those requirements has not already been earned through other exams or coursework. Further questions about AP credit 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 several social science topics may be applied to satisfy a portion of the social science requirement. Similarly, up to 7 semester hours of credit in the general and/or separate subject exams in the humanities may be applied to satisfy a portion of the humanities requirement. However, no more than a total of 10 semester hours of credit earned through CLEP may be applied to the total humanities and social sciences requirements for engineers.

Credit earned on other CLEP subject exams also may be applied to meet other course requirements as appropriate to content and level on a nondisparate basis. Questions 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 other than that for which college registration has been completed may be granted the opportunity to obtain credit toward graduation by examination. For example, credit for an engineering core course may be earned by achieving a satisfactory test score on a comprehensive exam similar to a final exam for that course. Conditions and limitations of this policy are established by the faculty of the College of Engineering. Students who want to apply for such an examination should contact the assistant to the dean.

Credit by Validation
Students with course credits obtained at an unaccredited institution may request validation of the credit up to a maximum of 12 semester hours. Credit by validation may be granted after the student has been completed at least 24 semester hours of coursework at The University of Iowa that includes appropriate courses for which the work to be validated is 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 at other colleges or universities. When students apply for articulation to the College of Engineering, they must submit official transcripts from each college attended along with their application for admission. After the transcript has been certified by the Office of Admissions as college-level work from an accredited institution and after admission has been granted, the credit is evaluated by the assistant to the dean either prior to or during the student's first semester of enrollment in the college.

Satisfaction of engineering course requirements by transfer course work may be approved by the assistant to the dean if, on a course-by-course basis, there is a match in 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 or 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 enrolling in a transfer program. The College of Engineering does have recommended courses for community colleges and some four-year colleges. The course lists are available by contacting the assistant to the dean. Once students are enrolled in College of Engineering courses, all course work they have taken at other institutions must be presented to the assistant to the dean for credit in it is to be applied to the engineering degree requirements.

Course Substitutions
For students in the College of Engineering, the selection of an alternate course for a required course requires the approval of a petition. The petition form is available in the office of the dean. The petition must be completed by the student and approved by the student's advisor and the chair of the academic department in which the student is majoring.

If the petition involves a required engineering core course, then it must also be approved by the associate dean who acts in behalf of the college curriculum committee. Substitutions for required engineering core courses should occur in appropriate circumstances. Substitutions of courses that are required by the student's department major are governed by the
first should attempt to resolve the issue with the faculty member. Lacking a satisfactory outcome, the student should discuss the matter with the chair of the faculty member’s department.

Students who are uncomfortable dealing directly with a faculty member or a department chair may seek assistance from the faculty member’s department. Students who are not satisfied with the outcome of this procedure, they should discuss their complaints with the dean of engineering.

Student Organizations and Activities
The College of Engineering student body is organized as the Associated Students of Engineering. This organization provides a mechanism for planning and carrying out activities involving the entire college, such as the student and faculty picnics, the homecoming corn roast, McCarthy, and sponsorship of a nationally prominent speaker during National Engineers’ Week. The organization also acts on college matters of general student interest.

Engineering students publish their own student journal, Javalky Engineer. All positions are staffed by students, with faculty serving only in an advisory capacity.

The following technical societies are represented by the University of Iowa student chapters: American Institute of Chemical Engineers, Institute of Industrial Engineers, Society of Computer Simulation, American Society of Civil Engineers, American Society of Mechanical Engineers, and Institute of Electrical and Electronic Engineers.

A student club of the Society of Automotive Engineers is open to all engineering majors, and a student society of biomedical engineers, which is formally recognized by the University, is open to biomedical engineering majors. The UI chapter of Tau Beta Pi, a national honorary society for students in all engineering fields, gives special recognition to superior students in their junior and senior years. Senior and graduate engineering students who have special ability in research are eligible for election to Sigma Xi. The work of students who are outstanding in their respective fields is recognized by Alpha Eta Mu Beta, honorary biomedical engineering society; Phi Lambda Upsilon, honorary chemical and chemical engineering society; Omega Chi Epion, honorary chemical engineering society; Chi Epion, honorary civil engineering society; Eta Kappa Nu, honorary electrical engineering society; Alpha Phi Mu, honorary industrial engineering society; Pi Tau Sigma, honorary mechanical engineering society.

Student organizations dedicated to providing support and assistance in the development of more equitable enrollments of minorities and women in the college are the 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 the state. The minimum requirements include graduation from an accredited engineering curriculum of at least four years, followed by at least two years of practical experience.

In Iowa the agency that controls and monitors the licensing procedure is the Iowa Board of Examiners. The first step is the procedure for students enrolled in an accredited program to pass an examination on engineering fundamentals given at the University near the time of graduation. (Graduates of unaccredited programs must complete at least one year of professional experience to be eligible to take the engineering fundamentals exam.) Following graduation and the successful completion of the engineering fundamentals exam, graduates receive an Engineer-in-Training (EIT) certificate. The first step in the procedure is to pass the advanced exam in a specialty area following a minimum of four years of approved professional experience. At this point, the student engineer is registered "Professional Engineer."
approximately 100 Apollo Computer engineering workstations. Each of these is a powerful computer joined with a high-resolution video display for graphics applications. The Apollos are tied together by a high-speed network, allowing all stations to share common data, programs, and peripheral devices.

The Apollos 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 Weeg Computing Center facilities, or be used to access national computer networks. A variety of printers, plotters, and other specialized devices are available through the IAEN system.

Software supported by IAEN includes several programming languages as well as graphics and word processing facilities. Also available is a number of contemporary 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.

IAEN 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 IAEN. The Howard J. Elder Laboratory for Engineering Computing, located on the fourth floor of the Engineering Building, houses 20 Apollo workstations and 20 Macintoshs, together with printers, plotters, and other related equipment. A second, functionally identical facility is located on the third floor. A third student facility, which serves to support more advanced applications, is located on the first floor.

Small workstation clusters for software and course development work are located in each of the major engineering departments. Remote clusters are located in the chemical engineering department in the Chemistry-Botany Building and in the Hydraulic Engineering Laboratory of the Iowa Institute of Hydraulic Research.

Computer Services

In addition to local facilities provided by IAEN, services of the Weeg Computing Center are available to students and faculty of the college. Access to Weeg facilities is available at student computing laboratories in the college. The Center for Computer-Aided Design and the High-Speed Computing Facility housed in the College of Engineering include an Alliant FX/8 supercomputer, an ECL processor Encore Multimax parallel processor, and a VAX 11/780 minicomputer with a high-speed array processor, and extensive graphics equipment for research in computer-aided design.

The electrical and computer engineering department has two VAX 11/780 microcomputers and several color graphics workstations for teaching and research. In addition, a number of minicomputers and microcomputers are available within the college for specialized use by students and faculty.

Employment Placement Services

The Engineering Placement Office is a resource and service center for students and alumni who are seeking professional employment. Services provided to graduating students include on-campus interviews, job listing, information, and assistance with resumes, cover letters, interview techniques, resumes, and general advising relative to career decisions.

Major resources available to all engineering students and alumni include a comprehensive employer information library, directories of employers specifically seeking to hire engineers for full-time and summer positions, current data on initial salaries and starting salaries, and placement data on recent graduates. The Engineering Placement Office, with interview rooms and a resource area, is located on the third floor of the Engineering Building.

Organization of the College

The College of Engineering is organized into six departments and three research units. The six departments are biomedical engineering, chemical and materials engineering, civil and environmental engineering, electrical and computer engineering, industrial and management engineering, and mechanical engineering. Each department offers undergraduate and graduate degree programs. In addition to the departmental degree programs, the college offers an undergraduate undergraduate degree program for students who wish to tailor a special program that may not be available through the traditional majors. Information about each of the degree programs follows in later sections.

The three research units are the Iowa Institute of Hydraulic Research, the Center for Materials Research, and the Center for Computer-Aided Design. Descriptions of these units follow.

Iowa Institute of Hydraulic Research

The Iowa Institute of Hydraulic Research (IHR) has been widely acknowledged for many years to be an international leader in numerous areas of hydraulic engineering and fluid mechanics. It was organized formally in 1931 to coordinate capabilities, facilities, and resources available at the University for research on problems in engineering hydraulic and hydrology, and soon broadened its scope of activities to include fluid mechanics. Active programs of basic and applied engineering research are conducted at IHR in five major well-equipped laboratories with total floor space exceeding 72,000 square feet. Programs currently being pursued in the following areas: sediment transport mechanics, new engineering; siting engineering; hydraulic structures; pump and power-plant intakes; water resources simulation; computational fluid dynamics; and water quality dynamics.

High-level involvement of graduate students is a hallmark of most IHR projects. Because it is a unit of the College of Engineering, and because it is heavily involved in fluid engineering for industry and broad-based fundamental research programs, the IHR provides advanced-degree students and postdoctoral trainees with unique opportunities for valuable research and educational and engineering experiences.

Center for Materials Research

The Center for Materials Research was founded on the philosophy that technologies of the future require the integration of a variety of disciplines in order to transcend traditional methods of research and development.

The center has a strong focus on programs of fundamental and applied research in biomedical engineering, with particular emphasis on biomechanics and biomaterials. Sponsored projects include traumatic head and spinal injuries, biomaterials for orthopedic prosthetic heart valves, bone and ligament biomechanics, and total joint replacement, pulsed electromagnetic effects on tissue, vibration-related theta and biochemical image analysis and processing. Graduate and undergraduate student participation in interdisciplinary research and development is encouraged and supported by the center. The faculty members of the center also engage in numerous consulting activities for industry, government, and other universities.

Center for Computer-Aided Design

The Center for Computer-Aided Design was founded to enhance research and development of design methods using modern computer technology. In 1987, it was designated by the National Science Foundation as an Industry University Cooperative Research Center for Simulation and Design Optimization of Mechanical Systems.
Course Numbering System

The title of each course offered by the College of Engineering is preceded by a two-digit prefix and a three-digit suffix separated by a space.

1. Biomedical engineering
2. Chemical and materials engineering
3. Civil and environmental engineering
4. Electrical and computer engineering
5. Industrial and management engineering
6. Engineering core
7. Mechanical engineering
8. Two- or three-digit suffix of a course number identifies the level and type of course. Generally the suffix numbers below 100 designate courses primarily for undergraduates, numbers 100 to 199 designate courses for undergraduates and graduates, and numbers 200 and above designate courses primarily for graduates. The table below provides a more detailed listing of course numbers and the information they convey about level and type of course.

1-5: Freshman core courses
1-9: Sophomore core courses
28-29: Junior core courses
39-95: Required courses in undergraduate programs
91-94: Undergraduate professional program seminars
95-97: Contemporary topics courses for undergraduates
98-100: Individual investigation courses for undergraduates
101-109: Courses for which little or no engineering, science, or mathematics background is required
110-189: Undergraduate elective or lower-level graduate courses
190-219: Reading courses for nonmajors
191-214: Seminars for undergraduates and graduates
195-217: Contemporary topics courses for undergraduates
198-218: Individual investigations for graduates
199-219: M.S. thesis research
220-269: Upper-level graduate courses
261-264: Seminars for graduates
255-297: Contemporary topics courses for graduates
290-99: Ph.D. dissertation research

The courses offered by each department are listed in the department's section by discipline area, starting with the lowest level course and proceeding to the highest level course. A brief description is included for each course. The prerequisites and corequisites noted in each course description are given in terms of the courses offered at this University. Students who do not meet these requirements but who have earned equivalent course work from another institution should consult the course instructor if they have questions concerning their preparation for the course. Such students must obtain the instructor's consent before registering for the course.

Engineering students may enroll in any course in the College of Engineering if they meet the course prerequisite and corequisite requirements. Undergraduate nonmajors may enroll in engineering courses only by consent of the assistant to the dean. Consent for enrollment in an engineering course is based on space available as well as on whether the student has the mathematics, science, and engineering course background considered necessary to satisfactorily undertake the course.

Engineering Core Courses

All of the undergraduate engineering curricula, when detailed in the following sections, build upon a core program as described in the earlier section entitled "Undergraduate Curriculum." Course descriptions follow for those courses of the core program that are offered through the College of Engineering.

Not all of the following courses are required for each engineering major. Course requirements in a specific major are given in the curriculum listing in the section for that major. Where necessary, all of the following courses are available to nonmajors unless special permission is obtained from the assistant to the dean.
BIOMEDICAL ENGINEERING

Chaoon Yu, Ph.D.
Professor
Richard A. Brand, Thomas D. Brown, Alan S. Green, Alan J. Lain, K. Yung Lim, Soon P. Park, Kanen Min
Associate Professor
W. Charles W. Clark, Henry A. Collins, Rajiv K. Gangal, James W. Miasek
Assistant Professor
Claudio L. Dorne, Crystal A. Myers

Graduate degree offered: Ph.D. in Biomedical Engineering
Graduate degrees offered: M.S., Ph.D. in Biomedical Engineering

The past two decades have seen a tremendous growth of technological activity in biology and medicine. As engineers have increasingly become involved with projects in the life and health sciences, there has been a greater need for them to become more familiar with the fields of biology and medicine. Recognition of this need has led to the emergence of a new interdisciplinary engineering activity designed to bridge the gap between the life sciences and engineering—the biomedical engineering profession.

Students who complete this program may pursue career opportunities in industry (the design and development of biomedical instrumentation, diagnostic aids, life support systems, prosthetic and orthotic devices, main-machine systems), in government (Veterans Administration, National Institute of Health, Environmental Protection Agency, Food and Drug Administration), or may elect to continue their formal education in the engineering, medical, or legal professions.

Several engineering college faculty members have joint appointments in the College of Medicine, Both biomedical engineering undergraduates and graduate engineering students participate actively with college faculty members and their colleagues in the life and health sciences on projects of mutual interest.

Undergraduate Program

The curriculum outlined below is built on the foundation provided by the College of Engineering core curriculum and has been developed to prepare students for the challenges and opportunities associated with careers in the biomedical engineering profession. The program has been carefully designed to enable students to satisfy the entrance requirements of the University College and, with the selection of a three-course sequence in organic chemistry in the elective courses, the College of Medicine.

Curriculum

*The humanities and social science electives must be selected to satisfy the humanities and social science requirements of the College of Engineering.

Freshman Year

First Semester
413 Principles of Chemistry I 3 a.h.
103 Introductory Physics I 4 a.h.
22M45 Engineering Calculus I 4 a.h.
575 Engineering I 3 a.h.
*Humanities or social science elective 3 a.h.
Total 17 a.h.

Second Semester
414 Principles of Chemistry II 3 a.h.
104 Principles of Chemistry Lab I 2 a.h.
22M36 Engineering Calculus II 4 a.h.
2917 Introductory Physics II 4 a.h.
576 Engineering II 3 a.h.
Total 16 a.h.

Sophomore Year

First Semester
22M40 Matrix Algebra for Engineers 3 a.h.
22M41 Differential Equations for Engineers 3 a.h.
2918 Introductory Physics II 4 a.h.
373 Principles of Animal Biology 3 a.h.
577 Statics 2 a.h.
Total 16 a.h.

Second Semester
22542 Vector Calculus for Engineers 3 a.h.
578 Electrical Circuits 3 a.h.
579 Thermodynamics I 3 a.h.
5710 Dynamics 3 a.h.
7254 Biomedical Engineering Physiology 4 a.h.
Total 16 a.h.

Junior Year

Fall Semester
5117 Computers in Engineering 3 a.h.
5718 Principles of Electronic Instrumentation 4 a.h.
5140 Biological Systems Analysis 1 4 a.h.
Engineering science core elective (see "Engineering Science Core Electives," below) 3 a.h.
*Humanities or social science elective 3 a.h.
5150 Professional Seminar 3 a.h.
Biomedical Engineering 0 a.h.
Total 15 a.h.

Spring Semester
5220 Probability and Statistics for the Engineering and Physical Sciences 3 a.h.
5719 Engineering Biological Sciences 3 a.h.
5720 Principles of Design 3 a.h.
5170 Biomechanics I 4 a.h.
5180 Biomedical Measurements I 3 a.h.
5190 Professional Seminar 3 a.h.
Biomedical Engineering 0 a.h.
Total 16 a.h.

Senior Year

Fall Semester
5185 Biomedical Engineering Systems Design 3 a.h.
Biomedical engineering design elective (see "Biomedical Engineering Electives," below) 3 a.h.
Biomedical engineering science elective (see below) 3 a.h.
Biomedical engineering elective (see below) 3 a.h.
*Humanities or social science elective 3 a.h.
5190 Professional Seminar 3 a.h.
Biomedical Engineering 0 a.h.
Total 16 a.h.

Spring Semester
5186 Biomedical Engineering Design Project 4 a.h.
Biomedical engineering electives (see below) 5 a.h.
*Humanities or social science elective 3 a.h.
5190 Professional Seminar 3 a.h.
Biomedical Engineering 0 a.h.
Total 15 a.h.

Engineering Science Core Electives

Students select one of the following courses:
5112 Linear Systems Analysis 3 a.h.
5715 Materials Science 3 a.h.
5170 Mechanics of Deformable Bodies 3 a.h.
5720 Mechanics of Fluids and Transfer Processes 3 a.h.
Biomedical Engineering Electives
A total of 48 semester hours must be chosen with at least one course from biomedical engineering design electives and one (3 semester hours) from the biomedical engineering science electives. The list is as follows.

Biomedical Engineering Design Electives
55.22 Introduction to Digital Design
55.23 Introduction to Software Design
55.84 Principles of Electrical Engineering Design I
57.22 Principles of Design II or other equivalent design courses.

Biomedical Engineering Science Electives
51.40 Biological Systems Analysis I
51.48 Biomedical Computer Systems
51.156 Biomaterials
51.155 Intermediate Mechanics of Deformable Bodies
51.155 Cardiovascular Biomechanics
51.140 Biocomputational Processes
51.120 Biocomposites I
51.172 Polymers as Biomaterials
51.172 Metals as Biomaterials
51.174 Ceramics and Glasses as Biomaterials
51.157 Composite Materials
11.80 Biomedical Measurements I
50.123 Fluid Dynamic Techniques in Engineering I
55.145 Absorption and Systems
55.146 Digital Image Processing
55.164 Computer-Based Control Systems
58.47 Thermodynamics II
59.03 Heat Transfer
58.143 Intermediate Heat Transfer
58.146 Intermediate Mechanics of Fluids

Other Acceptable Biomedical Engineering Electives
Organic Chemistry I
Organic Chemistry II
Organic Chemistry Lab
Genetics and other biological science courses

Biomedical Engineering Subtracks
Biomedical engineering majors are encouraged to pursue one of the following three subtrack curricula.

Biomechanics/Fluids
Fifth Semester
57.19 Mechanics of Deformable Bodies
57.20 Mechanics of Fluids and Transfer Processes

Seventh Semester
57.32 Principles of Design II, or equivalent
51.155 Intermediate Mechanics of Deformable Bodies

58.140 Intermediate Mechanics of Fluids

Eighth Semester
Two courses chosen from:
51.195 Cardiovascular Biomechanics
51.140 Biocomputational Processes
51.172 Polymers as Biomaterials
51.172 Metals as Biomaterials
51.174 Ceramics and Glasses as Biomaterials
51.157 Composite Materials

Bioelectrical
Fifth Semester
51.158 Linear Systems Analysis

Seventh Semester
55.32 Introduction to Digital Design
55.42 Signals and Systems
55.143 Biomedical Computer Systems

Eighth Semester
Two courses chosen from:
51.140 Biological Systems Analysis II
51.146 Biomedical Measurement II
55.32 Introduction to Software Design
58.34 Principles of Electrical Engineering Design I
55.146 Digital Image Processing
55.164 Computer-Based Control Systems

Graduate Programs
The goal of graduate study at both the M.S. and Ph.D. levels is to educate students in the disciplines of biomedical engineering, more deeply and broadly than is possible at the M.S. level. The graduate student is to enable students to use contemporary methods at an advanced level during a professional career in engineering design, development, and research.

Each student's course of study is based on his or her background and career objectives, and sound academic preparation. Department faculty members have teaching and research expertise in areas related to biomechanics, cardiovascular and fluid biomechanics, biotissue engineering, and other allied fields.

An individual program for each student may be developed from courses offered by the biomedical engineering department and other departmental faculty, including biomedical engineering, electrical engineering, physics, mathematics, and biology. M.S. students who want a more general program may choose electives, while those who want area specialization in any particular field may accommodate these preferences through the combination of departmental courses and appropriate electives from other departments of the College of Engineering and the University.

Ph.D. programs may center on any one of the previously described areas through the choice of appropriate course work and research topics.

Master of Science
The M.S. degree in biomedical engineering requires a minimum of 30 semester hours of course work and research. Students may choose either a thesis or nonthesis program; the latter must include at least 6 semester hours of 600-level courses. Students who choose the thesis program may receive from 6 to 12 semester hours of credit for thesis research and writing toward satisfying the 30-semester hour limit. Either degree may be a terminal degree or an intermediate step toward a Ph.D. degree.

A tentative plan of study for each student is determined through consultation with an advisor. As a M.S. committee of at least three graduate students, including at least one on the biomedical engineering faculty, appointed by the dean of the Graduate College, the student's plan of study is reviewed by the committee before the student has completed 18 semester hours of course work. The plan of study is then submitted for review to the department chair.

To earn the M.S. degree, students are required to attain a minimum grade-point average of 3.00 or a minimum of 30 semester hours of course work and successfully complete the final examination administered by their committee.

The requirements for the M.S. degree may be completed within a calendar year. However, students with satisfactory duties and/or other commitments may need up to two calendar years to complete the degree.

Candidates for either the M.S. degrees must have satisfactorily completed the following courses or their equivalents as undergraduates or graduates.

51.130 Mathematical Methods in Engineering
51.150 Biocellular Engineering Lab
21.154 Biocellular Engineering Physiology

Two biomedical engineering courses chosen from any two of the Biocellular, Biomechanics, and Biostatistics areas (the acceptable course(s)) in each area are listed below.
Doctor of Philosophy

The doctoral program, including acceptable transfer credits, requires a minimum of 72 semester hours of graduate work. Of these 72 hours, at least 60 semester hours must be in formal course work taken after the B.S. degree is awarded, and at least 12 semester hours must be in research and thesis credits. Students entering with an M.S. degree, at least 24 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.

Admission to the Ph.D. program is conditional until students successfully complete a qualifying examination, which is administered by the Biomedical engineering faculty. The decision on whether the student's performance on this examination is adequate for admission to the Ph.D. program is made by the Biomedical engineering faculty.

Admission to Ph.D. candidacy requires a minimum grade-point average of 3.35 on at least 24 semester hours of graduate course work specified in the plan of study, with the grade-point average computed above, and upon the advisor's recommendation. Students are admitted to the comprehensive examination by their committee.

Having satisfactorily completed these examinations, students usually have the opportunity to complete and defend their dissertation at the final examination. Requirements for the Ph.D. degree generally can be completed in about three years beyond the master's degree.

Admissions and Financial Assistance

Students who have earned a baccalaureate or postbaccalaureate degree in an engineering curriculum or a curriculum in the mathematics or physical sciences, with a minimum grade-point average of 3.00 and an acceptable score on the Graduate Record Examination (GRE) Aptitude Test (combined verbal and quantitative score of 1290) are eligible to be considered for admission to the Master of Science degree study in biomedical engineering. Students may, under exceptional circumstances, be considered for conditional admission with a lower grade-point average and GRE Aptitude Test scores. Students, conditional status must achieve regular status within 24 semester hours of initial registration by attaining a grade-point average at The University of Iowa of at least 3.00 and regular acceptance by the department faculty. Students who do not meet these requirements are advised to consider a graduate certificate.

Reference letter, students 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 Biomedical Biomedical and Biomedical Measurements I.

The Biomedical Laboratory is equipped for testing the mechanical thermal properties of biomaterials and thin sectioning of hard tissues and prostheses for histology. This laboratory also is used for BIOM 51, 172 Polyurethanes, BIOM 51, 173 Metals vs Bioceramics, and 51, 174 Ceramics and Glasses as Biomaterials.

The Biomedical Measurements Laboratory is equipped for measuring biomechanical variables of clinical and physiological interest and for designing electronic instrumentation. This laboratory also is used for BIOM 51, 180 Biomechanical Measurements II.

Research Facilities and Laboratories

Applied Mechanics Laboratory

The Applied Mechanics Laboratory is equipped to study the mechanics of small bone specimens under dynamic loading conditions.

Biomaterials Laboratory

The Biomaterials Laboratory is equipped to test mechanical thermal properties of biomaterials and thin sectioning of used tissues and prostheses for histology.

Hemodynamics Laboratory

The Hemodynamics Laboratory is equipped to study cardiovascular fluid dynamics, particularly flow past prosthesis and flow in the human aorta. In addition, there is a laboratory equipped for imaging processing system, based on the NIH's computer with a Goodrich 178480 image processor with video camera digitizer.

Biomechanics Laboratory

The Biomechanics Laboratory is equipped to study the biomechanics of head and neck trauma, lumbar spine, and the effect of vibration on the spine.

Biomechanical Image Processing and Computing Laboratory

This laboratory has EYECOM image processing system used to digitize anatomical slides of X-rays, CT scans, and CAT scan images with a resolution of 640 x 480 pixels and able to distinguish 256 colors.

Biostatistics Laboratory

The Biostatistics Laboratory is equipped to conduct physiological experiments on the cardiovascular and respiratory systems.

Courses

5106 Cooperative Education Training Seminar: Biomedical Engineering 0.0

Biomedical engineering students participating in the Cooperative Education Program register for this course during assigned periods. Registration requires a written agreement that is signed by the employer, the department's academic advisor, and the student. Prerequisite: admission to the Cooperative Education Program. Offered in even-numbered years as necessary.

5107 Biomedical Systems Analysis 3.0

Concepts of control theory analysis to understand the behavior of both external and internal human systems. Systems analysis and design. Computer-aided simulation and analysis. Applications to clinical and industrial systems. Offered every semester. Prerequisite: ECE 4588.

5109 Biostatistics 4.0

Properties, computational methodology, and statistical methods of clinical and preclinical investigations. Offered spring semester. Prerequisite: ECE 4588.

5115 Biomedical Measurements I 3.0

Concepts of measuring and signal processing, with emphasis on an understanding of the fundamentals of medical image processing, the acquisition and analysis of medical images. Essential characteristics and current applications of medical image processing. Offered even-numbered years. Prerequisite: BIOM 4400 or consent of instructor.

5116 Biomedical Engineering Research Design 3.0

Design of experiment, statistical methods, and analysis of research data. Prerequisite: BIOM 5115, or consent of instructor.

5117 Biomedical Engineering Design Project 4.0

Project to be selected and designed, involving clinical problems in biomedical engineering. Projects are selected by the individual's research interests and faculty availability. Offered fall semester. Prerequisites: BIOM 5115 and BIOM 5109.

5141 Professional Seminar: Biomedical Engineering 1.0

Professional seminar in biomedical engineering presented in a forum to include discussion and discussion by guest speakers.
**Curriculum**

*The humanities and social science electives must be selected to satisfy the humanities and social science requirements of the College of Engineering.*

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
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</thead>
<tbody>
<tr>
<td>10.3 Statics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>14.13 Principles of Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22.53 Engineering Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>57.5 Engineering I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><em>Humanities or social science elective</em></td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>28.17 Introductory Physics I</td>
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<td>44.16 Principles of Chemistry II</td>
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</tr>
<tr>
<td>44.15 Principles of Chemistry Lab I</td>
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<td>22.53 Engineering Calculus II</td>
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</tr>
<tr>
<td>57.6 Engineering II</td>
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### Sophomore Year

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>44.12 Organic Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>24.40 Macros Algebras for Engineers</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>24.44 Differential Equations for Engineers</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>24.19 Introductory Physics II</td>
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<tr>
<td>57.7 Statics</td>
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<td><em>Humanities or social science elective</em></td>
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</thead>
<tbody>
<tr>
<td>44.12 Organic Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44.11 Organic Chemistry Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>24.57 Elementary Numerical Analysis</td>
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</tr>
<tr>
<td>57.1 Processes Calculations</td>
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</tr>
<tr>
<td>5.8 Electrical Circuits</td>
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### Junior Year

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<tbody>
<tr>
<td>45.11 Physical Chemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>52.42 Momentum Transport</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>52.43 Chemical Engineering Thermodynamics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>57.15 Materials Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>57.13 Engineering Biological Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>59.1 Professional Seminar: Chemical Engineering</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>44.12 Physical Chemistry II</td>
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</tr>
<tr>
<td>44.11 Physical Chemistry Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22.29 Probability and Statistics for the Engineering and Physical Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>52.14 Mass Transfer Operations</td>
<td>3 s.h.</td>
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<tr>
<td>52.46 Real Transport</td>
<td>2 s.h.</td>
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<tr>
<td>52.41 Professional Seminar: Chemical Engineering</td>
<td>4 s.h.</td>
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<tr>
<td>57.21 Principles of Design I</td>
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### Senior Year

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<tbody>
<tr>
<td>52.45 Chemical Reaction Kinetics</td>
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</tr>
<tr>
<td>52.85 Process Dynamics and Control in Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>52.27 Unit Operations Laboratory I</td>
<td>3 s.h.</td>
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<tr>
<td>51.74 Engineering Economy</td>
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<tr>
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<tr>
<td>Technical elective</td>
<td>3 s.h.</td>
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<tr>
<td>52.91 Professional Seminar: Chemical Engineering</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>52.48 Unit Operations Laboratory II</td>
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<tr>
<td>52.86 Chemical Engineering</td>
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<tr>
<td><em>Process Design</em></td>
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</tr>
<tr>
<td>Technical elective</td>
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</tr>
</tbody>
</table>

### Graduation Programs

The Department of Chemical and Materials Engineering offers curricula leading to the Master of Science and Doctor of Philosophy degrees. Through course work and research, students gain an understanding of the principles of engineering science and then apply these principles to contemporary problems such as energy, environment, biotechnology, and materials. The emphasis is on research since most opportunities for graduates are in research and development. A thesis is required for each degree.

All candidates in advanced degree programs are required to assist faculty members in teaching and research as part of the graduate training.

### Research

Current research strengths of the Department of Chemical and Materials Engineering are in the areas of catalysis and reactor design, environmental contamination, particulate material processing sciences, separation science, Supercrcoating, and biotechnical engineering.

### Catalysis and Reactor Design

Within the general field of kinetics, catalysis, and reaction engineering, research is being conducted in the areas of heterogeneous, homogeneous, and multiphase catalysis; gas-solid reactions; modeling and analysis of heterogeneous reactors, and design of novel reactor separators.

### Environmental Communication

Contaminants of the environment in which we live presents a major problem facing today's engineers. The Department of Chemical and Materials Engineering has had an active research program in the environmental stress of atmospheric air pollution, indoor air pollution, and hazardous waste. Particular emphasis is placed on the chemistry and physics of local, regional, and global air pollution problems. Research in support of this activity includes high speed computing and detailed sensitivity analysis.

### Particulate Material Process Comfortance

Theoretical and experimental studies in morphological analysis of particulate materials are being conducted. Morphological analysis is concerned with the measurement of particle size, shape, and density.
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 complete at least 32 semester hours of credit over a period of three to four years. At any time after admission, a graduate student may elect to terminate pursuit of the degree by filing an official request for withdrawal. All requirements for the doctorate must be completed within six years of the original date of admission.

Admission

All applicants must submit a complete application and a letter of recommendation. Applicants should have completed at least one year of undergraduate study in the field of mathematics. The minimum entrance requirement is a bachelor's degree with a major in mathematics or a closely related field. Any undergraduate work must be at a level comparable to that of the upper-division courses offered at the University of Illinois. Students who do not meet these requirements may be admitted on a provisional basis.

Doctorate: A minimum grade-point average of 3.00 is required for admission to the program.

Financial Aid

A number of fellowships, assistantships, and scholarships are available to graduate students in the department. These are awarded on a competitive basis.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

Materials Science Laboratory

The laboratory is equipped with optical microscopes and facilities for x-ray diffraction and infrared spectroscopy. It also contains a computer-controlled vibratory testing machine, a rheometer, and a scanning electron microscope. The laboratory includes a microcomputer with access to the university's mainframe computer. The laboratory is open to both undergraduate and graduate students.

Required Course Laboratories

Unit Operations Laboratory

This laboratory is primarily used for undergraduate courses in heat and mass transfer, fluid dynamics, chemical engineering unit operations, and reaction kinetics and catalysis. The laboratory includes a large-scale equipment and a smaller-scale apparatus for teaching purposes.

Facilities and Laboratories

The department's computer facilities include a variety of graphics terminals, printers, and minicomputers. The terminals connect to the university's computer network, which provides access to the university's mainframe computer. The laboratory is open to both undergraduate and graduate students.
Surface Science and Catalysis Facilites

A variety of equipment is available for the study of catalytic. Techniques currently available include chemisorption and peak resolution (BET), mass spectrometer, reaction system, X-ray photoelectron spectroscopy, laser induced electron spectroscopy (LEEM), and electron spectroscopy for chemical analysis (ESCA). The University's facilities are equipped with a wide variety of high-quality, state-of-the-art tools for the study of catalysis. These include a scanning electron microscope (SEM), a transmission electron microscope (TEM), a variety of Raman spectrometers, and a variety of gas chromatographs.

Materials Characterization Facilities

These facilities include a unique equipment laboratory for a variety of materials characterization instruments. The laboratory includes a wide range of materials characterization equipment, including a scanning electron microscope (SEM), a transmission electron microscope (TEM), a variety of Raman spectrometers, and a variety of gas chromatographs.

Laboratory of Applied Biocatalysis

This newly created laboratory is dedicated to the study of enzyme, immobilized microbial, and biosensor technologies. The laboratory contains a dedicated HPLC system, including UV and refractive index detectors. Gas chromatography, an infrared spectrophotometer, several gas chromatographs, a mass spectrometer, a scanning electron microscope, a scanning electron microscope, and a variety of calorimeters set up for biocatalyst pycnometer.

Courses

Special Courses

- **SC48 Cooperative Education Training** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of cooperative education. The course covers the principles and techniques of cooperative education and the role of the cooperative education advisor. Prerequisite: Easch 26.

- **SC50 Chemical Engineering Thermodynamics** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of chemical engineering thermodynamics. The course covers the principles and techniques of chemical engineering thermodynamics and the role of the chemical engineering advisor. Prerequisite: Easch 26.

- **SC52 Unit Operations Laboratory I** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of unit operations. The course covers the principles and techniques of unit operations and the role of the unit operations advisor. Prerequisite: Easch 26.

- **SC53 Unit Operations Laboratory II** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of unit operations. The course covers the principles and techniques of unit operations and the role of the unit operations advisor. Prerequisite: Easch 26.

- **SC61 Professional Review** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of professional review. The course covers the principles and techniques of professional review and the role of the professional review advisor. Prerequisite: Easch 26.

- **SC62 Independent Investigation** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of independent investigation. The course covers the principles and techniques of independent investigation and the role of the independent investigation advisor. Prerequisite: Easch 26.

- **SC63 Engineering Project Management** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of engineering project management. The course covers the principles and techniques of engineering project management and the role of the engineering project management advisor. Prerequisite: Easch 26.

- **SC64 Modern Experimental Design** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of modern experimental design. The course covers the principles and techniques of modern experimental design and the role of the modern experimental design advisor. Prerequisite: Easch 26.

Mass Transfer

- **MC41 Mass Transfer Operation** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of mass transfer operation. The course covers the principles and techniques of mass transfer operation and the role of the mass transfer operation advisor. Prerequisite: Easch 26.

- **MC52 Equilibrium Flows** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of equilibrium flows. The course covers the principles and techniques of equilibrium flows and the role of the equilibrium flows advisor. Prerequisite: Easch 26.

- **MC53 Diffusion Mass Transfer** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of diffusion mass transfer. The course covers the principles and techniques of diffusion mass transfer and the role of the diffusion mass transfer advisor. Prerequisite: Easch 26.

- **MC54 Trajectories of Impurities** 3.0 h
  Easch 12
  Engineering and Materials Engineering
  This course includes a comprehensive study of the principles and techniques of trajectories of impurities. The course covers the principles and techniques of trajectories of impurities and the role of the trajectories of impurities advisor. Prerequisite: Easch 26.
Curriculum

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>The humanities and social sciences</td>
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</tr>
<tr>
<td>electives must be selected to satisfy the</td>
<td></td>
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<tr>
<td>humanities and social sciences</td>
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</tr>
<tr>
<td>requirements of the College of Engineering</td>
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<tr>
<td></td>
<td>3 s.h.</td>
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<td>Freshman Year</td>
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<tr>
<td>413 Principles of Chemistry I</td>
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<tr>
<td>4265 Engineering Calculus II</td>
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<tr>
<td>455 Engineering I</td>
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<tr>
<td>*Humanities of social science elective</td>
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<tr>
<td>403 Rhetoric</td>
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<td><strong>Total</strong></td>
<td><strong>17 s.h.</strong></td>
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<tr>
<td><strong>Second Semester</strong></td>
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<tr>
<td>416 Principles of Chemistry Lab</td>
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<tr>
<td>4236 Engineering Calculus II</td>
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<tr>
<td>4400 Matrix Algebra for Engineers</td>
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<tr>
<td>2571 Introductory Physics I</td>
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<td>576 Engineering II</td>
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<td><strong>Sophomore Year</strong></td>
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<tr>
<td>24M Vector Calculus for Engineers</td>
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<td>254 Introductory Physics II</td>
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<td>572 Statics</td>
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<td>59 Thermodynamics</td>
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<td><strong>Third Semester</strong></td>
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<td>24M+1 Differential Equations for Engineers</td>
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<td>5715 Materials Science</td>
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<tr>
<td>5719 Mechanics of Deformable Bodies</td>
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<tr>
<td><strong>Junior Year</strong></td>
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<tr>
<td>3710 Mechanics of Fluids and Transfer</td>
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<td>Processes</td>
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<td>3721 Principles of Design I</td>
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<td>Sciences</td>
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<td>3339 Soil Mechanics</td>
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<tr>
<td>5322 Modern Structural Analysis</td>
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<td>5321 Professional Seminar: Civil Engineering</td>
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<td><strong>Second Semester</strong></td>
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<td>5 9 Electrical Circuits</td>
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<tr>
<td>7722 Principles of Design II</td>
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<td>5315 Design of Steel Structures</td>
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<tr>
<td>5731 Principles of Hydraulics</td>
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<tr>
<td>5735 Principles of Hydrology</td>
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<tr>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>

Undergraduate Program

Civil engineering coursework builds on the curriculum and is designed to give students the broad educational background essential to modern civil engineering practice. Electives in the first three years permit greater breadth or more intensive concentration in areas of specialization such as structural and foundation engineering, environmental engineering, engineering geology, and transportation engineering.

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 primary areas of concentration are environmental engineering and science; hydrology and water resources; structures, mechanics, and materials; and transportation.

Research

Environmental Engineering and Science

The environmental engineering curriculum has two basic streams, one engineering and the other applied science. This curriculum maintains a heavy emphasis on interdisciplinary research and academic programs. In addition, other programs and college programs on campus, including the Iowa State University of Agriculture and Oceanography, the Institute of Environmental Engineering and Science, and the course for business, law, and liberal arts. Course work and research permit a general program of study or specialization in any of these areas: water quality, wastewater treatment, or solid and hazardous waste management.
Hydraulics and Water Resources

The hydraulics and water resources curricula are associated with the Iowa Institute of Hydraulic Research, a laboratory that is world renowned. The senior staff members of the Institute are instructors 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 phases of real-world problems. Considerable attention is given to the use of digital computers in non-mathematical modeling and in the acquisition, processing, and use of data.

Water resources curriculum also has ties to the Institute for Economic Research and the colleges in Business, Law, and Liberal Arts.

Structures, Mechanics, and Materials

The structures, mechanics, and materials curricula are directed primarily toward computer-aided structural design, optimization, and mechanics of materials. Special strengths exist in the areas of structural optimization, computational methods, concrete and prestressed concrete structures, steel behavior, and constitutive equations for metals and geotechnical materials. Course work in research in structural design and optimization, dynamics of structures, finite element techniques, soil mechanics, and foundations is available. Mechanics of materials are available.

Transportation

The transportation curriculum includes work in planning, design, construction, and the operation of transportation systems and facilities. Cooperative relationships exist with the basic programs in Urban and Regional Planning and Transportation Studies in the "Urban and Regional Planning" and "Transportation Studies" in the "College of Liberal Arts" section of the Catalog.

Master of Science

The Master of Science programs in civil and environmental engineering are designed to permit further concentration in the areas or areas of the student's choice. Courses 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 credits, with no more than 6 semester hours of credit allowed for the thesis. An additional 3 semester hours are required in environmental or related fields.

Admission

Each curriculum of the program is quite flexible; students may be admitted from all disciplines of engineering as well as from the mathematics 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). In addition to the course work, the minimum grade-point average of 3.20 based upon previous graduate work; Applicants whose grade-point averages are slightly lower are invited to respond regarding admission possibility. A Graduate Record Examination Aptitude Test score of at least 1100 (Verbal and Quantitative) is recommended. Lower GRE Aptitude Test scores are considered if the student can demonstrate academic promise (recommendation letters, grade-point average). GRE Aptitude Test scores are used in admission and financial aid decisions.

Financial Aid

A significant number of research assistantships are available on a variety of research projects, as are a limited number of fellowships. Selection of recipients is made based on scholastic achievement and research potential.

Special Facilities and Laboratories

Undergraduate instruction

Engineering Core

The traditional engineering core in 55.7 Engineering I includes an introduction to the Iowa Computer-Aided Engineering Network (ICAM), which is described under "College Facilities." Students in the course learn word processing on Microvax 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 the Computer-Aided Engineering Laboratory, which is described in the earlier section entitled "College Facilities." For information about laboratories affiliated with core courses coordinated by other engineering departments, see the subsection for each of the departments.

Required and Elective Course Laboratories

53:400 Financial Accounting

The soils laboratory is equipped for determining the classification, soil particle characteristics, soil-water properties, and strength of soils.

53:435 Environmental Engineering

This laboratory course consists of experimentation in the hydraulics, environmental, and structures areas. It is offered as the Hydraulics Laboratory, the Environmental Engineering Laboratory, and the undergraduate Structures/Environmental Materials Laboratory as a survey course with hands-on experimentation.

53:450 Principles of Environmental Engineering

The Environmental Engineering Laboratory and University Water Treatment Plant are used to demonstrate units of operation and processes of water treatment and pollution in environmental chemistry and microbiology.

53:451 Environmental Chemistry Laboratory

The laboratory for environmental chemistry is a part of the Environmental Engineering Laboratory. Standard water and wastewater quality tests are conducted and bench scale unit processes are operated and analyzed.
Graduate Facilities and Laboratories
Environmental Engineering and Science Laboratory

Research in environmental engineering is conducted in the Department's Phillip F. Morgan Laboratory at the Iowa City Municipal Wastewater Treatment Plant, at the Environmental Engineering Laboratory of the University 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 chemistry laboratory, a 10,000-gallon aeration tank, and space for bench and pilot studies of wastewater treatment. The Environmental Engineering Laboratory is equipped for both routine and advanced chemical and biological analyses of water and provides space for both bench and pilot scale studies. The entire 4 million gallons-per-day water plant is especially designed to handle the isolation of treatment operations for study without undue interference with the production and supply of treated water to the city

The Environmental Research Laboratory in the Engineering Research Facility consists of 2,300 square feet of space for water chemistry and microbiology of groundwater pollution and hazardous waste. Three clean room areas may be reached with sufficient time to reach different experimental conditions in the megasecond liter. The laboratory is affiliated with the Center for Health Effects of Environmental Contamination, a cooperative unit of the Colleges of Engineering and Medicine.

Hydraulics and Water Resources Laboratory

The teaching and research functions of the department are closely connected to the research and contractual activities of the Iowa Institute of Hydraulic Research. The institute houses some of the most modern research facilities in the world, including a 330-foot towing tank, several hydraulic flumes and wind tunnels, a hypodermic flow, a two tank, two special low-temperature flow facilities for investigation of low flow patterns, and an environmental hydraulic flume for modelling of atmospheric flow. A, a 10-foot wind tunnel, a computer-controlled data handling system, and a 3,200 cubic foot dome for measuring micro-scale velocity measurements.

Structures, Mechanics, and Materials Laboratory

An optimal design laboratory, a plastics laboratory, a soils laboratory, and a structural design laboratory are available for teaching and research. The optimal design laboratory has a state-of-the-art network-oriented data pool of design data and software. The plastics laboratory is equipped for testing of plastic materials, and the soils laboratory is equipped for testing of soil materials. The structural design laboratory includes a computer-aided drafting, mechanical, and electronic drafting equipment.
Undergraduate Program

The electrical and computer engineering program provides a strong background in basic electrical and computer engineering subjects, physics, and mathematics and allows for concentration in several areas through prescribed elective courses usually taken in the senior year. Students can choose from a variety of courses or areas chosen from courses, computer, communication, electronics, and applied physics.

Curriculum

*The humanities and social science electives must be selected to satisfy the Humanities and social science requirements of the College of Engineering.  
*Professional Seminar must be taken once in the junior year and once in the senior year.

Freshman Year

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<th>Course Title</th>
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<td>ENGG 101</td>
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<td>Principles of Chemistry I</td>
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<td>ENGG 102</td>
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<td>Statics</td>
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<td>Engineering Calculus I</td>
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<td>Principles of Chemistry II</td>
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<td>ENGG 206</td>
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<td>Engineering Calculus II</td>
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Sophomore Year
First Semester
528.41 Differential Equations for Engineers 3 s.h.
529.18 Introductory Physics I 4 s.h.
571.24 Statics 2 s.h.
571.59 Electrical Circuits 3 s.h.
571.97 Thermodynamics I 3 s.h.
Total 15 s.h.

Second Semester
528.42 Vector Calculus for Engineers 3 s.h.
571.32 Linear Systems Analysis 3 s.h.
571.51 Computers in Engineering 3 s.h.
571.81 Principles of Electronic Instrumentation 4 s.h.
*Humanities or social science elective 3 s.h.
Total 10 s.h.

Junior Year
First Semester
225.39 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
553.32 Introduction to Digital Design 3 s.h.
554.21 Electrical Circuits 3 s.h.
554.22 Signals and Systems 3 s.h.
559.91 Professional Seminar: Electrical Engineering 0 s.h.
*Humanities or social science elective 3 s.h.
Total 15 s.h.

Second Semester
553.33 Introduction to Software Design 3 s.h.
554.30 Electromagnetic Systems 3 s.h.
554.60 Control Systems 3 s.h.
554.61 Electromagnetic Theory 3 s.h.
554.64 Principles of Electrical Engineering Design 3 s.h.
Total 15 s.h.

Senior Year
First Semester
557.72 Electrical Engineering Management and Development of the Engineering Profession 3 s.h.
557.95 Principles of Electrical Engineering Design II 2 s.h.
*559.91 Professional Seminar: Electrical Engineering 6 s.h.
Technical electives (see Technical Electives below) 9 s.h.
*Humanities or social science elective 3 s.h.
Total 17 s.h.

Second Semester
2943 Modern Physics 3 s.h.
556.96 Principles of Electrical Engineering Design III 3 s.h.
Technics electives (see Technical Electives below) 9 s.h.
*Humanities or social science elective 4 s.h.
Total 18 s.h.

Technical Electives
Technical electives must include at least two of the following:
55.68 Power Systems Analysis 3 s.h.
55.150 Switching Theory 3 s.h.
55.157 Microcomputer-Based Systems 3 s.h.
55.158 Testing Digital Logic Circuits 3 s.h.
55.159 Design Automation of Digital Systems 3 s.h.
55.145 Power Electronics 3 s.h.
55.142 Introduction to VLSI Design 3 s.h.
55.140 Linear Integrated Electronics 3 s.h.
55.146 Digital Integrated Electronics 3 s.h.
55.146 Digital Signal Processing 3 s.h.
55.146 Digital Image Processing 3 s.h.
55.00 Communication Theory 3 s.h.
55.132 Introduction to Information and Coding Theories 3 s.h.
55.140 Control Theory 3 s.h.
55.144 Computer-Based Control Systems 3 s.h.
55.150 Introduction to Robotics 3 s.h.
55.172 Solid State Physical Electronics 3 s.h.
55.178 Optical Signal Processing 3 s.h.
57.21 Principles of Design I 3 s.h.
57.22 Principles of Design II 3 s.h.

Graduate Programs
Electrical and computer engineering offers courses leading to the Master of Science and Doctor of Philosophy degrees. Theses and non-thesis M.S. programs are available, either in fundamental research or in practical engineering. Excellence in scholarship and research is stimulated by interaction with the faculty throughout the period of graduate study and through programs tailored to the individual needs.

Students select an advisor and, with the approval, plan an individual program bound only by a few broad guidelines imposed by the Graduate College and by the program. Close interdisciplinary ties with other Departments exist both within and outside the College, especially with the Departments of Internal Medicine, Radiology, Physics, Computer Science, Mechanical Engineering, and Biomedical Engineering. The principal areas of concentration are electronics and materials, computer systems, signal and image processing, and control systems and robotics. Each is briefly described here.

Research
Waves and Materials
Plasma physics, electro-optics, neutron optics, optical signal processing, and acousto-optics investigations utilize specialized laboratories in both the Engineering Building and Van Allen Hall. Collaborative research with the physics department is directed toward topics in nonlinear plasma physics of a theoretical as well as experimental nature. These topics include plasma confinement and stability and nonlinear plasma processes such as turbulence and shocks. A plasma physics laboratory is available to support this activity. An electro-optic laboratory and an ultrasonic facility are used to conduct graduate research in the area of opto-electronics, especially acousto-optics and nonlinear wave phenomena in ultrasonics.

In the area of nonlinear optics, investigations of both an experimental and a theoretical nature are ongoing. There is a laboratory for experimental investigations of the nonlinear optical properties and device applications of various materials. Extensive use is made of the NCSA X-MP11 to conduct numerical simulations of a variety of nonlinear optical problems.

In the area of optical signal processing, projects involve the use of optical data and various light modulators to build special purpose sensing processors for parallel computation and signal manipulation. A small research optical processor is being developed in the optical processing laboratory.

Computer Systems
Future emphasis is directed toward design of highly reliable computer systems, distributed computing, parallel processing, and computer architecture. Areas of interest include multi-processor computing, applications of large scale systems, and parallel processing, coding, VLSI design, computer graphics, optical computers, and neural networks.

This work is supported by departmental facilities including several super-microncomputer systems and a number of graphics workstations, as well as through a network connection to collegiate and University Facilities, including those of the Wisconsin Computing Center and the University High-speed Computing Facility. Network access to National Supercomputer Centers also is used.

Current projects include design of easily testable, very large-scale integrated circuits, development of advanced VLSI applications of distributed parallel processing, and graphics for real-time rendering, and display of animated images, neural networks, and optical computing.

Signal and Image Processing
Cardiovascular signal and image processing, signal processing associated with speech and hearing, estimation theory, and adaptive signal processing currently are active areas. Collaborative efforts involve the Departments of Biomedical engineering and the College of Medicine. A digital signal processing laboratory and a cardiovascular image processing laboratory, the latter located at the Cardiovascular Center at The University of Iowa Health Center, are available to support this research. Recent problem investigations have included image processing, detection of cardiac motion, pulse waveforms, and speech recognition.
efficient coding and transmission of speech, speech processing aids for hearing-impaired, edge detection, and analysis and design of efficient algorithms for signal processing and communications problems.

Control Systems and Robotics
Current work on control, learning and adaptive control, self-repairing systems, digital control, multi-robot manipulation, and sensor-based robotics. Work also is being done on estimation, identification, and robust controls for linear and nonlinear dynamic systems. A control engineering research laboratory supports this effort. Other topics include applications of stochastic processes to problems in control and communication systems such as spectral estimation, identification, adaptive filtering and control for stochastic dynamical systems.

Master of Science
There are two M.S. degree options: with and without thesis. The thesis option requires 30 semester hours of course work, including at least 12 semester hours from an approved list of courses in electrical and computer engineering. The nonthesis option requires 36 semester hours of course credit, with a minimum of 18 semester hours from an approved list of courses in electrical and computer engineering. The M.S. semester-hour requirement includes 12 semester hours of graduate study required for electrical engineering undergraduates. With thesis, up to 8 semester hours of the 30 may be research credit. At least 6 semester hours of credit must be earned in 559 Individual Research in Electrical and Computer Engineering, M.A. Thesis by students in the thesis option. Without thesis, a total of not more than 3 semester hours of independent study credit may be included in the required 36-semester-hour total.

Candidates for the master's degree in electrical engineering must also successfully complete a final examination, which is conducted by a committee of three faculty members. One of the final examinations for thesis candidates must consist of an oral defense of the thesis. At the time of graduation, candidates for the master's degree must have acquired a cumulative grade-point average of 3.00 or higher.

Doctor of Philosophy
Requirements are:

At least 72 semester hours of credit in a coherent program acceptable to the advisor and approved by the graduate committee, with at least 45 semester hours of credit earned in formal courses (not thesis or other independent study), including 30 semester hours from an approved list of courses in electrical and computer engineering.

Successful completion of the Ph.D. qualifying examination.

Successful completion of the Ph.D. comprehensive examination.

Successful completion of a research program that includes a minimum of 15 semester hours of research. A Ph.D. dissertation is required for all candidates.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

Electrical and computer engineering provides core instruction for the college in systems, electrical circuits, and electronics. A key part of this core teaching responsibility line is providing the students of the college with their first experience with engineering laboratory instrumentation. The electronics laboratory facilities are equipped with oscilloscopes, signal generators, analog and digital broadwinding equipment, and a variety of measuring instruments.

Required and Elective Course Laboratories

The undergraduate laboratories consist of the traditional electronics laboratories plus special laboratories for microcomputers, microelectronics, and construction of hybrid solid-state devices.

Graduate Facilities and Laboratories

The department has excellent computing facilities supported by two VAX 750 systems with large RAM and disk storage, five Apollo workstations, two of which are color, a VAX 725 system, and several Macintosh personal computers. Over thirty alphanumeric and graphics terminals (including high-resolution monochrome and terminal) are available for accessing department, college, and University computers. Several laser printers and two electronic printers are available for production of high-quality hard copy.

Courses

Special Courses

5990 Cooperative Education Training Assignment: Electrical Engineering 0 h

Electrical engineering students participating in the Cooperative Education Training Assignment program during spring and fall semesters receive a stipend. During the fall semester the stipend provides a partial support of the student's expenses. During the spring semester, a part-time job in industry or on the student's permanent record. Permission of student and approval of the cooperative education advisor.

5994 Principles of Electrical Engineering Design I 3 h

Design project in electrical engineering with emphasis on microprocessors, microcomputers, and integrated circuitry. Projects are designed around practical devices (e.g., 7400 series, 555 timer). Permission: 5994. Corequisite: 30-90.50.00: 5994.

5995 Principles of Electrical Engineering Design II 3 h

Design project requiring integration of subject matter from other required E.E. courses. Permission: 5994. Corequisites: 30-90.50.00: 5995.

5996 Principles of Electrical Engineering Design III 2 h

Final design course, emphasis on thesis project or student, group, or special project. Students work on a design project, product, or system. Permission: 5994. Corequisite: 30-90.50.00: 5996.
55:138 Optical Control 3 s.h.
Theory of (or master's) degree, overview of cutting-edge technology, limitations and sufficient conditions for non-optical control, non-competitive, and optical materials. Prerequisites: 220:101 and 220:111.

55:212 Electrophysical Information Systems 2 s.h.

55:294 New Materials 3 s.h.
Chemical and biological aspects of stability, important techniques in electronic and optical systems, periodic systems, the linearization principle, Chapter 10 of the Concise Physics, Concise Electronic, Concise Materials, the Concise Materials, Concise Electronics, and Concise Chemistry. Prerequisites: 55:210 and 55:231.

55:295 Advanced Control Theory 3 s.h.
Modern control theories, state-space methods, optimal control, adaptive control, system-level synthesis, and design. Prerequisite 220:101, same as 283:117.

55:296 Waves and Materials 3 s.h.
Electro-dielectric-Magnetic Theory 3 s.h.

55:311 Advanced Quantum Electronics 3 s.h.
Introduction to the fundamental of optical properties, semiconductor electronics, light-emitting diodes, lasers, and superconductors. Prerequisites: 220:314 and 220:331.

55:312 Linear and Nonlinear Wave 3 s.h.
Introduction to the properties of waves, linear wave equations, and wave propagation. Prerequisites: 220:242 and 220:312.

55:317 Solid State Physics 3 s.h.
Semiconductors, metals, and insulators. Prerequisites: 220:242 and 220:312.

55:319 Optics and Optics 3 s.h.
Linear optical systems and optical properties of waves, linear wave equations, and wave propagation. Prerequisites: 220:242 and 220:312.

55:319 Quantum Optics 3 s.h.
Semiconductors, metals, and insulators. Prerequisites: 220:242 and 220:312.

Graduate Seminars, Advanced Topics, and Research
55:390 Readings in Electrical and 3 s.h.
Computer Engineering
For graduate students who need to undertake advanced research in computer engineering. Prerequisites: 220:314 and 220:331.

55:391 Graduate Seminar Electrical and 3 s.h.
Computer Engineering
General seminar for graduate students interested in advanced research in electrical and computer engineering. Prerequisites: 220:314 and 220:331.

55:490 Contemporary Topics in Electrical and 3 s.h.
Computer Engineering
Recent developments in electrical and computer engineering, including advanced topics in circuit theory and computer engineering. Prerequisites: 55:210 and 55:231.

55:590 Individual Investigations Electrical and 3 s.h.
Individual study of advanced topics in electrical and computer engineering, with permission of the instructor. Prerequisites: 55:210 and 55:231.

56:108 Research Electrical and Computer Engineering 3 s.h.
Research topics in electrical and computer engineering, with permission of the instructor. Prerequisites: 55:210 and 55:231.

56:210 Seminar: Physics 3 s.h.
Excursion into current research, program, and instruction. Same as 293:117.

56:395 Advanced Topics in Electrical and 3 s.h.
Computer Engineering
Advanced topics in electrical and computer engineering, with permission of the instructor. Prerequisites: 55:210 and 55:231.

56:399 Research Electrical and Computer 3 s.h.
Engineering
Research topics in electrical and computer engineering, with permission of the instructor. Prerequisites: 55:210 and 55:231.

Engineering
Chair: James W Storer
Professors: James C. Andrews, Adrian J. Oransky, J. Richard Szymczak, and James W Storer
Assistant Professor: Madeleine C. Kuntz
Undergraduate degree offered: B.S.E.

The emphasis is placed on interdisciplinary and multidisciplinary career objectives in engineering emphasizing the development of having analytical degree programs that combine a strong foundation in engineering fundamentals with the flexibility of choosing a major elective sequence that closely mirrors the specific, educational goals of individual students. The primary objective of the electrical engineering degree program is to provide such an option for students whose goals cannot be achieved within the framework of the designated degree programs.

The engineering program provides the opportunity for students to develop an individually tailored course of study. However, a proper balance between breadth and depth must be maintained in order for a student program to result in a well-balanced education. To accomplish this, the engineering curriculum contains a sufficient number of core courses to guarantee an excellent background in engineering fundamentals. The remainder of the program consists of a guided elective sequence.

The major portion of the elective program, scheduled for the final three semesters, builds on groundwork acquired in the engineering core courses. In consultation with an advisor, students select elective courses to plan a curriculum that satisfies the student's specific educational objectives. The sequence is selected not later than the fifth semester of study and must be approved by a program review committee. The committee also is responsible for advising the student in the program and offering suggestions and advice as required.

Joint Program with Urban and Regional Planning
A cooperative program between Engineering and the Urban and Regional Planning Program for students who are interested in technically oriented positions in the public sector. These positions usually require a blend of civil and industrial engineering and policy analysis skills. Examples of positions for which a background of this type is advantageous are employment by public service agencies, public utilities, economic development groups, land developers, public works departments, or corporate long-range planning departments. For more information, see "Urban and Regional Planning" in the "Laws Arts" section of the Catalog and the section entitled "Combined B.S. in Engineering/M.S. Planning Degree Program."

Joint Engineering/M.B.A.
Program with Business Administration
A joint program in engineering and business administration has been initiated a program that shows superior undergraduate students in any discipline the requirements for an undergraduate degree in engineering. The blend of course work in the two disciplines allows students to prepare for positions requiring both technical and managerial skills. Students can complete both programs in five years. For more information, see "The College of Business Administration" in the Catalog and the section entitled "Combined College of Engineering/M.B.A. Program."

Curriculum
The humanities and social science electives may be selected to satisfy the degree and social science requirements of the College of Engineering.

Freshman Year
First Semester
4.13: Principles of Chemistry I 3 s.h.
10:3: Introduction to Business 4 s.h.
22B:13 Engineering Calculus I 4 s.h.
55:10 Introduction to Engineering 3 s.h.
4 s.h.
Second Semester
10:3: Calculus I 4 s.h.
55:20 Introduction to Engineering 3 s.h.
4 s.h.
55:30 Introduction to Engineering 3 s.h.
4 s.h.
Total 17 s.h.
INDUSTRIAL AND MANAGEMENT ENGINEERING

Chair: Andrew Kasav.
Professor: James R. Brock, Andrew Kasav, John M. Langworthy, J. Richard Steiner.
Professor emeritus: J. Wayne Douglas.
Associate professor: A. L. Bivona, Gary W. Fischer, Tim Haas.
Associate professor emeritus: Edward K. Seith.
Assistant professor: Vassilis Kostiarich, Holder T. O'Bryan, Mark W. Cotton.
Industrial engineering is offered: B.S. in Industrial Engineering, Graduate Degree offered: M.S., Ph.D. in Industrial and Managerial Engineering.

Industrial engineering is concerned with analysis, design, and implementation of systems through optimal use of resources—human, material, energy, information, and financial. Systems may range from small subsystems to extremely large operations. In order to accomplish these activities, the industrial engineer must be skilled in mathematics, physical sciences, management, and human relations as well as computer systems, economics, optimization, human behavior, and systems analysis and design. Undergraduate programs are planned to provide courses on these topics and to provide some opportunity to specialize in specific areas based on individual student interests.

Industrial engineers have many opportunities for employment and service in industrial, government, research, and public service organizations. Employment opportunities are among the most varied in the engineering field. Industrial engineers hold positions as advisors to management or may participate directly in management decisions. Representative job titles include industrial engineer, operations analyst, quality specialist, operations research analyst, internal consultant, human factors specialist, senior specialist, and manager. While most industrial engineers are employed by manufacturing firms, others work in government agencies or service organizations such as airlines, banks, and hospitals.

INDUSTRIAL ENGINEERING CURRICULUM

Freshman Year
First Semester
123 Principles of Chemistry I 3 s.h.
ROIC (102 or 103) 4 s.h.
C2M35 Engineering Calculus I 4 s.h.
105 Engineering I 3 s.h.
Humanities elective (see below) 3 s.h.
Total 17 s.h.

Second Semester
124 Principles of Chemistry II 3 s.h.
2M36 Engineering Calculus II 4 s.h.
C2M35 Engineering Calculus I 4 s.h.
457 Engineering I 3 s.h.
Total 15 s.h.

Sophomore Year
First Semester
2M32 Differential Equations for Engineers 3 s.h.
57.15 Thermodynamics I 3 s.h.
57.16 Electrical Circuits 3 s.h.
22.54 Introductory Physics I 4 s.h.
57.17 Statics 2 s.h.
Total 15 s.h.

Second Semester
2M42 Vector Calculas for Engineers 3 s.h.
57.70 Dynamics 3 s.h.
225.30 Probability and Statistics for Engineering and Physical Sciences 3 s.h.
57.31 Principles of Design I 3 s.h.
*Humanities or social sciences elective 4 s.h.
Total 16 s.h.

Junior Year
First Semester
57.22 Principles of Design II 3 s.h.
*Technical electives 9 s.h.
*Humanities or social sciences elective 3 s.h.
Total 15 s.h.

Second Semester
2M30 Modern Physics 3 s.h.
Technical electives 12 s.h.
Total 15 s.h.

Senior Year
First Semester
Design course 3 s.h.
Technical electives 12 s.h.
*Humanities or social sciences elective 3 s.h.
Total 18 s.h.

Second Semester
Design course 3 s.h.
Technical electives 11 s.h.
*Humanities or social sciences elective 3 s.h.
Total 17 s.h.

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 robotics, human factors (ergonomics), management, economics, and information systems. Production, quality control, and operations research.

Undergraduate Program

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Senior Year
First Semester:
31:136 Psychology in Management (social science elective) 3 s.h.
56:90 Professional Seminar: Industrial Engineering 1 s.h.
56:150 Information Systems Design 3 s.h.
56:166 Production Systems 3 s.h.
Humanities elective (100 level) 3 s.h.
Technical elective (see below) 3 s.h.
Total 16 s.h.
Second Semester:
56:91 Professional Seminar: Industrial Engineering 9 s.h.
56:160 Operational Systems Design 3 s.h.
56:162 Quality Control and Engineering Statistics 3 s.h.
Technical electives (see below) 9 s.h.
Total 16 s.h.

Economics Elective
Students may select from the following:
6E:100 Price, Employment, and Production Theory 3 s.h.
6E:101 Microeconomics 3 s.h.
6E:111 Labor Economics 7 s.h.
6K:175 Managerial Economics 3 s.h.

Humanities and Social Science Electives
These must be selected to satisfy the College of Engineering requirements. Note: social science electives are highly recommended.

Mathematics and Statistics Elective
Students may select from the following:
228:64 Vector Calculus for Engineers 3 s.h.
228:72 Elementary Numerical Analysis 3 s.h.
Advanced statistics course (with advisor’s approval) 3 s.h.

Engineering Science Core Elective
Students may select one of these:
57:09 Dynamics 3 s.h.
57:12 Linear Systems Analysis 3 s.h.
57:13 Engineering Biological Sciences 3 s.h.
57:18 Principles of Electronic Instrumentation 4 s.h.
57:19 Mechanics of Deformable Bodies 3 s.h.
57:20 Mechanics of Fluids and Transfer 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.
56:143 Advanced Human Factors Engineering 3 s.h.
56:146 Advanced Management Psychology 3 s.h.
50:551 Microcomputer Applications 3 s.h.
56:153 Engineering Administration I 3 s.h.
56:155 Quantitative Investment Analysis 3 s.h.
56:126 Engineering Economic Decisions 3 s.h.
56:164 Reliability Theory and Practice 3 s.h.
56:176 Regression Analysis 3 s.h.
56:179 Digital Systems Simulation I 3 s.h.
56:198 Contemporary Topics in Industrial and Management Engineering 3 s.h.

Specialization in Quality Engineering
Quality engineering is the specialization in the engineering profession that is concerned with the design, manufacture, delivery, maintenance, and use of products and services over their life cycles. Since quality is the measure of these products or services that 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 as well: it occurs after as well as during the design, development, and manufacture of products and services.

The background engineering requirements of quality engineering are similar to those of industrial engineering. Consequently, a specialization in quality engineering can be obtained through the judicious selection of elective courses in the industrial engineering program. Additional required courses for the quality engineering specialization are as follows:
56:153 Engineering Administration I 3 s.h.
56:164 Reliability Theory and Practice 3 s.h.
56:176 Regression Analysis 3 s.h.
225:108 Analysis and Design of Experiments I 3 s.h.

These courses replace twelve semester hours of technical elective requirements of the industrial engineering program.

Graduate Programs
Graduate programs in industrial and management engineering are offered to meet the needs of the individual. Each student’s program of study is based on his or her background, career objectives, and sound academic practice. The curriculum is highly flexible; the goal is academic excellence.

There are five principal areas of academic focus: manufacturing, industrial engineering, computer science, engineering/economics, information and engineering management, quality and production control, and operations research and applied statistics.
Manufacturing courses, directed by the 30 series, delve into selecting appropriate manufacturing materials, planning processing operations, devising control strategies, and designing manufacturing systems. Contemporary topics in computer-aided planning and design, as well as computer-controlled manufacturing, are covered.
Human factors studies concentrate on applying the psychological, physiological, and sociological sciences to problems in manufacturing and service systems. These problems concern fitting jobs and organizations to the people who perform those jobs within the organization as well as training and motivating those people.
Courses in the 40 series cover these topics.
Information and engineering management studies concentrate on computer-aided information systems, and the design of supporting software. Other topics include engineering administration and engineering economics. This area is covered by courses in the 50 series.
The quality and production control area focuses on quality assurance, quality control, and production control. This area of concentration is covered by courses in the 60 series.

Studies in operations research and applied statistics concentrate on mathematical, statistical, and computer sciences for modeling, designing, and operating systems. Various methodologies in this area include mathematical programming, heuristic optimization, statistical analysis, and queuing theory. These courses in the 70 series cover these topics.

Most graduate students tend to focus on one or two specialty areas, while others distribute their studies over more than one area.

Students in the graduate program participate in research in the areas of their academic concentration. Original manufacturing research consists of flexible manufacturing systems, design, optimization of processing paths, adaptive manufacturing control, parametric robust control, and stochastic pattern recognition of parts. Current research in human factors engineering/economics consists of investigating the effects of visual and auditory information on human information processing, performance time statistics with cognitive tasks, and the effects of aging on human performance. Other ergonomics research is directed to use of digital simulation to solve human workplace problems, such as workplace design, computer-aided human problem solving, and techniques of ergonomic data collection and analysis.
Doctor of Philosophy
Typically, Ph.D. programs in industrial and management engineering require at least 72 semester hours of study, including research for the dissertation.

Academic requirements above these minimums are specified by the student’s advisory committee. There is no foreign language requirement or specific requirement for research techniques.

Admission to degree candidacy requires a minimum grade-point average of 3.55 on all graduate work taken at the University of Iowa and the demonstration of a capacity for individual achievement.

Upon completing the course work specified by their advisor and advisory committee, students are admitted to the comprehensive examination, which includes both written and oral parts. Part of this examination usually includes the presentation of a dissertation proposal, so that the advisory committee can evaluate the student’s academic preparation in light of the research to be performed. Upon satisfactory completion of this examination, students are accepted as candidates for the Ph.D. and usually have only to complete and defend their dissertation.

Part-time Ph.D. study is discouraged.

Admission
Students with an M.S. objective may be admitted from an AET-accredited baccalaureate curriculum in any engineering discipline or in the mathematical or physical sciences with a minimum grade-point average of 2.75 and an acceptable score on the Graduate Record Examination (GRE) Aptitude Test (typically at least 400 verbal, 600 quantitative). Applicants from non-U.S. institutions must meet equivalent conditions or require additional training. Students may be considered for conditional admission with a lower grade-point average and lower GRE aptitude test scores.

Students from support or social science programs who have adequate mathematical preparation also may be considered for the M.S. or Ph.D. degree. Students on conditional status must achieve regular status within two semesters of registration by attaining a grade-point average of at least 3.00 and getting regular acceptance by the industrial and management engineering program faculty. Otherwise, they are dismissed. Admissions may be limited by the number of faculty and other available resources.

Students with a Ph.D. objective may be admitted from an AET-accredited baccalaureate or a postbaccalaureate curriculum in any engineering discipline or in the mathematical and physical sciences with a minimum grade-point average of 3.00 and an acceptable GRE Aptitude 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 want to earn an M.S. and who have a B.S. degree or an M.S. degree without thesis usually are first admitted to the M.S. program. All admissions to the Ph.D. program are made by the faculty as a committee of the VHB.

Financial Aid
A number of one-quarter-time and one-half-time graduate student teaching and research assistantships are available. Awards are based on students’ academic records and assessment of their potential contribution to the research and teaching goals of the program. Graduate students also may qualify for higher stipend instructor positions. Students should write to the chair of the industrial and management engineering department for further information.

Special Facilities and Laboratories
Engineering Core
Information about laboratories affiliated with core courses coordinated by other departments can be found in the Catalog section for each of the other engineering departments.

Required and Elective Course Laboratory
Infrastructure of the management engineering occupies the north wing of the fourth floor in the Engineering Building. More classes and seminars meet there. Faculty offices, graduate student offices, and most laboratories also are located there. The laboratories are described below.

Computer Integrated Systems Laboratory
This facility has equipment that supports instructional and research needs in production and manufacturing operations. Included are a variety of small-scale and large-scale model and computer models; automatic vision and sensing devices; microcomputers of various types; digital cameras, desktop computer systems, programmable controllers, and a variety of small-scale machine tools and reconfigurable construction units for modeling physical material handling systems.

Software is available for part geometry, generating computer numerical control (CNC) programs, computer process planning, expert systems, and for other general purposes.
MECHANICAL ENGINEERING

Chair: Ching-Chang Lin

Graduate degree offered: M.S., Ph.D. in Mechanical Engineering

Mechanical engineering is broadly concerned with energy, including its transformation from one form to another, its transmission, and its utilization. -Manufac-turing engineers concern, plan, design, and direct the manufacture, distribution, and operation of a wide variety of machines, devices, and systems - including complex mass-manufacturing systems for energy conversion, environmental control, materials processing, transportation, materials handling, and other purposes. They are engaged in applied research, development, computer-aided design and analysis, construction, development, testing, operation, production and maintenance, marketing, and sales management, and are employed throughout all industries.

Undergraduate Program

The undergraduate program prepares students for a career in engineering, with an emphasis on the application of the principles of thermal energy to mechanical systems. Mechanical engineers design and construct electrical energy, mechanical systems and machines, and design and control of these systems. - The undergraduate curriculum provides a substantial number of electives in both technical areas and in the humanities and social sciences. Technical electives are selected to provide in-depth knowledge in at least one of the major disciplines of mechanical engineering. Technical electives in major disciplines are offered in thermodynamics, heat transfer, fluid mechanics, power systems, strength of materials, structural analysis, control systems, computer-aided design, and numerical methods, and computer-aided design. All upperclass students undertake a design project. A textbook describing the curriculum and program requirements is available in the department office.

Curriculum

The humanities and social science courses must be taken to satisfy the humanities and social science requirements of the College of Engineering.

Freshman Year

First Semester
- 4.13 Principles of Chemistry I 3 sh.
- 10.96 Chemistry 4 sh.
- 57.3 Engineer 1 3 sh.
- *Humanities or social science elective 3 sh.
- Total 17 sh.

Second Semester
- 4.14 Principles of Chemistry Lab I 1 sh.
- 28.3 Mechanical Engineering I 4 sh.
- 28.4 Mechanical Engineering II 4 sh.
- 21.5 Introductory Physics I 4 sh.
- 57.4 Engineering I 3 sh.
- Total 15 sh.

Sophomore Year

First Semester
- 22.42 Vector Calculus for Engineers I 3 sh.
- 21.18 Introductory Physics II 3 sh.
- 57.5 Thermodynamics I 3 sh.
- 57.10 Materials Science 3 sh.
- Total 15 sh.

Second Semester
- 21.11 Differential Equations for Engineers 3 sh.
- 57.8 Electrical Circuits 3 sh.
- 57.10 Dynamics 3 sh.
- 57.11 Mechanics of Deformable Bodies 3 sh.
- *Humanities or social science elective 3 sh.
- Total 18 sh.

Junior Year

First Semester
- 57.12 Linear Systems Analysis 3 sh.
- 57.21 Principles of Fluids and Transfer 3 sh.
- 57.11 Principles of Design I 3 sh.
- 57.41 Transportation 3 sh.
- 28.91 Professional Seminar: Mechanical Engineering 0 sh.
- Total 16 sh.

Second Semester
- 57.41 Model-Physical Systems 3 sh.
- 57.18 Introduction to Electronic Instrumentation 4 sh.
- 64.3 Heat Transfer 3 sh.
- 57.1 Mechanical Systems 3 sh.
- 57.91 Professional Seminar: Mechanical Engineering 0 sh.
- *Humanities or social science elective 3 sh.
- Total 15 sh.
Senior Year
First Semester
58:55 Mechanical Systems Design 4.5 h.
58:80 Experimental Engineering 4.5 h.
58:93 Professional Seminar 0 h.
Mechanical Engineering 6 h.
Technical electives 3.5 h.
Total 17 h.
Second Semester
58:48 Thermal-Fluid Systems Design 4.5 h.
58:80 Mechanical Engineering Project 3 h.
58:91 Professional Seminar 0 h.
Mechanical Engineering 6 h.
Technical electives 3 h.
*Humanities or social science elective 3 h.
Total 16 h.

Technical Electives
These elective courses permit students to develop a broader background or a deeper understanding in selected fields of mechanical engineering. Because most of these courses build on earlier courses in the curriculum, students choose only those courses that result from an interest developed during the basic courses. Students should consult with and obtain approval from their academic advisor before selecting elective courses. Guidelines for selecting the four technical electives are as follows:

A minimum of 12 technical elective courses from mechanical engineering offerings shall be taken.

Although emphasis is on engineering courses, mathematics, physics, or chemistry courses at a more advanced level than those required in the curriculum may be used as electives.

One elective course may be chosen from engineering courses that are required or taken as technical electives in another engineering curriculum.

One course from the College of Business Administration may be elected, with the exception of accounting or economics courses numbered below 100.

(Economics courses may be taken as social science electives.)

A maximum of 3 semester hours of individual investigation may be used as elective credit. Individual investigations are not normally undertaken, but they may be allowed in special circumstances.

Students are encouraged to take courses in several areas to gain a broad background in mechanical engineering.

Graduate Programs
The mechanical engineering graduate program at both the M.S. and Ph.D. levels is designed to educate students in contemporary methods and guidance techniques at an advanced level and to prepare them for a professional career in mechanical engineering design, development, and research. The plan of study is tailored to meet individual career objectives. The principal areas of concentration in the graduate program are fluid mechanics, thermal sciences, and mechanical systems, each of which is briefly described below.

Research
Fluid Mechanics
The graduate program in fluid mechanics is especially suitable for those seeking careers in teaching and/or research in academic and industrial organizations.

Emphasis is on the elucidation of fundamental principles and techniques of solving problems in the various fields of fluid dynamics applications. In addition to physical modeling, strong emphasis is given to the use of digital computers, both in the mathematical modeling of flow phenomena and in the acquisition and processing of experimental data.

Thermal Sciences
The graduate program in thermal sciences is designed to prepare students for careers in industry, teaching, or government.

Emphasis is on the fundamentals of thermodynamics and heat transfer and associated analytical and experimental methods used in engineering systems. Areas of concentration include gas thermodynamics, numerical methods, solar energy systems, thermodynamics, combustion, phase-change, process media, and radiation and convective heat transfer.

Mechanical Systems
The graduate program in mechanical systems is designed to prepare students who want to pursue careers in academia, applied research, advanced system analysis, or design. Emphasis is placed on fundamental principles, techniques, and experimentation used to analyze and design mechanical systems. Areas of concentration include dynamics, computer-aided design, structural optimization, software development, control systems, and material behavior (Agar, fiber-reinforced, etc.).

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 non-thesis program. Usually 6 and no more than 5 semester hours of credit for thesis research and writing may be counted in satisfying the 30-semester-hour minimum requirement. After admission to the graduate degree program, students should visit with the mechanical engineering faculty and find an academic advisor during the first term. All graduate students in residence are required to attend 58:91 Graduate Seminar: Mechanical Engineering each semester. To earn the M.S. degree, students are required to attain a minimum grade-point average of 3.00. All graduate work taken at The University of Iowa is used to satisfy the degree requirements and to be successful in the final examination administered by their committee. The requirements for the M.S. degree may be completed within a calendar year for a full-time student. However, students with assistantship duties or other constraints may require between one and two calendar years to complete the degree.

Doctor of Philosophy
Typically, Ph.D. programs in mechanical engineering require approximately 90 semester hours of credit—including research for the dissertation—beyond the baccalaureate degree. All graduate students are required to attend 58:91 Graduate Seminar: Mechanical Engineering. There is no foreign language requirement. Part-time Ph.D. study is discouraged, and students who cannot study full-time on campus are rarely admitted to the Ph.D. program.

One of the Ph.D. degree requirements is a minimum grade-point average of 3.25 on all graduate work done at The University of Iowa. All students in the doctoral program are required to take the qualifying examination during their first year in the program. Upon completing the specified course work in the plan for study and upon their advisor's recommendation, students are admitted to the comprehensive examination. Ph.D. students are formed into a comprehensive examination committee and which must be conducted within 28 months from the date of entering course work for the Ph.D. degree. The comprehensive examination is intended to establish a student's knowledge and skill in the dissertation research on which the student's proposed dissertation dissertation subject that he plans to undertake the research. The exam is in one exam that assesses the dissertation prospectus and related areas.

Having satisfactorily completed the comprehensive examination, students usually have only to complete and successfully defend the dissertation. The doctoral dissertation is required as partial fulfillment of the Doctor of Philosophy degree.

Requirements for the Ph.D. degree generally can be completed in three to four years beyond the master's degree for students with graduate appointments in the department.

Admission
Students who have earned a baccalaureate degree in an engineering curriculum or in a curriculum in the mathematical or physical sciences with a minimum grade-point average of 3.00 are eligible to be considered for regular admission to the Master of Science degree program in mechanical engineering. Reference letters and scores on the Graduate Record Examination (GRE) Aptitude Test also are taken into account in admission decisions.
Courses

Special Courses

5046 Cooperative Education Training

4 sh.
Mechanical Engineering students participating in the Cooperative Education Program gain firsthand experience during each assignment. Periodic evaluation provides a record of the student's performance. Prerequisite: admission to the Cooperative Education Program and approval of faculty sanction.

5060 Experimental Engineering

4 sh.
Principles of experimental measurements; statistical evaluation of results; analysis of results; instrumentation; experimental design; and analysis of experimental data; computer-aided data analysis and interpretation.

5066 Mechanical Engineering Project

3 sh.
Application of knowledge and design principles to solve engineering problems in an area outside of the classroom. Projects will be conducted in various forms in the design phase and carried through to higher levels. Prerequisite: MME 550 and 552.

5067 Professional Seminar: Mechanical Engineering

1 sh.
Introduction to the mechanical engineering profession, development of strategies, professional awareness, and development of professional and personal skills.

5068 Individual Investigation: Mechanical Engineering

.5-4.5 sh.
Individual projects for mechanical engineering undergraduate students, such as laboratory studies, engineering design projects, analysis and simulation of an area of interest, computer-aided design, research. Content of this requirement.

5085 Energy in Contemporary Society

3 sh.
Technical, legal, economic, and social issues in energy production, delivery, and end uses with emphasis on implications of energy policy. Prerequisites: consent of instructor.

5099 Independent Study: Mechanical Engineering

1-4 sh.
Independent study on an area of interest. Prerequisite: consent of instructor.

General Courses

5411 Finite-Element Techniques in Engineering I

3 sh.
Introduction to the finite-element method of stress analysis, load concepts, finite-element method and differential equations, with emphasis on application to structural and thermal problems. Prerequisites: MME 554 and ECE 434.

5503 Mechanical Behavior of Materials

3 sh.
Stress, strain, and deformation of metallic and nonmetallic materials; strength of materials; consideration of mechanical properties, stresses, and plastic deformation. Prerequisites: MME 345 and 350.

5504 Fluid Flow Techniques in Engineering

3 sh.
Introduction to the finite-element method of stress analysis, heat concept, surface tension, and hydrostatics. Prerequisites: MME 433 and 550.

5605 Analysis Methods in Thermal Fluid Mechanics

3 sh.
Thermodynamic analysis of heat and mass transfer, steam generators and cycle processes, and internal combustion engines. Prerequisites: MME 450 and 554.

5606 Advanced Fluid Mechanics

3 sh.
Thermodynamic analysis of heat and mass transfer, steam generators and cycle processes, and internal combustion engines. Prerequisites: MME 450 and 554.
and mechanical, fluid and three-dimensional systems. Prerequisites: 50.105 and 50.110.

50.234 Energy Principles in Structural Mechanics 3 s.h.
Principles of virtual work, statics and mechanics of beam and shell systems, bending theory, plate and shells. Prerequisites: 50.214 and 50.240. Same as 55.344.

50.235 Topics in Solid Mechanics 3 s.h.
Finite element analysis of statics and dynamics. Analytical and numerical methods of stress and strain analysis. Prerequisites: 50.215 (or equivalent). Same as 50.242.

50.331 Theory of Viscoplasticity 3 s.h.
Vector theory of incompressible, Newtonian materials, micromechanical and macroscopic behavior, finite deformation. Prerequisites: 50.212 (or equivalent). Same as 16.347.

50.342 Continuum Mechanics and Fluidity 3 s.h.
Finite strain measure and rate of deformation; principle of virtual work and maximum power theorem, stability of elastic and plastic bodies. Prerequisites: 50.331 or equivalent. Same as 16.348.

50.350 Mechanical Design in Structures 3 s.h.
Design and simulation of stress and internal response of mechanical systems using general design, and optimization techniques. Prerequisites: 50.310 and 50.320. Same as 55.344.

50.359 Graduate Seminar: Mechanical Engineering 3 s.h.
Advanced seminars and research in mechanical engineering. Prerequisites: 50.391 or graduate standing.

50.390 Contemporary Topics in Mechanical Engineering 3 s.h.
Current topics in solid and fluid sciences and mechanical systems not covered in other courses. Topic and content determined by市场需求 and interest. Prerequisites: junior standing.

50.391 Individual Research Project 3 s.h.
Individual projects for mechanical engineering graduate students, such as laboratory study, engineering design project, independent research project, computer software development, and research. Course of study required. Prerequisites: graduate standing.

50.392 Research: Mechanical Engineering 3 s.h.
Research in mechanical engineering. Prerequisites: 50.391. Senior standing and satisfactory performance of an approved topic for partial fulfillment of the requirements for the M.S. degree with thesis in mechanical engineering. Course of study required. Prerequisites: graduate standing.

50.393 Research: Mechanical Engineering 3 s.h.
Thesis. Research and dissertation investigation of an approved topic for partial fulfillment of the requirements for the M.S. degree in mechanical engineering. Course of study required.

Calvin Hail and a University of California

Calm Hail and a University of CAMBUS
Graduate College

Drew: Dunat C. Spleenstahb
Done for know-word Studiom Rudolph W. Schulz
Associate done: James F. Jakworth, Charles M. Waser
Grades Examiners: Cezen Cox
The University of Iowa has been a leading center of advanced study for three-quarters of a century. Presently, nearly one-third of its enrollment is in the Graduate College. This unusually high ratio reflects the breadth of the University's graduate programs and resources, the strength of a graduate faculty with a long tradition of productive scholarship, 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 review and evaluation of existing programs. Through its administration of scholarship, fellowship, and research funds, the college encourages research and strengthens the intellectual and professional climate of the University.

The faculty of the Graduate College is made up of all University faculty members at the ranks of assistant professor, associate professor, and professor. A 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

The Graduate College confers the Master of Arts (M.A.), Master of Science (M.S.), Master of Business Administration (M.B.A.), Master of Public Administration (M.P.A.), and Master of Public Health (M.P.H.) degrees.

The college currently confers degrees in the following major fields:

Accounting—M.B.A.

American Studies—M.A.*

Anthropology—M.A.*

Applied Mathematics—M.S., Ph.D.

Art—M.A., M.F.A.

Art History—M.A., Ph.D.

Asian Civilizations—M.A.*

Astronomy—M.S.*

Biochemistry—M.S., Ph.D.

Biological Engineering—M.S., Ph.D.

Biological Sciences—M.S., Ph.D.

Business Administration—M.A.*, M.B.A., M.F.A.*

Chemical and Materials Engineering—M.S., Ph.D.

Chemistry—M.S., Ph.D.

Civil and Environmental Engineering—M.S., Ph.D.

Classics—M.A.*, Ph.D.

Communication Studies—M.A.*, Ph.D.

Community Dentistry and Dental Public Health—M.S.

Comparative Law—M.C.L.*

Comparative Languages—M.A.*, M.F.A., Ph.D.

Computer Science—M.S., Ph.D.

Criminal Justice and Corrections—M.A.*

Dance—M.F.A.

Dental Hygiene—M.S.

Economics—M.A.*, M.S., Ed.D.*

Electrical and Computer Engineering—M.S., Ph.D.

Endocrinology—M.S.

English—M.A., M.F.A., Ph.D.

French—M.A., Ph.D.

Genetics—Ph.D.

Geography—M.S., Ph.D.

German—M.A., Ph.D.

Greek—M.A.*

History—M.A., Ph.D.

Home Economics—M.A.*, M.S.*

Hospital and Health Administration—M.A.*, Ph.D.

Human Nutrition—Ph.D.

Industrial and Management Engineering—M.S., Ph.D.

Journalism—M.A.*

Latin—M.A.*

Leisure Studies—M.A.*

Library and Information Science—M.A.*

Linguistics—M.A.*, Ph.D.

Mass Communications—M.A.*

Mathematics—M.S., Ph.D.

Mechanical Engineering—M.S., Ph.D.

Microbiology—M.S., Ph.D.

Museum Studies—M.A.*

Music—M.A.*, M.F.A., D.M.A., Ph.D.

Neuroscience—Ph.D.

 Nursing—M.A., Ph.D.

Operative Dentistry—M.S.

Oral Pathology—M.S.

Oral and Maxillofacial Surgery—M.S.

Orthodontics—M.S.

Otorhinolaryngology and Head and Neck Surgery—M.S.

Pathology—M.S.

Pediatric Dentistry—M.S.

Pharmacology—M.S., Ph.D.

Pharmacy—M.S., Ph.D.

Philosophy—M.A.*, Ph.D.

Phyical Education—M.A., M.S., Ph.D.

Physical Therapy—M.A., M.P.T.

Physics—M.S., Ph.D.

Physiology and Biophysics—M.S., Ph.D.

Political Science—M.A., Ph.D.

Preventive Medicine and Environmental Health—M.S., Ph.D.

Psychodiagnostics—M.S.

Psychology—M.A., Ph.D.

Public Affairs—M.A.*

Quality Management and Productivity—M.S.

Radiation Biology—M.S., Ph.D.

Religious Studies—M.A.*

Russian—M.A.

Science Education—M.S., Ph.D.

Social Sciences—M.S., M.P.H.

Social Work—M.S., M.P.H.

Spanish—M.A., Ph.D.

Speech Pathology and Audiology—M.A.*, Ph.D.

Statistics—M.S., Ph.D.

Theatre Arts—M.F.A.

Urban and Regional Planning—M.A.*, M.S.*

* Degree offered with or without thesis

**Nonthesis degree

***Student entry suspended

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 Ph.D. programs at the master's level. Students seeking approval for ad hoc interdisciplinary Ph.D. programs must apply for a social science degree and be admitted to, and enrolled in a departmental program in the Graduate College. For details, see Section XII.E, "Rules and Regulations of the Graduate College" in this section of the Catalog.

Aging Studies Program

The Aging Studies Program is a multidisciplinary degree program administered by the College of Liberal Arts in cooperation with other colleges at The University of Iowa. The program is designed to complement graduate degree programs for students with academic, professional, research, or service career interests in aging. An entry is made on a student's transcript certifying completion of an approved curriculum in aging studies. For details on the "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 open to the Ph.D. degree. Students combine study of theoretical and applied aspects of a mathematical science (mathematics, statistics, or computer science) with courses in a social science (behaviors), biological, engineering, or physical science. 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 (CICS) coordinates and supports international studies at The University of Iowa. Founded as a faculty center in mid-1968, CICS was recognized as an academic center by the Iowa State Board of Regents in April 1984. In 1985 CICS was awarded a grant from the U.S. Department of Education to establish a "Title VI National Resource Center on International Studies, one of 11 such centers in the United States. The grant
supports a variety of research and instructional activities that focus on international development. As a national resource center, CES serves the state, the region, and the nation by making available the human and bibliographic resources of the University through public lectures, institutional programs, and research activities.

The center is administered by a half-time faculty director, a full-time administrator, and an executive committee of the faculty chairs of the eight constituent programs within CES. The center is linked administratively to the Office of the Vice President for Educational Development and Research.

Interdisciplinary Programs

Eight interdisciplinary programs are represented in CES. Four of the eight programs promote instruction and research with a geographical focus: the African Studies Program (ASP), the Program in Asian Civilizations (PAC), the Global Studies Program, and the Latin American Studies Program (LASP). These four also are involved with graduate and undergraduate instructional programs within the College of Liberal Arts (See further details, see the appropriate sections under "College of Liberal Arts" in the Catalog).

The remaining four programs pursue instructional and research activities utilizing topical lenses: the Health and Development Program, the Project for International Communication Studies (PICS), the Program for International Development (PDI), and the Women in International Development Committee (WID). Faculty members and students in these programs are drawn from schools and departments across the University.

International Programs

The center emphasizes international studies as the 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.

New faculty and staff appointments are supported through center funds, as are faculty research or course development grants, graduate language and area studies fellowships, and undergraduate research and international studies scholarships. A number of visiting foreign scholars and research fellows are affiliated with the center early in their research projects, technical assistance projects, and cosmetics linking center faculty with universities and agencies abroad are ongoing.

More than 65 public lectures, seminars, and conferences are sponsored by the center and its constituent programs each year, and CES cooperates with the Iowa City Foreign Relations Council as well as with other community organizations in providing speakers, training workshops, and other outreach resources. Six times a year the center publishes the International Studies Newsletter and, in conjunction with the Main Library, publishes the Iowa International Bibliography Guides Series and a series of scholarly papers, the International Papers Series.

Evolutionary Ecology and Behavior

Program co-chairs: Steven Hendrix, Henry Howe
Professors: Richard G. Baker (Genetics), Richard V. Betragna (Biology), Robert W. Courey (Botany), Jeffrey T. Schaal (Biology), Robert A. Sweder (Biology)
American associate professors: Steven Hendrix (Biology), Nancy B. Howe (Biology), David Wann (Chemistry)
Assistant professors: Russell L. Cochran (Anthropology), Anne R. Foster (Genetics), James C. Green (Chemistry), Diane Horton (Botany), George Muller (Geography)

Programs and Facilities

The departments of Biology and Botany offer programs of study leading to the M.S. and Ph.D. degrees with specialization in ecology and evolutionary biology, emphasizing adaptation, population ecology, and community ecology.

Particular strengths of the program are quantitative methods in ecology and evolutionary ecology, plant-animal interactions, population genetics, and tropical biology. There is real and strong emphasis on balance between controlled experimentation and field observation. Laboratory research emphasizes the adaptive significance of traits, interactions between species, and population and community dynamics.

Opportunities for field research are provided locally by the Macbride Nature Recreation Area just outside Iowa City, with lakes, temperate hardwood forests, and old fields. The Iowa Lakes Environmental Station on Lake Okoboji, with year-round laboratory facilities, housing, and a research vessel, provides the opportunity for undisturbed prairie, marshland, and lake ecosystems.

Field work by faculty and students also takes place worldwide. Recent studies have been conducted in East Africa, England, the Caribbean, Brazil, Mexico, Central America, the Great Smoky Mountains, the Mh吮a Desert, the American Rockies, and the Florida Keys. The Department of Zoology Institution Laboratory on Barro Colorado Island in Panama and the Panamanian National de Santa Rosa in Costa Rica are among the sites used by staff and students. The University of Iowa is a member of the Organization for Tropical Studies and regularly sends students to the Tropical Biology Course in Costa Rica. In addition, the University has a cooperative program with the University of the Andes in Merida, Venezuela.

Indoor facilities permit a wide range of studies, with varied equipment (for observation and analysis such as video-recorders, movie cameras, walk-in environment chambers, computer terminals, a GC-MS, and a PDP-12 computer. There is ample space for housing a variety of organisms, and a recently constructed 3000-square-foot greenhouse provides room for research projects. The botany greenhouse contains a large collection of desert, jungle, aquatic, marine, and economic flora. The botany herbarium contains more than 250,000 specimens. The Museum of Natural History, an institutional member of the American Association of Systematic Collections, houses more than 500,000 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 collaboration, consultation, course work, and coopetition opportunities with members of departments such as Biology, Botany, Chemistry, Computer Science, Geography, Geology, Mathematics, Microbiology, Physiology and Biophysics, and Statistics and Actuarial Science. Students are encouraged to participate in departmental offices and may hold positions of responsibility on faculty committees.

Financial Support

All graduate students are offered financial support. Teaching assistantships, research assistantships, tuition scholarships, and teaching awards and fellowships are available. In addition, two outstanding incoming graduate students—one in botany and one in ecology—are selected each year for the Graduate Student Research Fellowship. The Bodine Fund assists student travel for study. Postdoctoral students may apply for the Postdoctoral Assistant-in-Instruction Program or the NIH fellowship for students in behavior, and may compete for small grants from the University. Computer funds are available for graduate students, postdoctoral fellows, and faculty.

For further information and application materials, contact the Department of Biology or the Department of Botany.

Genetics

The Ph.D. program in genetics is an interdepartmental program involving members of the Departments of Biochemistry, Biology, Botany, and Microbiology, as well as a number of faculty members in clinical departments. See "Genetics" in the "College of Liberal Arts".
section of the Catalog for a list of participating faculty, degree requirements, and courses offered.

Interuniversity Center for Film and Critical Studies in Paris
Program coordinators: Charles F. Atkin, J. Dudley Atkins
The University of Iowa is one of a consortium of 21 colleges and universities associated with the Council on International Educational Exchange (CIEE), which sponsors the Film Studies Program and a Contemporary Criticism and Culture Program. These are two unique academic opportunities offered at the Centre Universitaire Americain du Cinéma et de la Critique a Paris.

The Film Studies Program is designed to explore film theory and analysis—not to train filmmakers or technicians. The curriculum provides courses and seminars in film theory, formal structures, history, and pedagogy. Participants study the relationship between film and other art forms, film culture, film and language, and film and psychoanalysis. Students discuss themes such as the evolution of the early cinema, the silent films of Griffith, Lang, Eisenstein, and Kenter; the classic Hollywood film; French cinema during and after the transition to sound; and European and American avant-garde cinema.

Participants study the works of Metz, Freud, Brecht, and Balibar, Focault, and others to gain an understanding of contemporary French culture, mass media, and the visual arts.

The Contemporary Criticism and Culture Program focuses on recent developments in French political thought and social theory, linguistics, social sciences, and literary theory. It draws on recent theoretical concepts in the fields of linguistics, psychoanalysis, anthropology, history, and philosophy to analyze verbal and visual images in literature, painting, photography, film, and television. The interdisciplinary nature of this program makes it relevant not only to French culture, but also to students of other disciplines concerned with the problems of criticism and culture. It is of particular value to those who want to expand the applicability of their knowledge outside of the French tradition to a variety of disciplines.

A recent addition to the program is a specialization in history characterized by the application to historical research of insights drawn from other fields, such as linguistics, cultural geography, anthropology, sociology, and economics. Particularly distinctive in the French historical approach has been a preoccupation with the long-term evolution of populations and the social, economic, and cultural development of groups of ordinary people, seen in their urban or rural contexts.

Students may concentrate in one of these programs entirely or develop an individual program combining elements from both study center components. Participating students are registered in the University of Paris III—Centre and are eligible to take selected courses within the University of Paris as well as those directly sponsored by the center. The program is open to both undergraduate and graduate students from The University of Iowa. Further information contact the program coordinators.

Iowa Quaternary Studies Group

Professors: Richard C. Boise (Geology), Robert S. Carmines (Geology), Lee D. Draper (Geology), Brian F. Gussert (Geology), Holmes A. Semken (Geology), George K. Swansett (Geology), Kenmore Tutt (Geology)

Associate professor: George G. Woodsmith (Geology)

Assistant professors: Ann F. Frazier (Geology), Robert H. Frye (Geology), Robert F. McCall (Geology), Frank H. Wason (Geology)

Teaching assistant professor: Mary Weaver (Anthropology)

Adjunct professors: George H. Halloway (Geology)

Adjunct assistant professors: Bruce B. Sanden, Ronald J. Sorensen, Donald F. Schweller (Geology)

Program and Facilities

Students working towards master's and doctoral degrees in the departments of Anthropology, Botany, Geography, and Zoology are eligible for the program in Quaternary studies. Students with interests in Quaternary studies are encouraged to broaden their program with courses in these collateral sciences as they progress toward a degree in their chosen field.

Research by the faculty and students includes paleoecology and paleoecological studies using pollen, vascular plant macrofossils, bryophytes, mosses, insects, and vertebrates; studies of glacial geology, geomorphology, and stratigraphy; Quaternary geology, Quaternary paleogeography, and Quaternary stratigraphy; and Quaternary paleo-oceanography of the Bering Strait and the Arctic Ocean.

Field facilities are available, including classroom, laboratory, and field equipment. Field areas range from the Great Plains to Central Lindaans to the Caribbean.

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 within the University to encourage students from different colleges and disciplines to work together toward a common goal. These programs aim to provide a more diverse and comprehensive educational experience.

Medical Scientist Training Program

The Medical Scientist Training Program (MSTP) at the University is an interdisciplinary M.D.-Ph.D program offered jointly by the College of Medicine and the Graduate College. The program is designed to provide graduates with the skills and knowledge necessary to pursue a career in medical research.

Neuroscience Program

The neuroscience program is designed to provide interdisciplinary and interdepartmental approaches to graduate education and research training aimed at understanding the structure, function, and development of the nervous system and its role in behavior. The program offers courses in neuroscience, cognitive science, and behavioral science.

Physician Assistant/Preventive Medicine and Environmental Health Joint Program

Students in the College of Medicine and the College of Public Health have the opportunity to pursue a joint degree in Physician Assistant and Preventive Medicine and Environmental Health through a cooperative program that offers a unique blend of academic and clinical experiences.

The Project on Rhetoric of Inquiry (PROCHO)

The project on rhetoric of inquiry (PROCHO) is a research project that focuses on the role of rhetoric in academic disciplines and its impact on the way students perceive and engage with academic content.

Transportation Studies

The program in Transportation Studies is an interdisciplinary program that focuses on the planning, analysis, and operation of transportation systems. Students participate in the program in conjunction with work toward a graduate degree in civil and environmental engineering, geography, or urban and regional planning.

Urban and Regional Planning

The program in urban and regional planning is a professional master's program that focuses on the planning, analysis, and operation of transportation systems. Students participate in the program in conjunction with work toward a graduate degree in civil and environmental engineering, geography, or urban and regional planning.

Research Resources

The many and diverse research activities of the University are centrally administered by the Office of the Vice President for Research and Development. This office provides resources and support to researchers across the University, including funding opportunities, access to facilities, and assistance with proposal development.

Financial Assistance

The Office of the Vice President for Research and Development manages a variety of financial assistance programs, including grants, scholarships, and fellowships. These programs are designed to support students and researchers in their academic and professional endeavors.

Teaching Research Assistantships

Assistantships are available in most departments, typically ranging from $5,000 to $9,000 per year for half-time assistance. Assistantships are also eligible for tuition scholarships. Nonresident assistants' income is not subject to taxation.
Graduate College

University Teaching-Research Fellowships
For first-year graduate students entering doctoral programs; typical stipends are $10,000 per year on a year-round basis, with all tuition paid, for as many as four years. Recipients have teaching and research assignments but may carry full course loads at the same time; in one year out of four and in all summers, recipients may pursue studies, research, or writing full time.

The University of Iowa Fellowship Program
For first-year graduate students entering doctoral programs; typical stipends are $15,500 per year on a year-round basis, with all tuition paid, for as many as four years. Departmental participation assures that the recipient will be involved in teaching, research, and departmental affairs; in two years out of four and in all summers, recipients may pursue studies, research, or writing full time.

Scholarships
Scholarships provide up to full tuition and fees.

Graduate Fellowships
Graduate Fellowships provide $8,140 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 traineeships, part-time employment in research, or part-time teaching appointments. Under the leadership of the Vice President for Educational Development and Research, a council of institutions on public and private agencies that provide public research and graduate study. A considerable amount of 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 submit a formal application statement from the director of admissions. Applicants may obtain the proper form from the director of admissions. (The University of Iowa, Iowa City, Iowa 52242). In addition to these forms, official transcripts from each undergraduate and graduate institution attended must be submitted to the director of admissions by the designated deadline prior to the session in which admission is expected. Specific deadline dates will be established by the dean of the Graduate College and the director of admissions and printed in the Catalog and elsewhere.

B. Graduate Record Examination
All applicants prior to consideration for admission should take the General (Advanced) Test of the Graduate Record Examination (GRE) or, for applicants to graduate programs in business administration, the Graduate Management Admission Test (GMAT). Applicants for whom the admission dates 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 term of enrollment. The test is given several times a year at test centers under the direction of the Educational Testing Service, Princeton, New Jersey. The minimum acceptable level of performance on this test and its weight in the decision of admission of a student is left to the departments. Some departments in fields where GRE Subject (Advanced) Tests are available require these in addition to the General (Advanced) Test. Inquiries about the General (Advanced) Test may be directed to University Examination and Testing Service, and inquiries about the requirements of the Subject (Advanced) Test should be directed to the executive of the department in which the applicant is interested.

C. English for Foreign Students
Prior to consideration for admission, foreign students applying whose native language is other than English must take and pass a TOEFL (Test of English as a Foreign Language), unless they have received a degree from an accredited college or university in the United States, the United Kingdom, Canada, (except Quebec), Australia, or New Zealand. The examination is given at various times of the year and at many centers throughout the world. Inquiries should be addressed to the director, TOEFL Educational Testing Service, Princeton, New Jersey (08541).

Foreign students transferring from unfinished degree programs of other universities in the United States who have not taken this examination, or who have received a grade lower than the minimum established by the Graduate College must take the TOEFL test. Individual departments may require such students to take and pass a course at The University of Iowa in English usage designed especially for foreign students.

D. Early Admission
A student who is within six semester hours of having satisfied all the requirements for the bachelor’s degree at The University of Iowa or any other accredited college may be given provisional admission.

E. Candidacy
Admission to the Graduate College is not the equivalent of acceptance as a candidate for the master’s degree. Candidacy must be earned through work successfully completed (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 the specific program of study for which he or she desires to take a degree. The master’s degree is not granted on the basis of work prepared for the doctoral degree. Masters degrees in social sciences, history, American studies, the arts, and other special fields in which the number of applicants registered as “special students” is a special status in most paragraphs. Changes in the major or degree status may be made in the course of a student’s graduate study with the approval of the department to which the transfer is proposed. To effect such action the student must file a change of major or degree status in the Office of Admissions.

G. Status upon Admission
All students upon admission fall into one of the following categories:

1. Regular—Students who have met the minimum requirements for admission and who have been accepted by a department, or have a departmental degree program, for work leading to a graduate degree or certificate or professional or personal improvement.

2. Conditional—Students who are interested in working toward a graduate degree or certificate but who are required by
department to demonstrate their ability to do satisfactory graduate work before being admitted to regular status. To be admitted on a conditional basis, the student must be recommended by a department, which will assume responsibility for advising him or her. See each department's grade-point requirements, "Section 14." The student on conditional status must achieve regular status within two sessions of registration in the Graduate College by satisfying grade-point average of at least 2.50 (3.00 for doctoral students) and acceptance by the major department, if so dismissed.

3. Special—Students with a valid bachelor's degree and at least a 2.33 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 another 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 is allowed no 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 requirements. For non-doctoral students, a minimum grade-point average of 3.00 is required for admission to conditional status. A minimum of 3.50 grade-point average is required for admission to regular status. The grade-point average is computed only on graduate work if the student is in residence for the graduate hours. If the student has not completed 12 graduate semester hours, the grade-point average is computed upon the undergraduate grade-point average. 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 the point to be designated by the Graduate College director, written papers shall be forwarded to the department concerned for examination and election. Students applying for admission to a doctoral program with 12 or more semester hours of graduate work must meet a minimum grade-point average of 3.00 on the graduate work. For students with less than 12 semester hours of graduate work, a minimum of 2.70 is required on the entire record of college work.

For State Board of Regents' formal admission requirements, see "Appendix" of the Catalog.

I. Admission of Faculty Members to Graduate Study

Persons who hold faculty rank of assistant professor (including clinical assistant professor) or above at the University of Iowa may be admitted as special students. (See "Section G" above.) A person holding faculty rank as specified above may petition the Graduate College dean for permission to enter a departmental program for work leading to an advanced degree, certificate, or professional improvement except in the department of his or her appointment or a closely related department. Such petitions must have prior approval of the department of appointment, dean of the college of appointment, the department in which study is to be pursued, and the Graduate Council.

J. Readmission

Students who are admitted to and enroll in the Graduate College, but who then fail to register for a period of 36 months or more, must apply for readmission. Their acceptance is dependent upon departmental approval for the session in which readmission is desired. Consideration of the applications for readmission will be governed by the departmental and Graduate College admission standards in effect at the time of reaplication.

Section II. Registration

A. Standard Schedule

Students registered in the Graduate College may register for no more than 15 semester hours of credit in graduate courses. In a schedule of mixed graduate and undergraduate courses, two hours of undergraduate credit may be substituted for one semester hour of graduate credit, with registration limited to a total of 18 semester hours. This equivalency applies to the calculation of academic load only. Graduate credit is not given for courses numbered under 100. The maximum for the eight-week summer session is eight credit hours, or nine semester hours if two or more semester hours of undergraduate work are included.

The maximum semester-hour registration for work solicited 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. (Full-time are required to carry at least nine semester hours during a semester as a condition of their appointments.) One-quarter-time and one-third-time appointments are permitted to register for the maximum 15 semester hours per semester and eight semester hours during the eight-week summer session.

B. Courses Not Included in Total Registration

In addition to the full schedule, a graduate student may register for courses printed in the Schedule of Courses as carrying zero semester hours credit.

C. Changes in Announced Credit

Graduate students may not register for more credit in any course than that printed in the Schedule of Courses, but may register for less credit, or no credit, by permission of the instructor. The number of courses a graduate student may take for limited or no credit is subject to the consent of the advisor and the approval of the dean of the Graduate College.

D. Reduced Schedules for Teaching and Research Assistants and Other Appointees

1. One-half-time appointees may register for not more than 12 semester hours during a semester or six semester hours during the eight-week summer session.

2. Five-eighths-time appointees may register for not more than 10 semester hours during a semester or five semester hours during the eight-week summer session.

3. Two-thirds- and three-quarter-time appointees may register for not more than nine semester hours during a semester or five semester hours during the eight-week summer session.

4. Seven-eighths-time appointees may register for not more than seven semester hours during a semester or three semester hours during the eight-week summer session.

5. Full-time appointees, including full-time instructors, may register for not more than six semester hours during the regular semester and three semester hours during the eight-week summer session.

E. Retroactive Registration

No form of retroactive registration is permitted.

F. Registration for Part of a Session

A graduate student may register at any time during the semester or the eight-week summer session for not more than one semester hours or credit for each of the remaining weeks of classes (not including the examination period) in the term. The total registration may not exceed the 15 semester hours permitted for a semester and the eight semester hours permitted for the eight-week summer session. Registration after the last day of the third week of a semester or the third day of the second week of a summer session is permitted only in courses involving special projects, readings, individual study, thesis, or research, with the signed approval of the instructor concerned and the Graduate College dean.
G. Extramural Registration
After admission to a departmental program in the Graduate College, registration for work done off campus may be accepted for residence credit under the following circumstances.
1. Traveling Scholar Program of the Committee on Institutional Cooperation (see "Section III").
2. Research at approved locations under the direction of members of the graduate faculty of The University of Iowa.
3. Field work as part of a regularly scheduled course of research.
4. Courses taught off campus by members of the graduate faculty (see "Section X.F."
5. Minimum semester hours required for the master's and doctoral degrees.
6. Residence credit from another institution (see "Section V.B.")
7. As many as nine semester hours of graduate work taken at the Quai-Citrus Graduate Center from faculty other than faculty of the Iowa Regents' universities, provided the work is acceptable to the student's major department in the approved degree program.
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 work may be counted as residence credit if the student has been admitted to a departmental program in the Graduate College (see "Section I.C.").
Fees for special courses offered by the University may be paid after registration if the student is currently registered.

I. Correspondence Courses
Correspondence courses do not count as residence credits. More than nine semester hours of graduate correspondence work can be applied toward an advanced degree. Such credit must be acceptable for the student's plan of study and must be earned after the student has enrolled in the Graduate College. In some instances, graduate-level correspondence credit earned after a student has received a bachelor's degree but before enrolling in the Graduate College may later be counted toward an advanced degree with approval of the Graduate College dean upon recommendation of the major department.
A graduate student may not register for correspondence courses without the approval of the executive of his or her major department and of the Graduate College dean.

J. System of Course Numbers
Courses primarily for graduate students are numbered 500 or above in each department. Courses open to and carrying credit for both graduate and undergraduate students are numbered from 100 to 199; courses below 100 are not accepted for graduate credit. Graduate credit may not be earned for taking courses numbered below 100 by registering in such courses in readings, special projects, or independent study having course numbers of 500 or above.

K. Auditing of Courses
Upon recommendation of the instructor and the advisor, the dean of the Graduate College may grant permission to graduate students to audit courses for zero credit. Auditing is permitted only for a student who is currently registered.

L. Dropping of Courses
All graduate students who drop courses after the deadline date established by the dean of the Graduate College for each session and published by the registrar shall receive the grade of "F" unless the prior registration is withdrawn. This regulation may be waived by the Graduate College dean 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 reenroll.

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 possible host institution to regard to a visiting arrangement.
2. After agreement by the student's adviser and the faculty member at the host institution, graduate dean/s 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 host university, 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 per year or three quarters on another campus. Each university retains its right to accept or reject any student who wishes to study under CIC auspices.

Section IV. Academic Standing, Probation, and Dismissal
A. Nondoctoral Students
A student on conditional status will be placed on probation if, after completing eight semester hours of graduate work, his or her 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, his or her grade-point average remains below 3.00, the student will be placed on academic probation.

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, his or her cumulative grade-point average in at least 3.00, the student is restored to good standing.

C. Restriction on Students on Probation
A student on probation shall not be permitted to take comprehensive or final examinations leading to any degree or certificate, nor may the student receive any grades of A or B or above.

D. Departmental regulations and Dismissal from a program
In addition to the above University-wide requirements, departments may establish further requirements which determine the extent of students standing with respect to probation and dismissal. To this end, each department or program shall compile a written list of standards and procedures for work in the area. These documents shall be on file in each department or program office and the office of the Graduate College dean. Copies are to be available for students in the departmental office and departments shall make every reasonable effort to inform students. Upon changes in standards or
procedures shall be communicated to the department to which the Graduate College dean, and shall afford a fair and expeditious review. A description of these procedures shall be included in the departmental regulations described above. (See "Section IV.D.")

F. Graduate College Review of Departmental Dismissal

Questions involving judgment of performance will not be reviewed beyond the department level. If, however, the student feels there has been unfairness or some procedural irregularity concerning dismissal, the student may request a review by the Graduate College. This review may be conducted by the Graduate College dean alone, or the dean may appoint a Graduate College committee consisting of both student and faculty members to conduct the review and recommend to the dean possible courses of action. The review by the Graduate College dean is final.

Section V. Credits

A. Transfer of Graduate Credit

Graduate work at other institutions will be entered on the student's permanent record by the registrar and a report of this action will be sent to the student and to his or her major department. Credit for courses toward an advanced degree at Iowa must have the approval of the major department and the dean of the Graduate College.

B. Residence Transfer Credit

After admission to a departmental program in the Graduate College, residence graduate credit from another Iowa Regents' university may be counted as residence credit at this institution, provided each work is acceptable to the student's major department on the basis of the department's determination of its applicability toward the degree. (See "Section X.G.")

C. Reduction in Credit

For courses or seminars in independent study, thesis, and research, an instructor may report less credit toward course credit or semester hours for which a student is registered.

D. Graduate Credit for Veterans

Credit may be granted for studies pursued in war and military situations under such regulations as may be formulated by the national educational agencies and under such adaptation of standing rules as the Graduate Council may authorize from time to time to meet situations of similar nature. The value of such credit in satisfying requirements for a degree will be determined by the major department with the approval of the dean.

E. Withdrawal of Registration and Proportional Credit for Students Entering Military Service

1. Students who leave within the first six weeks of the semester receive no credit.
2. Students who leave within the period of seven to nine weeks receive one-half credit.
3. Students who leave within the period of ten to twelve weeks receive two-thirds credit.
4. Grade official reports of the course(s) and work for any transfer credit.

B. Credit is to be awarded for courses taken during the summer sessions.

F. Course requirements only alter after the student returns and then only with the department's approval.

5. Students who compete the twelfth week receive full credit.

6. Grade reports for full credit period.

7. In each instance the instructor reports the student's credit grade, and date of withdrawal. No credit is granted unless the student's work is satisfactory at the time of leaving.

The amount of credit in thesis and research is to be reported to the registrar by individual instructors on the above basis except that less or zero credit may be assigned.

Section VI. Marking System

A. Marks Carrying Graduate Credit

These are A, A-, B+ , B, B-, C+, C, C-, and P - satisfactory.

B. Marks Carrying No Graduate Credit


C. Audit

R is assigned when a student registers for zero credit auditors at an auditing throughout the course. If the student fails to meet the instructor's requirements for class credit, W is assigned.

D. Incomplete

The grade of I is to be used only when a student's work during a session cannot be completed because of illness, accident, or other circumstances beyond the student's control. In registrations for thesis, research, or independent study, the satisfactory/unsatisfactory grades may be applied. (See next paragraph, "E.") Students who receive the mark of I must remove that mark within the first session of registration after the closing date for the session for which it is given, or else the grade becomes F except that students with I's from the spring semester will be exempt from completing the course during the succeeding semester session.

Specific deadlines for the submission of student work to the faculty and for the faculty's report on grade is the registrar will be set by the Graduate College dean for each session and printed in the academic calendar. Courses may not be repeated to remove incomplete; removal of an I is accomplished only through completion of the specific work for which the mark is given.

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5. Students who compete the twelfth week receive full credit.

6. Grade reports for full credit period.

7. In each instance the instructor reports the student's credit grade, and date of withdrawal. No credit is granted unless the student's work is satisfactory at the time of leaving.

The amount of credit in thesis and research is to be reported to the registrar by individual instructors on the above basis except that less or zero credit may be assigned.

Section VI. Marking System

A. Marks Carrying Graduate Credit

These are A, A-, B+, B, B-, C+, C, C-, and 3- satisfactory.

B. Marks Carrying No Graduate Credit

These are D, D-, D-, F, F-, F-, W, Incomplete, W, Withdrawal without credit, R, Registered, and U, Unsatisfactory.

C. Audit

R is assigned when a student registers for zero credit auditors at an auditing throughout the course. If the student fails to meet the instructor's requirements for class credit, W is assigned.

D. Incomplete

The grade of I is to be used only when a student's work during a session cannot be completed because of illness, accident, or other circumstances beyond the student's control. In registrations for thesis, research, or independent study, the satisfactory/unsatisfactory grades may be applied. (See next paragraph, "E.") Students who receive the mark of I must remove that mark within the first session of registration after the closing date for the session for which it is given, or else the grade becomes F except that students with I's from the spring semester will be exempt from completing the course during the succeeding semester session.

Specific deadlines for the submission of student work to the faculty and for the faculty's report on grade is the registrar will be set by the Graduate College dean for each session and printed in the academic calendar. Courses may not be repeated to remove incomplete; removal of an I is accomplished only through completion of the specific work for which the mark is given.

requirements only alter after the student returns and then only with the department's approval.

5. Students who compete the twelfth week receive full credit.

6. Grade reports for full credit period.

7. In each instance the instructor reports the student's credit grade, and date of withdrawal. No credit is granted unless the student's work is satisfactory at the time of leaving.

The amount of credit in thesis and research is to be reported to the registrar by individual instructors on the above basis except that less or zero credit may be assigned.

Section VI. Marking System

A. Marks Carrying Graduate Credit

These are A, A-, B+, B, B-, C+, C, C-, and 3- satisfactory.

B. Marks Carrying No Graduate Credit

These are D, D-, D-, F, F-, F-, W, Incomplete, W, Withdrawal without credit, R, Registered, and U, Unsatisfactory.

C. Audit

R is assigned when a student registers for zero credit auditors at an auditing throughout the course. If the student fails to meet the instructor's requirements for class credit, W is assigned.

D. Incomplete

The grade of I is to be used only when a student's work during a session cannot be completed because of illness, accident, or other circumstances beyond the student's control. In registrations for thesis, research, or independent study, the satisfactory/unsatisfactory grades may be applied. (See next paragraph, "E.") Students who receive the mark of I must remove that mark within the first session of registration after the closing date for the session for which it is given, or else the grade becomes F except that students with I's from the spring semester will be exempt from completing the course during the succeeding semester session.

Specific deadlines for the submission of student work to the faculty and for the faculty's report on grade is the registrar will be set by the Graduate College dean for each session and printed in the academic calendar. Courses may not be repeated to remove incomplete; removal of an I is accomplished only through completion of the specific work for which the mark is given.
Grades of S and U may be used for registrations in thesis, research, independent study, and special projects. 5—satisfactory means that the student receives credit for the work; U or unsatisfactory means that he or she receives no credit. Neither S nor U is used in computing grade-point averages. At a later date, the instructor may change the S to a letter grade. In addition, departments may ask the Graduate College for permission to use grades of S and U as described above for courses which, because of their secular or experimental nature, are judged to be more appropriate for such grading. In general, these requests may be granted for no more than one semester and must be reviewed by the Graduate Council before being granted for longer periods. The type of grading system to be used in the above courses should always be mutually understood by the instructor and student.

Section VII. Graduate Appointments

A. Scholarships
Scholarships are competitive and are awarded on a merit basis. 1. Eligibility for graduate scholarships and stipends will include: (a) registration in the Graduate College; (b) cumulative grade-point average of at least 3.00; (c) a GRE score at a GMAT score above a point to be designated by the Graduate College dean; (d) a satisfactory rate of progress in completing the program for the degree.

2. Preference will be given to candidates for the doctoral degree.

3. Recommendations for graduate scholarships may be made to the Graduate College by the appropriate department executive director, dean or chair. A graduate scholarship may be awarded without or not a student being on a departmental university. The amount of scholarship for the academic year may vary, but in no case exceed the comprehensive fee be assessed. Scholarship will be credited to the student's University.

B. Graduate College Fellowships
Fellowships are awarded by the Graduate College upon recommendation by departments to students with outstanding academic records. Fellowships must be registered as full-time students. The primary purpose of the search 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 Council on consultation with the Graduate Council.

C. Faculty Research Assistantships
Faculty research assistantships are awarded to qualified graduate students and serve two purposes: to provide research service to professors whose offices of the academic staff and to provide appointments experience for graduate students who are in training in research. No more than 10 hours of service per week are required of a half-time assistant. Other part-time assistantships are awarded in grades or numbers described; a limited academic schedule is permitted (see section 5.67). Appointment orders are made for the fall through academic year, but appointments may be made for other periods of time by the department. Stipends vary with the qualifications of the appointee and the amount of service rendered. Faculty research assistants appointed by the Graduate College are on appointment of the department, are limited to work in the Graduate College, and should be accompanied by recommendations and/or a letter recommending the student's qualifications.

D. Graduate Assistantships
These assistantships serve two purposes: to provide the instructional program of the university and the preparation of future college teachers. In order to achieve both purposes, scholarship or 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 recommendations of the department.

E. Eligibility for Scholarships, Fellowships, and Research Assistantships
Scholarships, fellowships, and faculty research assistantships on the Graduate College budget may 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 advanced or retained an appointment until after approval for admission to the Graduate College by the director of admissions.

F. Dismissal of Assistants
A uniform policy defining procedures to be followed in dismissing 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 tenure research assistant.

H. Loans
Graduate students requiring financial assistance may apply to 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 traineeships, part-time employment on research projects, or part-time teaching. Inquiries should be addressed directly to the major department.

J. Research Associateships and Postdoctoral Fellowships
These positions for independent research. Appointment is made through the Office of the Vice President for Academic Affairs. Graduates in the Graduate College.

Section VIII. Advanced Programs Offered in the Graduate College
The subject areas in which the Graduate College offers programs are listed under "Advanced Degree Programs" at the beginning of the "Graduate College" section of the Catalog.
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 30 semester hours required for the degree at least 24 semester hours must be completed under the auspices of The Graduate College. After admission to a departmental program in the Graduate College, a frozen list of extramural registration may qualify for warden fulfillment of the 24-hour residence requirement (see "Section H.O. Extramural Registration") in addition to regular campus registration. However, at least eight semester hours on campus are required, except for those departmental programs which ensure sufficient interaction between the students and the graduate faculty and have received approval from the Graduate Council and the dean of the Graduate College for reduction of this on-campus requirement.

E. Reduction of Old Credits
Credits for a master's degree dating back more than 10 years from the session in which the degree is to be conferred and not counted toward fulfillment of degree requirements. This rule may be waived by the dean in cases affected by military service.

F. Limit on Professional Courses
Work taken by a student in the colleges of Dentistry, Law, or Medicine while enrolled for a professional degree may be credited to a graduate program leading to a master's degree if it is taken after the student has earned a bachelor's degree, or has completed work equivalent to that required for a bachelor's degree at The University of Iowa. The work accepted for credit in other professional colleges will be counted as part of the plan of study approved by the student's advisor. Work completed while registered for a professional degree program in medicine, or dentistry will be counted as part of the degree requirements. The student in medicine or dentistry must be registered in an appropriate joint degree program.

G. Two Master's Degrees
The granting by this University of two master's degrees simultaneously or in succession requires the satisfaction of all conditions 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 credits.

H. Master's Degree with Thesis
Not more than eleven semester hours of credit for thesis research and writing shall be counted in satisfying the 30-semester-hour minimum requirement. The thesis may be a scholarly study or an artistic production. One copy of the thesis, complete and in final typed form, must be presented to the Graduate College for a check of formal characteristics not later than four weeks before the graduation date on which the degree is to be conferred. (See the Graduate College Thesis Manual.) After approval by the Graduate College and by the thesis committee, a 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 "E. Examinating Committee").

I. Master's Degree without Thesis

A master's degree without thesis, consisting of at least 30 semester hours of graduate study, may be awarded upon the completion of a curriculum prescribed by a department and approved by the Graduate Council.

J. Final Examination
The requirements for all master's degrees include a final examination which, at the discretion of the major department, may be written or oral or both. Such an examination will not duplicate course examinations. It will be evaluated by the examining committee as satisfactory or unsatisfactory, with two unsatisfactory votes making the committee report unsatisfactory. The report of the final examination must be delivered to the Graduate College not later than 68 hours after the examination.

If the department so recommends, a candidate who fails the examination may present a written examination for a second examination, not sooner than the semester following the first 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. Examinating Committee
The examining committee for the master's degree consists of at least three members of the graduate faculty, appointed by the Graduate College dean upon recommendation of the major department or program, at least two of whom are from the major department. If the examination covers work in another department, one member of the committee must be from that department. Upon recommendation of the major department, the dean may appoint a candidate for the master's degree who is not necessarily a member of the graduate faculty to serve as voting member of the examining committee, and, if this is his or her...
Section XI. Two-Year Degrees

A. Master of Fine Arts Degree

This degree is awarded for creative work in the visual arts: drama, music, dance, or literature. It is designed for students preparing themselves professionally for 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 poem, a musical composition, a dancing performance, or any other approved artistic accomplishment.

The program for the Master of Fine Arts requires at least two years of residence credit in a graduate college. 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 while the student is working toward the Master of Fine Arts degree, but the student must meet all requirements for each degree separately, with a minimum combined total of 60 semester hours of graduate credit.

For other requirements see “Section XII. Plan of Study; “C. Major and Related Fields”,” “F. Course Requirements”, “J. Final Examination”, and “K. Examining Committee.”

B. Specialist in Education Degree

This degree is granted upon completion of a program of study and credit for one year, plus one or two semesters of field experience designed for a graduate preparing for teaching, administration, and supervision, and special assignments in education. Of the minimum of 60 semester hours required for the degree, at least 24 semester hours must be in residence at this university, of which 15 semester hours must be in residence 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 flexible to meet the student’s needs and level of experience, and electives. Four semester hours of research culminates in a writers report.

Courses successfully completed ten or more years prior to the final examination will be evaluated by the department in order to determine the credit “that shall be allowed for such work. Evaluation of such courses 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 prescribed for the one-year master’s degree in “Section XII. Plan of Study”,” “C. Major and Related Fields”,” “F. Course Requirements”, “J. Final Examination”, 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 fulfilling 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 3-credit comprehensive examination, written or oral or both, covering all work for the degree.

The requirement of 60 semester-hours may be interspersed to seven a student who can satisfy the faculty of the school that he or she has completed, in the junior or senior undergraduate years, the equivalent of one semester (or parts of the graduate curriculum in social work) may be permitted, upon recommendation of the faculty of the school, to qualify for the M.S.W. degree on less than 60 semester hours. In no case may a student qualify for the degree on less than 45 semester hours of graduate credit.

The curriculum is organized into four areas: general 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 arranged sequentially, students enter the School of Social Work on August 15. For other requirements, see “Section XII. Plan of Study; “E. Requirements of Old Credits”,” “F. Limit on Professional Courses”,” “G. Master’s Degree with Thesis”,” and “H. Examining Committee.”

Section XII. Doctor’s Degrees

A. Character of Degree

The Graduate College awards two doctorates, the Doctor of Philosophy and the Doctor of Musical Arts. The doctorate is the highest degree awarded by the University. The Doctor of Philosophy degree indicates marked excellence in research or other creative work, and superior comprehension in the discipline. The Doctor of Musical Arts degree indicates marked excellence in performance and pedagogy.

B. Prerequisites

The candidate must present evidence of having completed a satisfactory amount of undergraduate work in the subject proposed for investigation or, in the case of deficiency, must register for prerequisite courses.

C. Residence Requirement

The doctorate is granted primarily on the basis of achievement demonstrated in 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 dissertation. All the units beyond the first 74 semester hours of graduate work, this requirement can be met either by (1) enrollment as a full-time student and registration for at least 12 semester hours each semester during which the student holds at least a part-time assistantship, or by (2) enrollment for a minimum of six semester hours in each summer semester during which the student holds a part-time assistantship.

D. Plan of Study

The development of a plan of study at the doctoral level is the responsibility of the student working together with her or his advisor. A formal plan of study must accompany the departmental request to the Graduate college for permission to conduct the comprehensive examination. The plan will provide a listing of all graduate courses taken prior to the doctoral program and a listing of courses in progress or to be completed during the comprehensive examination.

E. Ad Hoc Interdisciplinary Programs

A student may propose a plan for an Interdisciplinary Program, including the plan for the comprehensive examination, of at least three faculty members and the department, to be directly concerned, which shall be designated as the sponsoring department. Final approval of such programs is granted by the Graduate College after all members to the student’s supervisory committee are added to the sponsoring departmental faculty. The degree will be awarded in the interdisciplinary field created in the student’s program and, preferably, the name of the sponsoring department.

F. Reduction of Old Credits

Courses taken ten or more years prior to the comprehensive examination will be evaluated by the major department in order to determine the number of credits that shall be allowed for such work. Evaluation of such old credits will be reported to the Graduate college by the departmental executive at the time of submission of the plan of study.
G. Limit on Professional Courses

Work taken by a student in the colleges of Law, Medicine, or Veterinary Medicine for a professional degree may be credited to a graduate program leading to a doctoral degree if it is taken after the student has earned a bachelor's degree. In general, work completed prior to entry into the college will be considered as a university course. However, work completed prior to entry into the college will not be considered as a university course.

H. Joint Program for Master's and Doctoral Degrees

Those students who expect to continue their training through the doctoral degree may file a joint program for the master's and doctoral degrees. The master's examination may be combined with the comprehensive examination for the doctorate. The examining committee for the exam will be responsible for the action on the examination. The examination committee for the doctorate will be responsible for the action on the examination. The examining committee for the doctorate will be responsible for the action on the examination.

I. Requirement in Foreign Languages

There is no general Graduate College requirement in foreign languages. Certain departments require competence in one or more foreign languages established by the department, the degree, or the student's program. These requirements may be waived in the departments of English, Modern Language, and other departments.

J. Comprehensive Examination

The candidate must pass a comprehensive examination, consisting of written or oral parts or both, at the discretion of the department. Admission to the comprehensive examination is granted upon the recommendation of the major department. The examination should be completed for the degree as soon as possible. If the student has completed the examination, the student's department may consider the examination to be satisfactory for the degree. The examination shall be completed within the time limits of the comprehensive examination. The examination must be taken by the student at the time of the comprehensive examination. The examination must be taken by the student at the time of the comprehensive examination. The examination must be taken by the student at the time of the comprehensive examination. The examination must be taken by the student at the time of the comprehensive examination. The examination must be taken by the student at the time of the comprehensive examination.
Section XIII. Exceptions

Petitions to waive these regulations may be made for appropriate and justifiable reasons on behalf of full-time graduate students through the departmental executive to the dean and the Graduate Council.

Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>909500</td>
<td>Ph.D. Comprehensive Registration</td>
<td>0</td>
</tr>
<tr>
<td>909501</td>
<td>Master’s Final Registration</td>
<td>0</td>
</tr>
<tr>
<td>909511</td>
<td>Interactions in London or City University</td>
<td></td>
</tr>
<tr>
<td>909525</td>
<td>Iowa Utopian Exchange Program</td>
<td></td>
</tr>
<tr>
<td>909550</td>
<td>CIE Summer Research Program</td>
<td>0</td>
</tr>
<tr>
<td>909565</td>
<td>Summer Program in Ireland</td>
<td>0</td>
</tr>
</tbody>
</table>

Lectures and field trips on geographical phenomena observable in Ireland (e.g., glacial features, hill and edge features, marshlands) lecture on the history, physical, and human geography of Ireland, offered summer sessions.

909512 CIE Public Program

Critical inquiry into the purposes, methods, and results of the investigation—not a mere recapitulation of the procedures followed—and intensive questioning on areas of knowledge contributing the immediate context of the investigation.

The final examination may not be held until the next session after the student passes the comprehensive examination or until the thesis is accepted for first deposit by the Graduate College; however, a student must pass the final examination no later than five years after passing the comprehensive examination. Failure to meet this deadline will result in a recommendation of the student to take 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 faculty of the Graduate College are especially invited to attend and, subject to the approval of the chairman, to participate in the examination.

The report of the final examination is due in the Graduate College office not later than 48 hours after the examination. The final examination will be evaluated as satisfactory or unsatisfactory. Two unsatisfactory votes will make the committee report unsatisfactory. In case of a report of unsatisfactory in the final examination, the candidate may not present himself or herself for reexamination until the next session. The examination may be repeated only once, at the option of the major department.

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. Upon recommendation of the department, except that department may request the dean's permission to replace one of the five members of the graduate faculty by a recognized scholar of proven qualifications from another academic institution. A member of the graduate faculty from outside the major department is required in those cases where a related field outside the major department is included in the comprehensive examination. For the final examination, one member of the committee must be a member of the graduate faculty from outside the major department.

Upon recommendation of the major department, the Graduate College dean may appoint additional qualified persons (not necessarily members of the graduate faculty) to serve as voting members of the examining committee. A voting member may be added at the discretion of the Graduate College dean.
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, through familiarization with the substance of legal principles and the operation of legal institutions is an important component. The University of Iowa program places equal emphasis on developing fundamental lawyerly 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 confront 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, argumentation, and clear, precise writing. Tact gathering, interviewing, counseling, drafting, transax planning, negotiation, and litigation are among the skills emphasized in the upper years. Iowa is unique in its emphasis on the development of professional skills in the seminars in a small-group, individualized training format; many law schools rely heavily upon graduate assistants or adjunct instructors to teach these lawyer’s skills.

The University of Iowa College of Law confers upon its graduates the degree of Juris Doctor (J.D.). To be eligible for the degree, students must satisfy the residence requirement, complete a minimum of 84 semester hours of course work, pass and complete all required courses, achieve a cumulative weighted grade average of at least 65, and satisfy the college’s five-unit research and writing requirement.

Program of Study

Full-Time Policy

The faculty believes that students receive a better legal education when they devote substantially all of their time to educational pursuits. For this reason, students are expected to pursue their law studies on a full-time basis. This policy coincides with the accreditation of the American Bar Association and the Association of American Law Schools.

In extraordinary circumstances, it may be possible for students to enroll for less than 10 semester hours per semester. Students who believe they may be unable to attend on a full-time basis should contact the dean’s office before registering for classes.

Options for Full-Time Study

The college offers two starting dates to entering students: late May (at the beginning of the fall semester) or late August (at the beginning of the fall semester). Most students elect to enter law school in the fall and expect to graduate in May of their third year of study. These students also may attend summer school at any point during their careers.

A class size of up to 40 students is allowed to enter law school in May of the year for which they applied. Students in the entering class complete nearly a full semester of work in the first eleven-week summer session, and if they remain on the accelerated track by attending summer school in each subsequent summer, they can graduate nine months earlier than would otherwise be possible. Then, the accelerated student who begins law school in the summer of the legal graduate in August 1980. Students who begin school in the accelerated program, however, are not required to continue 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 all courses designated as first-year courses and may not register for different courses or lower semester hours without permission of the dean. No student may take more than 36 semester hours per semester or 13 semester hours in the summer session without permission of the dean.

Summer Session

The summer session consists of two periods of five and one-half weeks, during which six to eight upperclassmen and three in first-year courses usually are offered. Nonmatriculated students may attend either or both periods. Approximately 250 students attend the entire 11-week session.

First-Year Small-Section Program

One of the distinctive benefits of legal education at the University of Iowa is the first-year "small section" program, which integrates training in basic lawyer skills into substantive courses taught by regular, full-time faculty. The program's purposes include giving careful attention to 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 20 students. In the spring (or fall for accelerated students), each section contains approximately 20 students. The subject matter of the small-section courses varies from year to year, but has included virtually every course in the first-year curriculum.

In the second-year small-section course, students are given a series of challenging assignments, each with a different educational objective. Faculty members provide extensive critiques of students' performance and discuss the assigned exercises both in class and in small section.

First-year students receive one additional credit hour for their first-semester small section and two additional credit hours for their second semester with section. A mandatory course is applied to the grade distribution in all first-year courses.

Upper-Class Program

In the second and third years, students have the opportunity to gain exposure to a broad array of substantive areas of the law, to concentrate course 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 91-210 Appellate Advocacy I in the second year. Before graduating, all must take 91-232 Constitutional Law II and 91-308 Professional Responsibility. Each student also must earn five writing credits in order to graduate. Students earn one of the credits automatically by satisfactory completion of 91-210 Appellate Advocacy I. They can earn the remaining four credits through any combination of courses and activities that carry writing credit, including seminar papers, small section and seminar drafting courses, independent research papers, Asian Law Review, Journal of Corporation Law, 94-404h (3rd Law Clinic, 91-841 Client Counseling 3-4 1-402) More Court Board, and advanced or extracurricular activities.

Legal Clinic

Students who have completed one half of the work toward their J.D. degrees are eligible to participate in the College of Law Legal Clinic Program, which offers 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 the practice of law, including fact investigation, pleaded litigation, legal research, and courtroom proceedings. Students in the clinic program represent indigent clients in several eastern Iowa communities in a wide range of civil and criminal cases, represent other clients at Iowa correctional institutions in habeas corpus and civil cases, and work in matters relating to social welfare, handicapped rights, and civil rights.

Students in the clerkship program act as law clerks to trial court judges and public law officers. They observe court proceedings, conduct research, and draft legal memoranda on cases before trial courts.

Finally, students in the externship program are assigned to work in legal assistance in a variety of state agencies and offices.
Master of Comparative Law Degree Program

The College of Law offers a cross-disciplinary Master of Comparative Law (M.C.L.) degree to foreign-trained lawyers coming from outside the Anglo-American legal tradition. Candidates take a seminar that gives them a general introduction to the American legal system, they also write at least one substantial research paper. The balance of their course work is taken from the regular course offerings for the College of Law.

In recent years, graduates of this program have included lawyers from the Federal Republic of Germany, France, Italy, Laos, the Nationalist Republic of China, Pakistan, People’s Republic of China, the Republic of South Korea, and Thailand.

Student Life

There are currently 11 student organizations on the college, each student-trainee scholarly journals, and three coccacorps programs, each managed by students, that offer specific skills training.

The University Environment

The law school is an integral part of the university, yet in some ways it remains a separate entity. It is located on the west side of the Iowa River, five minutes from the main campus. The law building houses the school’s administrative offices, audiology, law library, conference rooms, and classrooms. Names of lawyers quickly become familiar among the law school, helping to forge students into the community on which the College of Law.

International Legal Studies

In keeping with its educational mission of encouraging the acquisition of broad social awareness and technical professional competence, the College of Law offers a strong program of study in the rapidly expanding field of international, comparative, and foreign law.

It does not essentially for three reasons. First, virtually any lawyer in this era of accelerating globalization may find himself confronted by problems that require knowledge and understanding of international law and foreign legal systems. Second, as professionals and community leaders, lawyers often are called upon to influence both directly and indirectly, the theory and conduct of United States foreign policy. And third, the study of international and comparative law, affording unique insight into the nature of law and legal process, helps to establish the necessary theoretical foundations upon which superior lawyering skills depend.

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In recent years, graduates of this program have included lawyers from the Federal Republic of Germany, France, Italy, Laos, the Nationalist Republic of China, Pakistan, People’s Republic of China, the Republic of South Korea, and Thailand.
Financial Aid

A comprehensive financial aid program at the College of Law attempts to assist all students who need funds in order to attend school full-time. However, since the financial resources of the law school are insufficient to subsidize the full cost of a legal education for every needy student, applicants and their families are expected to make a maximum effort to provide a reasonable portion of the students’ expenses. Students are required to contact the financial aid office at the college for further information about types of aid available.

Admission

Applicants for admission may have earned a baccalaureate degree at an approved college or university prior to commencing work in the US College of Law. The services of the College of Law graduates may be called upon to perform so are varied, and the possible fields of endeavor so broad and diverse, that the college presumes no uniform undergraduates program for those glutting in enter law school. With the assistance of faculty advisors, each student should develop an undergraduate program that explores and develops that student’s particular intellectual interests.

Iowa strongly endorses the three basic objectives recommended by a committee of the Association of American Law Schools: education for comprehension and expression in world; education for a greater understanding of individual institutions and values; and education for greater power in thinking. Anyone desiring to attend law school should keep these objectives in mind while planning an undergraduate course of study.

The association committee strongly emphasized that undergraduate education at all levels is important, and education in the law is more important than education directed too positively toward more professional training and practice. Students are urged not to sacrifice the broader perspective for detailed specialization.

Application Procedures

Applications may be obtained by writing to the Director of Admissions, The University of Iowa, Iowa City, Iowa 52242. Students must file their application and admission by March 1 preceding the semester in which they wish to enter. Applications should be returned to the Director of Admissions.

An evaluation of 100 must accompany each application unless the applicant’s enrollment application has been admitted to the University of Iowa. The law school is not a graduate of the University of Iowa. This fee is non-refundable except to residents of Iowa who are later admitted. Students with disadvantaged backgrounds who cannot afford the fee should apply for its waiver.

Applicants are responsible for submitting an official transcript from each college or university they have attended to the Law School Admission Services (LSAS) Box 3210, New York, NY 10156-0998. The College of Law is bound to receive the applicant’s LSAS report prior to the March 1 deadline for submission of applications.

In the LSAT-LSAS registration packet, applicants will find Law School Application Matching Forms. To protect the right to privacy, LSAS has agreed not to release LSAS reports to any school that does not participate with LSAS in a Law School Application Matching Form.

The University of Iowa cannot process an application without a Law School Application Matching Form. Therefore, applicants should attach or enclose the form with their application. Otherwise, processing of the application is delayed until the form is received.

Law School Admission Test

Applicants for admission must take the Law School Admission Test (LSAT) administered by the Law School Admission Services, Box 3210, New York, NY 10156-0998, and must have their LSAT report forwarded to the College of Law. The test is given several times each year and may be taken in numerous locations in the United States and abroad. Applicants are urged to take the test during the fall preceding the fall semester in which they are applying.

The test that is considered by the admissions committee for the summer or fall first-year class is the test given in February or April. If the test is taken in February, it may put the applicant at a competitive disadvantage since it takes at least four weeks for the college to receive the results. February testees must have their applications on file with The University of Iowa by the March 1 deadline. Foreign student applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL), which is administered by the Educational Testing Service, Princeton, New Jersey 08541.

Deposit

Applicants accepted prior to April 1 are required to make an advance, nonrefundable deposit of $50 by April 1. Applicants accepted after April 1 must make the deposit within two weeks after being notified of favorable action on their application. In either event, the deposit need not be made if a financial aid application is under active consideration. However, the deposit is due within two weeks after selection on the financial aid application. For those who qualify, the deposit is credited toward the first semester University bill. Applicants who fail to make the deposit within the time specified forfeit their place in the entering class.

Admission to the Iowa Bar

A rule adopted by the Iowa Supreme Court requires all law students who intend to apply for admission to the Iowa Bar to register that intentions with the court not 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 fall or, on the clerk of the Iowa Supreme Court.

Courses

First Year

01-110 Introduction to Legal Research 1.5

01-115 Undergraduate Methods of Legal Research: British, European, and Continental Comparisons 1.5

01-116 Civil Procedure 3.5

01-121 Contracts and Sales Trustees 3.0

01-124 Criminal Law 3.0

01-127 Constitutional Law 3.0

01-129 Contract and Sales Transactions 3.0

01-130 Criminal Law 3.0

01-131 Criminal Law 3.0

01-132 Criminal Law 3.0

01-133 Criminal Law 3.0

01-134 Criminal Law 3.0
The College of Medicine, as an integral part of the University, contributes to the educational programs of several hundred students, not only those in the health professions: dentistry, Medicine, Nursing, and Pharmacy, but also in the life sciences areas of the College of Liberal Arts and the health-related programs of other colleges. Additionally, it serves health professionals from throughout the Midwest who take part in a year-round program of continuing medical education, in which several thousand practicing physicians update their knowledge and skills through short courses, clinics, and conferences each year. It also expands and maintains educational opportunities in outreach health centers of the state, and it provides a statewide educational health care research.

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 broad public issues of delivery and reutilization of health care services. Its faculty members advise and serve on state and regional health planning councils, health boards, and various health agencies; some faculty also serve 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 cytopathology, perfusion, and biotechnology), physical therapists, and related health sciences.

Medical and associated medical science students have several opportunities to gain first-hand experience in physical offices and community hospitals. For medical graduates, the college offers fellowships and residencies in programs in six cities throughout the state. The college promotes the development of experiential programs that demonstrate methods of organizing health services at the local level.

Accredited by the Liaison Committee on Medical Education of the American Medical Association and the Association of American Medical Colleges, the College of Medicine meets the requirements of all state licensing boards. Its diploma admits the holder to all privileges granted to graduates of all medical colleges before such boards. All other professional programs administered by the College of Medicine are accredited by their respective accrediting bodies.

Faculty

Nearly all College of Medicine faculty members are full-time, their work in teaching, research, and clinical service being part of—not apart from—their work in teaching. Many have earned national and international honors.

Graduate Programs

The college offers programs leading to graduate degrees through the Doctor of Philosophy in anatomy, biochemistry, microbiology, hospital and health administration, human nutrition, pharmacology, physiology and biophysics, preventive medicine and environmental health, and radiation biology. In addition, graduate degree programs leading to a master's degree are offered in methodology and physical therapy.

Medical Scientist Training Program

An interdisciplinary M.D.-Ph.D. program offered jointly by the College of Medicine and the Graduate College, the Medica, "Scientific Training Program provides preparation for careers in medical science and academic medicine with emphasis on research and teaching. With support from the National Institutes of Health, the program integrates the requirements for doctoral training in sciences basic to medicine with the full clinical requirements of the medical curriculum. The program entails six to seven years of study. Further details are given in the program description.

Combined M.D.-Master's Degree Programs

Students who want to pursue the M.D. degree in combination with a master's degree program must gain admission to both the College of Medicine and the Graduate College and must make detailed arrangements with the graduate department chair and the associate dean for medical student affairs of the College of Medicine.

Interdisciplinary Programs and Centers

Interdisciplinary programs and centers have been developed that draw strength from the faculty of the college and the faculty available to them, without regard to their departmental units or to the separation 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 specialty program. Further information can be obtained from the associate dean for academic affairs.

The following centers are subdivisions of the College of Medicine.

Clinical Research Center

The Clinical Research Center provides the setting for patient-oriented research of disease processes. Studies of normal human physiology and biochemistry also are conducted. The center is a discrete unit with its own beds, patients, nursing staff, and laboratory personnel, enabling all faculty members to conduct carefully supervised studies that could not be accomplished with equal precision by placing patients in the resources of existing beds at the affiliated hospitals.

Mental Health Clinical Research Center (MH CRC)

The major emphasis of the MH CRC is the study of schizophrenia. The center provides the facilities for research linking the clinical picture of the disease with its underlying neurochemistry. The research units of the MH CRC conduct the necessary integrative and interdisciplinary research to advance the knowledge of the disease.

Cardiovascular Research Center

The Cardiovascular Research Center coordinates research and training programs related to cardiovascular diseases and encompasses the following federally funded programs: Program Project Grant on the Regulation of the Circulation in Pathological States, the Specialized Center of Research in Arteriosclerosis, Specialized Center of Research in Ischemic Heart Disease, Specialized Center of Research in Occupational and Immunologic Lung Disease, Program Project Grant on Cerebral Blood Flow, Juvenile Hypertension Program, Lipid Research Clinics Trial, several training programs, and a coordinated program of other interdisciplinary research supported by a number of individual project grants. Gifts from private donors have underwritten construction of two floors of cardiovascular research laboratories and administrative offices on the 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 associated endocrinologic diseases. It was established in 1979 with support from the Institute of Arthritis, Metabolism, and Digestive Diseases.

Cancer Center

A Cancer Center was established in 1980 to coordinate the efforts of University of Iowa laboratories for cancer research, education, and demonstration programs related to all aspects of cancer.
Digestive Diseases Core
Center
The center was formed in 1985 to study non-invasive and chemical control of the gastrointestinal tract. It includes research cores for neuroprotective, animal models, mobility, and analysis of data and bioinformatics.

Alzheimer’s Disease
Research Center
This center studies Alzheimer’s disease and related neurological conditions from the viewpoint of ophthalmology, neuroradiology, neurosurgery, and neurochemistry. The center’s purpose is to improve the diagnosis and treatment of these conditions and to contribute to a better understanding of the neural basis of cognition.

Educational and
Patient Care
Facilities
First- and second-year classes are taught in the Bowen Science Building and the Medical Laboratories.

A Health Sciences Library is a vital
resource centrally located on the medical campus.

Students acquire clinical experience in the 900-bed University of Iowa Hospitals and Clinics, in the Santore Veterans Administration Medical Center, and in a number of affiliated hospitals and ambulatory care centers throughout the state.

College of Medicine and College of Dentalistry faculty members make up the 400-member clinical staff at The University of Iowa Hospitals and Clinics, whose 16 clinical services are directed by the heads of the corresponding academic departments in the college. These faculty members also provide instruction for the 640 resident physicians and dentists who make up the staff house of the hospitals. The services, in which facilities are provided for teaching clinical medicine, are distributed in all medical specialties, and to internships and in a number of subspecialties.

The University of Iowa Hospitals and Clinics serve as a tertiary care center for the state of Iowa and portions of adjoining states, with most patients being referred for care and treatment not readily available in their home communities. For details about The University of Iowa Hospitals and Clinics, see the Veterans Administration Medical Center, and related academic and health service units, see “The University of Iowa Health Center” in the “Special Resources of Iowa” section of the Catalog.

Research Facilities
The Human Biology Research Facility, planned for occupancy in fall 1988, was designed to provide flexible research space that rapidly adapts to the changing needs of various interdisciplinary research activities. The facility will serve in addition to the Institute of Neurobiology, each of whom is researching a human biology program at the advancing edge of science, and will enable them to conduct research in close proximity to other select researches. In order to accomplish this, the facility’s laboratories have been designed to accommodate a wide range of research. The clinical, mechanical, and scientific systems, and available support services will offer the greatest flexibility and adaptability for current and future research.

In addition to the functional laboratory suites, specialized research facilities will be provided, each containing highly specialized research or equipment or environment. They will support researchers working within the building and others working on biological research outside of the building.

A number of facilities that support the research and teaching endeavors of College of medicine faculty are administered through the dean’s office. University of Iowa research facilities housed in the faculty of medicine include the Cell Sorting Laboratory, Facility for Protein Structure Studies, Elecromicroscopy Facility, and a Computer-Assisted Image Analysis Facility, (See “Research Activities” in the “Special Resources of Iowa” section of the Catalog.)

The animal care facility arranges for the purchase, maintenance, and record keeping of a wide variety of test animals. The biocomputer facility provides specialized equipment, construction, and repair services.

The Iowa University Affiliated Facility, a unit of the Division of Developmental Disabilities department of pediatrics, provides interdisciplinary training, exemplary services, technical assistance, and information dissemination and participates in research to enhance the quality of life for persons with developmental disabilities. Professionals from many disciplines (e.g., audiology, dentistry, education, family practice, pediatrics, nursing, nutrition, occupational therapy, physical therapy, psychology, exercise studies, social work, speech-language pathology) work together as teams to provide short- and long-term therapy and support in treatment of developmental disabilities.

The Office of Consultation and Research in Medical Education is made up of educators in a broad range of areas who serve the faculty, staff, and administration. The office provides educational consultation, in-service instruction, and support to educational research endeavors, and conducts faculty development activities.

The medical instrument facility designs and manufactures scientific equipment, providing precision machine services.

The medical graphics, photography, and television sections offer consultation, design, and production services in these various art forms. The spectrum of composition is greatly expanded by the Graphics, a computer-generated graphics system.

The PS facility meets federal guidelines for recombinant DNA research requiring P3 containment. It also can be used for research on other bacteriologic human or animal pathogens.

A facility for mass spectrometry provides service for the qualitative and quantitative identification of important biological molecules.

The Tissue Culture Hybridoma Facility provides tissue culture media for tissue culture. It prepares cell lines to form hybridomas from which monoclonal antibodies are isolated.

Doctor of Medicine
The University of Iowa College of Medicine accepts IUS students each year into its four-year course of study leading to the Doctor of Medicine (M.D.) degree.

The curricula in medicine at the University is based on a strong tradition of excellence. It is evaluated and revised continually to reflect the changing needs of the new physician and of society.

Basic Medical Sciences
[First Three Semesters]
The first three semesters present a core of sciences basic to the study of medicine.

First Semester
99:163 Biochemistry for Medical Students is centered around a series of clinical situations. The language of this discipline is presented in the context of problems the physician will meet. In the small-group discussions that follow the clinical series, students are asked to use various problem-solving approaches.

60:103 Gross Human Anatomy for Medical Students introduces the various areas of anatomical radiology and surface anatomy with a clinical correlation. A complete dissection of the human body is undertaken, and the relationship to the living system is stressed.

60:105 Medical Embryology offers lectures on human embryology, with emphasis on the clinical aspects of development. Registration is limited to medical students; graduate students are registered to 60:217. The course is offered fall semesters.

60:105 General Histology for Medical Students provides a course of study for the understanding concerning cellular and tissue structure and function needed for the work to be accomplished in physiology and pathology.
111.012 Human Dimensions in Medicine is designed to improve medical students' understanding of the importance of communication in the practice of medicine and to increase awareness of personal and social values. The course provides students with skills and experience through which they learn about and improve their ability to communicate sensitively with patients and colleagues.

63.110 Biostatistics provides 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

72.212 Medical Physiology offers students an understanding of responses that an organism gives to external stimuli and provides a basis for understanding the integrated function 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 exposure, students present their evaluations of the physiologic mechanisms at work in the clinical material. Some demonstrations are used.

61.103 Medical Microbiology includes immunology and presents a core of information on the classification and mode of action of infectious agents, as well as current trends in prevention and control of such agents. Laboratory work plays an important role in this course.

69.254 Medical Neuroscience is an integrated course dealing with basic principles of functioning of the central and autonomic nervous systems, with emphasis on the human central nervous system. The laboratory primarily involves the anatomical study of spinal cord and brain.

69.201 General Pathology for Medical Students is correlated with microanatomy in that it deals with the changes occurring in the body that are not visible by light microscopy. This course is self-paced, with students "testing out" of each segment as it is completed. Emphasis is placed on pathogenesis and altered function in cellular and tissue degeneration, infection, and growth disorders. Clinical problem solving and discussion periods have replaced laboratories in this course.

Third Semester

69.202 Systemic Pathology for Medical Students applies the principles given in the previous semester to specific diseases in an organ system approach. Student-centered learning is facilitated by discussion groups and practice in case analysis.

63.198 Preventive Medicine presents fundamental information to help prepare students in their roles as primary care physicians and public health aspects of medical practice.

71.185 Pharmacology for Health Sciences: Medical Biologies for 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.

Several elective courses are available to students during the third semester. These carry 2.5 semester hours of credit. Topics include areas not specifically covered in the regular curriculum and areas related to medical practice and the role of the physician. Typical examples are Perspectives in Aging, Nutrition, Human Nutrition, and Spanish for Health Professionals.

Introduction to Clinical Medicine (Fourth Semester)

A major interdepartmental course, 50.111, Introduction to Clinical Medicine, fills the fourth semester. It includes participation by a large proportion of the faculty and is vital in providing students with the tools for a lifetime of patient care.

The first series of mornings is devoted to introducing the patient as a person and giving guidance in interviewing, examination, and history taking. Following this is an intensive review of clinical medicine on an organ-system basis, given by teams of clinicians and basic scientists. The last group of mornings is spent in areas of medicine that do not fall naturally into organs systems, and on reemphases of some key subjects.

Throughout the 10 weeks of the course, students spend afternoons acquiring and practicing the clinician's skills in history taking and physical examination. Habits of care, concern, and compassion needed by all physicians are established in this semester. Toward the end of the semester, each student is evaluated individually several times to determine the level of skill achieved. If further work is needed, guidance and assistance are provided.

Clinical Clerkships (Third Year)

The third year includes the required clinical clerkships and presents students with opportunities to work with physicians in almost all areas of medicine as they care for their patients. Students spend three weeks in immunology, six weeks each in surgery, psychiatry, pediatrics, obstetrics and gynecology, and surgery and physiology, and two weeks each in anesthesiology, dermatology, neurology, ophthalmology—head and neck surgery, ophthalmology, surgery, and family practice. Students spend most of their time in Iowa City.

The clinical clerkship year is the most critical period of time in medical education, for it is when students take on the posture of physicians to learn first-hand the complexity of medical science when viewed at the bedside, and to understand the physician's responsibility for human life.

Period of Selective Study (Fourth Year)

Following the clerkships, the fourth year presents a period of selective study, giving students many options. The broad, comprehensive orientation to the different medical disciplines and the level of clinical sophistication achieved during the clerkship year qualify students to participate in a variety of medical experiences, ranging from advanced courses in specialty areas to community-based clerkships in primary care.

Financial Aid

The College of Medicine provides financial assistance on the basis of demonstrated financial need. Must aid is in the form of loans. The Professional Students Loan and Guaranteed Student Loan are federally limited or sponsored programs. The Medical Educational Assistance Program, Carroll Brown Medical Student Loan, and Student Loan are College of Medicine programs. The Dr. George Swanson Medical Student Loan is available to Iowa residents through the Iowa Medical Foundation of the Iowa Medical Society.

A limited number of grants are awarded each year to students who demonstrate exceptional need.

In certain situations, small, short-term emergency loans may be obtained through the college.

Information and advising on financial aid can be obtained through the Office of Student Services, College of Medicine.

Educational Opportunities Program

The Educational Opportunities Program provides financial and academic assistance to disadvantaged students from groups that are underserved 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 Colleges Application Service (AMCAS), a nonprofit 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 applicants are urged to apply as early as possible. The closing date is December 1.

Final application will be forwarded to applicants whose AMCAS applications pass a review conducted by the College of Medicine. A $10 fee must accompany the
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, and judgment to assume the responsibilities of a medical doctor. To perform its duties, the committee depends on the cooperation, advice, and judgment of faculty, students, and administration. The promotions committee consists of six members and the associate dean for medical education. There are five members, one of whom is designated by the dean to serve as chair. Two are from two basic science departments, one and two from the clinical departments. There is a medical student member from either the junior or senior class. The dean of the College of Medicine makes faculty appointments to the committee after consulting with the executive committee, and appoints the student member after consulting with the medical student council and the chair of the committee.

Regulations and Procedures In general, promotion from one grading period to the next is contingent upon the satisfactory completion of all of the requirements for each grading period. This is the prerequisite for the promotions 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 that student. Each student must demonstrate proficiency in each required course.

Evaluation of student progress is based on examinations or other tests as determined by each department or course and on clinical skills and competency as deemed appropriate by the department or course. The College of Medicine requires that all examinations test proficiency in a variety of cognitive, problem-solving, manual, communicative, and interpersonal skills and tests 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 F, P, and I. T. in the descriptive ratings, with only F, P, and I. used. The letter F indicates satisfactory achievement at the passing level. The letter I indicates "incomplete," indicating achievement at an exceptionally high level. The letter T. 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 three times each year, following the completion of each academic semester and at other times as requested by the associate deans for medical student affairs.

The committee reviews the course directors the records of all students who have received a grade of F or I during the previous grading period. The committee reviews the record of any student presented by the course directors or the associate deans for medical student affairs as doing continually poor academic work or failing to demonstrate proficiency in any of the eleven skills or abilities detailed above, or not meeting the medical ethics standards.

The committee considers other business or procedures as deemed necessary to perform its duties as set out in this charge.

The promotion committee recommends specific actions to be taken in the case of any student whose skills, knowledge, judgment, attitude, or character are found to be insufficient. These recommendations are forwarded to the deans for action. The deans may direct the student to attend a joint session to represent the faculty. Possible recommendations include challenging the student to improve and reenrollment, requiring the student to complete all or any part of the curriculum, and allowing the student to continue to register or withdraw

Students having unremedied grades of failure are placed on academic probation. A grade of incomplete, if not remediated in the time and manner specified in the promotion committee recommendation, becomes a grade of failure. Students who are on probation should be considered for dismissal if further academic difficulties arise.

The promotion committee presents all recommendations for suspension to the deans. The deans of Medicine and the associate deans for medical student affairs, in consultation, determine 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 F unless the entire registration is canceled.

Relationship to Course Directors Committees

The course directors committees provide guidance and counseling for students and act as a resource for information advice to the promotions committee.

Appeals

Students who want to appeal promotion decisions must submit an appeal in writing to the dean of the College of Medicine within two weeks after 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 sessions 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 student affairs.

Leaves are granted at the discretion of the dean.

Withdrawal

Students may withdraw from the College of Medicine upon approval of a written application submitted to the office of the associate dean for medical student affairs.

Reinstatement

Applications for reinstatement by students who have withdrawn voluntarily or who have been required to withdraw from the college must be received in writing in the office of the dean at least four months prior to the requested date of reinstatement.

The faculty is authorized to refuse continued enrollment on further registration to any student or if it before the student or the faculty has not lived up to the expected general fitness requirements for entering the college.

Division of Associated Medical Sciences

Degree of Doctor of Medicine (M.D.) and M.A. degrees are offered by the Medical College of Georgia in cooperation with the Department of Surgery, in several specialties, including general surgery, traumatology, neurosurgery, plastics and reconstructive surgery, orthopaedic surgery, ophthalmology, otolaryngology, urology, anesthesiology, radiology, and pathology.

Informal Procedures

When a dispute arises between a student and a faculty member or department, there is often conflict over the best way to resolve the problem. The medical school has a formal procedure, stated in "Promotion Policies and Procedures," and an informal procedure, outlined below.

In the College of Medicine, students with problems or complaints should first attempt to resolve the issue with the faculty member involved. Lacking a satisfactory outcome, the student can then appeal to the dean of the College of Medicine. The informal discussion does not necessarily lead to an 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 situation arising in the medical school, including grading disputes, alleged academic dishonesty, alleged discrimination during clinical rotation (e.g., lack of patient data), and perceived incidents of discrimination or harassment.

When students are in the process of resolving a complaint with a faculty member or department, others should try to avoid making personal or other remarks in the interest of the student's confidentiality, full diligence, and fairness. If a complaint cannot be resolved informally without going into the student's record or through an official action (e.g., taking a year off or restricting an exam).

Division of Associated Medical Sciences

Degree of Doctor of Medicine (M.D.) and M.A. degrees are offered by the Medical College of Georgia in cooperation with the Department of Surgery, in several specialties, including general surgery, traumatology, neurosurgery, orthopaedic surgery, ophthalmology, otolaryngology, urology, anesthesiology, radiology, and pathology.
General Policies

Advising

When students declare their intended major to be one of the programs in Division of Associated Medical Sciences, they are assigned to that program for academic advising.

Admission

Students are admitted to the College of Medicine at the time of formal admission to one of its programs. Admission policies and procedures vary from program to program. The Physician Assistant and Nuclear Medicine Technology programs have an early admission process.

Students should consult the individual program description and/or program office for details of the admission procedures. Students may be admitted as degree or nondegree candidates (special students). Nondegree candidates are subject to College of Medicine rules for academic probation and dismissal.

To be considered for admission, applicants must have earned a cumulative grade-point average on all college work attempted as appropriate to each program; medical technology: 2.50; medical technology, occupational therapist assistant: 2.50; and physician assistant: 2.50. Admission committees give special attention to grades in the sciences, particularly those prerequisite science courses required by the individual programs. The cumulative 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 provide proof that they have had a recent physical examination including routine laboratory procedures and immunizations. Students should receive their own and their patients' protection before they enter the program. These records are maintained through Student Health Service, which should be consulted for further information.

Financial Aid

Students in the Division of Associated Medical Sciences undergraduate programs are eligible to apply for undergraduate financial aid. Scholarships, grants, loans, and part-time job placements are administered by the University's Office of Scholarships and Financial Aid and are awarded on the basis of demonstrated need. Part-time work in related areas is sometimes available.

Graduation Requirements for Baccalaureate Degrees

General Requirements

Students must earn a minimum of 124 semester hours of credit. The number required after admission to a specific program varies from program to program. Students should consult the program description and/or program director for more specific information.

The general requirements for graduation include quality as well as quantity of work completed. Candidates must earn a minimum grade-point average of 2.00 in all college work attempted, all work undertaken at The University of Iowa, and all graded work attempted after admission to the College of Medicine. Students enrolled in a program that uses the pass/fail/honor grading system must pass all courses required to complete the program.

The residence requirement may be met by earning the final 20 consecutive semester hours in residence, or 45 of the last 60 semester hours in residence, or an overall total of 90 semester hours in residence. Nonresidents include course work at other colleges and universities, course work in other undergraduate colleges at The University of Iowa, and all work by correspondence, including University of Iowa Guided Correspondence Study courses.

General Education requirements vary from program to program. 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 must have a different college, must do so under a combined degree program, and must have their combined course of study approved by the dean of the College of Medicine and the dean of the other college.

Second Baccalaureate Degree

Students who already possess a baccalaureate degree and who want to earn an additional bachelor's degree must complete at least 30 consecutive semester hours in the College of Medicine. Students who hold a B.A. or B.S. degree will be considered to have satisfied all General Education Requirements for graduation except the foreign language requirement. Holders of other degrees must meet college and program degree requirements. Students with a B.A. or B.S. degree must satisfy the residence requirement for a bachelor's degree in the College of Medicine. A second bachelor's degree must apply for the degree toward the Office of Admissions.

Combined Baccalaureate Degree Program

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

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

Candidates in the combined degree program must satisfy all requirements for both degrees. They must complete an average of 154 semester hours of credit, including at least 30 semester hours of courses offered by the College of Medicine and at least 30 semester hours of courses offered by the College of Liberal Arts.

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

Minors

Students graduating from the College of Medicine may earn a minor program in any degree-granting department or program in the University or any other degree-granting program, department or college of the University.
take a course that duplicates the content of a satisfactorily completed course. Repetition occurs when students take a more elementary course after having satisfactorily completed a more advanced or higher-numbered course than that which is repeated. Duplication and repetition are assessed by the registrar at the time of graduation analysis. Hours earned by duplication or repetition 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 scholastic achievement upon recommendation by the program and with the dean's approval. Minimum criteria have been established for the following designations: distinction, high distinction, and highest distinction.

Registration and Grading
Students are not allowed to register after the third week of the semester or the first one and one-half weeks of the summer session. The maximum permitted registration is 20 semester hours in a regular semester and 19 in the summer session. Students must obtain permission from the head of the division to register in courses for more than the maximum semester hours allowed.

Changes in Registration
Course change forms will be added with the signatures of the adviser and the course instructor at any time during the first two-thirds of the course. They may be dropped at any time during the first two-thirds of the course. Approval is required from the head of the division for major changes in registration and is granted only in extraordinary circumstances. Students are assigned a mark of W (withdrawal) for any course dropped after the first one-third of the course.

Students who have registered for courses offered for variable or arranged credit may change the course credit to fixed credit upon approval with the signatures of the instructor, the adviser, and the head of the division at any time prior to the end of the first two-thirds of the course.

Other changes in registration (such as to audit for credit) may be made only during the first one-third of the course. It is the student's responsibility to see that the change-of-registration form is approved by the necessary authorities and delivered to the Registrar's Center. Changes in registration that change the credit assignment on the course will be made only upon approval of those who have been charged when the completed form is submitted to the Registrar's Center.

Withdrawal of Registration
Students may withdraw registration without academic penalty at any time prior to the end of the first two-thirds of the course. If the withdrawal is made after the first one-third of the course, but no credit is given for the course. Later withdrawal results in automatic assignment of an F. Students withdraw are not reinstated after the deadline for that session.

Grading Procedures
Marking procedures vary from program to program. Students should consult individual program policy statements for information.

Auditing Courses
Students may register as auditors with permission of the appropriate program director and course instructor. In addition to obtaining these signatures, students must register for zero credit in the course to be audited. The mark of R (reinforced) is assigned if the student's attendance and performance are satisfactory; if they are unsatisfactory, the mark of W (withdrawn) is assigned. Course completed with a mark of R do not meet any college requirement and carry no credit toward graduation. Auditing may not be used as a second-grade-only option.

Second-Grade-Only Option
Repeating courses for the second-grade-only option is allowed in extraordinary circumstances. To repeat a course for the second-grade-only option, students must obtain the signatures of the dean, the program director, and the course instructor on a special form obtained from the dean's office. The properly signed form must be presented to the registrar's office before the end of the first one-third of the course. Both grades will remain on the permanent record, but only the second one is used to calculate grade-point average and honors earned.

Incompletes
A grade of I (incomplete) may be reported if the reasons for inability to finish the course satisfactorily are acceptable to the program director and the course instructor. There must also be evidence that the course work will be completed within a reasonable length of time. Usually, no later than the end of the next academic session. Incompletes not removed by the deadline for submission of grade reports 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 signatures of the dean on a change of grade form.

Credit by Examination
The procedure for the acceptance of and the granting of credit by examination varies from program to program. The program director should be consulted for further information.

Reports to Students
Instructors contact any student whose work falls below the minimum acceptable level when the problem is recognized. Grades are reported on the student's permanent record 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 favorable progress toward the degree and certificate. Students who fail to maintain satisfactory academic 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 routinely assigned to遭advisors or upper-division upperclassmen to discuss their progress at the end of a semester or session. Enrollment students may be enrolled on probation if they fail to meet the minimum stated standards for admission.

Continued unsatisfactory scholarship or unprofessional behavior may result in dismissal from a program. Students dismissed from a program must reapply for admission through the regular, established program application procedures. Review of the executive committee of the division, at least four months prior to the requested date of readmission.

Students placed on probation or dismissed from a program are notified in writing of these actions by the program director, a copy is placed in the file.

Students are expected to attend classes regularly. Students who miss classes or assignments are expected to present evidence that they have been ill. Any other absences must be approved in advance by the course instructor.

Any offense against good order committed by a students in a classroom, clinical setting, or laboratory may be summarily dealt with by the instructor or referred to the program director. The instructor reports in writing any disciplinary action taken against a student to the program director. Repeated or exceptional instances are reported to the dean.

Academic Misconduct
Plagiarism and Cheating
All cases of plagiarism and cheating in the College of Medicine are reported to the dean with a statement of relevant facts. The program director and the instructor concerned must submit recommendations for appropriate disciplinary action.

The individual instructor may reduce the student's grade, including assignment of the
APPeals Procedure

Students who wish to appeal a decision should submit an appeal in writing to the dean within two weeks after the date of receipt of the decision is writing.

Unclassified Students

Persons who do not wish to be admitted to the College of Medicine but wish 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 by action of the faculty upon recommendation of the professor in charge of the course.

Nondepartmental Courses

150 Medicine for Fourth Year
150A Medical Clinical Third Year
152 Nutrition
154 Medicine in the Humanities
350 Interpersonal Skills for the Medical Profession
452 Introduction to Internal Health Professions
452A Law and Medicine for Physicians
452B Introduction to Behavioral Medicine
452C Introduction to Clinical Medicine
531 Interdisciplinary Electives in Oncology
532 Introduction to Clinical Medicine for Physician Assistant Students
533 Designing and Developing Internal Resources

ANATOMY

Head: Joe D. Clutter
Professor: Adit A. Abell, Ronald A. Bergman, Roseler C. Bradding, Joe D. Clutter, Paul N. Heiger, Jr., William W. Keating, Frank J. Longo, Robert L. Tornoske, Gary W. Yos Haines, James R. West, Terence H. Williams
Assistant professor: Terry McLean, Frank E. Patsch, Alexander Tang
Assistant professor: Marc D. Cassell, Vincent Ramey, James C. Searle

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

The department performs three major services: teaching anatomy of the human body to students preparing for careers in the health care professions, providing advanced courses, teaching experiences, and research training to graduate students preparing for careers in academic research and related scientific fields, and conducting original research into biological structure and function relationships.

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 Scientist Training Program, the Cellular and Molecular Biology Training Program, and the newly established Neuroscience Program.

Graduate Programs

Master of Science
Admission to the M.S. program is limited to individuals who hold or are currently enrolled in a health profession degree, and to individuals who are established in a career and who seek a master's degree for reasons of professional improvement.

Doctor of Philosophy
Students in the Ph.D. program work directly for the doctoral without an intermediate master's program. They acquire in depth knowledge of gross anatomy, histology, cell biology, and related scientific fields by taking these and other courses and teaching in lecture and laboratory sections under faculty supervision. Students ordinarily require four to five years of full-time study to complete the doctorate in anatomy.

During the first year, students review through two or more faculty research laboratories at the end of the first year, they choose a research area and become affiliated with a faculty member who acts as their major advisor. By the end of the second year, students undertake the comprehensive examination, define a
### Anatomy • Medicine

**Anatomy**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>5030461</td>
<td>Human Gross Anatomy for Dental Students</td>
<td>3.0</td>
<td>Regional dissection, functions, and structures of the head and neck, including the cranial nerves. Offered during spring semesters.</td>
</tr>
<tr>
<td>5030462</td>
<td>Principles of Human Anatomy</td>
<td>3.0</td>
<td>Regional dissection, functions, and structures of the upper and lower extremities. Offered during spring semesters.</td>
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<tr>
<td>5030463</td>
<td>Human Gross Anatomy for Medical Students</td>
<td>3.0</td>
<td>Regional dissection, functions, and structures of the thoracic cavity and extremities. Offered during spring semesters.</td>
</tr>
<tr>
<td>5030464</td>
<td>Medical Embryology</td>
<td>3.0</td>
<td>Anatomical development of the human body. Emphasis on clinical aspects of development. Offered during spring semesters.</td>
</tr>
<tr>
<td>5030465</td>
<td>General Histology for Medical Students</td>
<td>3.0</td>
<td>Histological study of cells, tissues, and organs systems. Offered during spring semesters.</td>
</tr>
<tr>
<td>5030471</td>
<td>Gross Anatomy Program for Physician Assistant Students</td>
<td>3.0</td>
<td>Regional dissection of the head, extremities, and abdomen. Includes correlation with radiology. Offered during spring semesters.</td>
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<tr>
<td>5030472</td>
<td>General Histology for Dental Students</td>
<td>3.0</td>
<td>Histological study of cells, tissues, and organs systems. Offered during spring semesters.</td>
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<tr>
<td>5030473</td>
<td>Dental Embryology</td>
<td>3.0</td>
<td>Anatomical development of the human body. Emphasis on clinical aspects of development. Offered during spring semesters.</td>
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<tr>
<td>5030474</td>
<td>Oral Histology and Embryology</td>
<td>3.0</td>
<td>Emphasis on teeth and related structures. Offered during spring semesters.</td>
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<tr>
<td>5010501</td>
<td>Independent Study (Anatomy)</td>
<td>1.0</td>
<td>Open only to medical and surgery students. Offered during fall semesters.</td>
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<tr>
<td>5010502</td>
<td>Microscopy in Human Anatomy</td>
<td>1.0</td>
<td>Open only to medical and surgery students. Offered during fall semesters.</td>
</tr>
<tr>
<td>5010503</td>
<td>Gross Human Anatomy for Graduate Students</td>
<td>1.0</td>
<td>Regional dissection, functions, and structures of the head and neck, including the cranial nerves. Offered during fall semesters.</td>
</tr>
<tr>
<td>5010504</td>
<td>General Histology for Graduate Students</td>
<td>1.0</td>
<td>Comprehensive study of cells, tissues, and organs at the light and electron microscopic levels. Offered during fall semesters.</td>
</tr>
<tr>
<td>5010505</td>
<td>Problem Lab</td>
<td>1.0</td>
<td>Anatomical laboratory teaching in a topic of the anatomy course. Offered during fall semesters.</td>
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**Problem Lab**

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DIVISION OF ASSOCIATED MEDICAL SCIENCES

Head: flex Roymoscyr
The Division of Associated Medical Sciences provides coordination of professional programs for training medical technologists (with tracks in cytogenetics, perfusion, and biotechnology), nuclear medicine technologists, physical therapists, and physicians assistants. Flexible 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 admissions requirement, the last 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 the study program carefully so that conflicts in 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-M—biotechnology track. NMR—Nuclear Medicine Technology. PA—Physician Assistant; PT—Physical Therapy.

Freshman Year

10.1 Rhetoric
10.15 Principles of Chemistry I
221M Mathematics for the Physical Sciences

Total: 15 s.h.

Second Semester

10.2 Rhetoric
10.25 Principles of Chemistry II
313 Principles of Animal Biology
416 Principles of Chemistry Lab I

Total: 16-18 s.h.

Sophomore Year

First Semester

Hazard Science
Social Sciences
4.125 Organic Chemistry I (MT, all tracks. PA)

Total: 15-16 s.h.

Second Semester

Hazardous Materials Control

Total: 14-15 s.h.
Senior Year
General education, elective, or advanced courses, as determined by the student, are required for specific degrees and professional requirements.

MEDICAL TECHNOLOGY

Director: Martin O’Sheehan
Assistant Director: Babette Hydrick
Medical Technologist: Leo Coyle
Associate professor: James A. Gutenkunst
Lecturer: Babette Hydrick, Marlin Schwiebel

Assistant in teaching: Kathleen Kiley, Lucy Wall

Adjunct instructor: Julie Kauli
Adjunct associate: Thomas Fruwirth, Kevin McDonald, Mike Breshears, Deloris Corda, Linda Duggan, Pat Henderson, Donnies Enterline, Tony Joel, Pat Sander, Marlene Locsin, Rose Meyer, Lynne Ryker, Beverly Protas, Donna Schellenberger, Barbara Stewart, Jon Vaughn

Enrollment offered in the B.S. in Medical Technology

Medical technologists/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 governmental laboratories, clinics, physicians’ offices, and industrial, pharmaceutical, biological, and medical research facilities. Medical technologist/clinical laboratory scientists are highly skilled health-care team members who use a battery of sophisticated procedures and instruments in their work to provide 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 Administration Medical Center. Satisfaction completion of the program qualifies students to take all medical technology/clinical laboratory scientist 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 freshman and sophomore years, the remaining curriculum may be as follows.

Junior Year

First Semester
Foreign language 101 Bacteriology (MT-CC) 3 s.h.
Electives 8 s.h.
Total 15 s.h.

Second Semester
63-162 Design and Analysis of Experimental Biomedical Sciences (MT-HT) 3 s.h.
Foreign language 4 s.h.
72-130 Human Physiology (all tracks) 4 s.h.
62-119 Instrumentation in Clinical Laboratory Science (all tracks) 3 s.h.
90-110 Biochemistry (all tracks) 3 s.h.
Electives 3 s.h.
Total 15 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 semester is a review of the first- and second-year courses, 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 and the Iowa City Veterans Administration Medical Center, attend additional lectures, and may begin a specialized track, if desired.

The program is made up of the following courses:
69-119 Instrumentation in Clinical Laboratory Science 4 s.h.
69-120 Clinical Microbiology for Medical Technologists 4 s.h.
69-121 Immunology for Medical Technologists 4 s.h.
69-122 Clinical Chemistry for Medical Technologists 4 s.h.
69-123 Hematopathology for Medical Technologists 4 s.h.
69-124 Clinical Hematology for Medical Technologists 4 s.h.
69-125 Microbiology for Medical Technologists 4 s.h.
69-126 Clinical Chemistry for Medical Technologists 4 s.h.
69-127 Clinical Immunohematology for Medical Technologists 4 s.h.
69-128 Clinical Microbiology for Medical Technologists 4 s.h.
69-129 Clinical Hematology for Medical Technologists 4 s.h.
69-131 Clinical Laboratory Science Seminar 3 s.h.
69-152 Parasitology for Medical Technologists 3 s.h.

Alternate tracks include the following courses:

Biocurriculum
69-135 Independent Study in Clinical Laboratory Science 6 s.h.
69-175 Selected Biomedical Research Techniques 6 s.h.

Cytogenetics
69-146 Medical Cytogenetics 6 s.h.
69-151 Medical Cytogenetics Laboratory 6 s.h.
69-152 Medical Cytogenetics Seminar 3 s.h.
69-155 Clinical Medical Cytogenetics

Highly recommended pre-entry courses include 37-112 and 37-118.

Permits
69-160 Respiratory and Renal Physiology 4 s.h.
69-161 Introduction to Medical Electronics and Physiology 4 s.h.
69-162 Cardiovascular Anatomy, Physiology, and Pathology 4 s.h.
69-163 Perturbation Theory I 4 s.h.
69-164 Perturbation Theory II 4 s.h.
69-165 Clinical Perturbation Techniques and Methods 4 s.h.
69-166 Pharmacology for Percutors 4 s.h.
69-172 Perturbation Seminar 3 s.h.
69-169 Research Seminar

Highly recommended pre-entry courses include anatomy, statistics, and physics.

Cyotechnology and Histology

Additional tracks in cyotechnology and histology are being considered; for current status or information, consult the director of the Medical Technology Program.

For course descriptions, see "Pathology" in the section of the Catalog.

Admission

The medical technology/clinical laboratory science professional program is limited to 30 students, who begin the program in late May. Applications close October 31. Fifteen students continue during the fall and spring semesters and complete the program in May. The other fifteen have the opportunity to complete unfinished prerequisite courses work during the fall semester and then return to the program for the spring and fall semesters of the following year, graduating in December. Additional students who wish to complete alternate tracks (cytogenetics, perfusion, or histotechnology) must complete the same admissions 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 general, physical, 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 of 2.50 overall and 2.50 in science generally are required. Applicants who enter the program as undergraduate students must meet the general admission requirements of the 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/summer curriculum and those in the Associate degree program are expected to provide their own laboratory costs and equipment such as microscopes provided by the program.

**NUCLEAR MEDICINE TECHNOLOGY**

**Director:** Kenneth A. Holmes

**Medical director:** Robert F. Kichler

**Technical director:** John A. Brecher

**Clinical professors:** Frank H. Chang, James C. Edwards, Peter T. Finkler, Aimee W. Oolden, Richard E. Petersen

**Associate professors:** Steven Collins, Kevin Reed, Jason J. Metallic

**Assistant professor:** Stephen J. Jard, Mark T. Mader, William L. Fox

**Associate:** Eileen Fahn

**Clinical associate professor:** James J. Prout (Office of Pharmacy)

**Visiting assistant:** Karen Beetham

**Adjunct instructor:** Kenneth A. Holmes

**Degree offered:** B.S. in Nuclear Medicine Technology

Nuclear medicine technology is a medical specialty that uses radioactive tracers for diagnostic, therapeutic, and research purposes. It is a vigorous, dynamic field that has grown rapidly over the past two decades and is still expanding and growing in complexity. This continued expansion of the specialty has fostered an increasing demand for highly skilled and motivated nuclear medicine technologists.

Nuclear medicine technologists generally work in hospitals and clinics. As the heart of nuclear medicine technology, the use of sophisticated detectors and computers to trace the movement and localization of radioactive tracers in the human body.

**Baccalaureate Program**

- The degree curriculum includes courses that are in keeping with the "Essentials of an Accredited Educational Program in Nuclear Medicine Technology." These courses are taught in the following areas: radiopharmacy, radiation instrumentation, radiobiology, radiophysics, biochemistry, and pharmacology.

**Admission**

Prospective students for the nuclear medicine technology program should meet the following:

- A minimum of 60 semester hours is required, with a minimum cumulative grade-point average of 2.50.

- Fulfillment of the College of Liberal Arts General Education Requirements in rhetoric, physical education, humanities, historical perspectives, foreign civilization and culture, and social sciences (sociology and psychology are recommended).

- A minimum of 20 semester hours in three science areas, including a complete introductory course with laboratory in chemistry, physics, and biology.

- A minimum of 3 semester hours in mathematics, including at least intermediate algebra.

- Fulfillment of these basic admission requirements does not ensure acceptance into the Nuclear Medicine Technology Program. Placement from the junior to the senior year is conditional upon satisfactory completion of a minimum of 34 semester hours of study in the recommended areas.

- A new class begins in late August each year. Application materials must be received by March 1. Personal interviews are scheduled in April and the class is selected by May 1. At present, the class size is limited to eight students. Prospective students are encouraged to consult with the program office to plan an appropriate preprofessional program.

**PHYSICAL THERAPY**

**Director:** Gary G. Saylor

**Professor:** Gary Smith, Gary Saylor

**Associate professor:** Carol Jackson, David Harmon

**Assistant professor:** Thomas Cook

**Lecturer:** John Bearn, Byron Birk, Gary K. Waddell

**Adjunct assistant professor:** William D. Davis

**Adjunct lecturer:** Donald Burt

**Adjunct associate:** Rhonda Darnell, John Drile, Jan Dool, Kay Linderberg, Ken Ivo, Loretta Lough, Bruce Miller, Richard Wolden, John Nubecker

**Admission**

- For more information, please contact the Office of Admissions.

**Graduate Degree Offered:** M.P.T., M.A. in Physical Therapy
Physical Therapy is a health profession that involves the treatment of patients who have impairments, disabilities, or health problems that limit their ability to perform activities of daily living. Physical therapists use their training to help patients improve their mobility, function, and quality of life. They work with patients of all ages, from newborns to the elderly.

There are typically two levels of education: an entry-level master's degree program and a doctoral program. The master's degree program typically takes 2 years to complete, while the doctoral program takes 3-4 years. Graduates of both programs are eligible for professional registration and can then apply for entry-level positions in a variety of settings, including hospitals, clinics, and private practice.

The professional program is structured to provide students with a comprehensive education in physical therapy. It includes courses in human anatomy, physiology, kinesiology, and pathology. Students also participate in clinical rotations, working with patients under the supervision of experienced physical therapists.

In addition to the coursework, physical therapy students are required to complete a research component, which may include a thesis or a research project. This component helps students develop critical thinking skills and prepare them for future professional roles.

Physical therapists work in various settings, including hospitals, clinics, schools, and community agencies. They may also work in private practice or military settings. The job outlook for physical therapists is expected to grow as the population ages and the need for health care services increases.

Physical therapists must have a bachelor's degree, pass the National Physical Therapy Exam (NPTE), and complete a state-approved physical therapy educational program. In some states, they are also required to pass the National Physical Therapy Examination (NPTE) as a condition of registration.

The Master of Arts in Physical Therapy program is designed for students who wish to pursue advanced education in physical therapy. It provides a solid foundation in the theoretical and clinical aspects of physical therapy, preparing students for careers in a variety of settings.

Student to faculty ratio: 1:14.

Class size: 20.

GCAT: Required.

Tuition: $40,000.

Address: 123 Physical Therapy Avenue, University of Iowa, Iowa City, IA 52242.

Contact: 319-335-5678.
internal medicine, pediatrics, orthopedic surgery, physiology and biochemistry, anatomy, engineering, and pharmacology, and with personnel in the physical therapy clinics.

Students successfully completing the M.A. program in physical therapy will:

- Be able to engage in teaching at the undergraduate and postgraduate levels at 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 topic; and
- Be skilled in the application of basic concepts in the area of cardiology, neurology, and rheumatology.

The following are required courses:

101.212 Biometrics
101.260 Health Promotion and Disease Prevention Therapeutics
101.270 Occupational Biomechanics
101.275 Analysis of Sensor-Motor Systems in Health and Disease
101.320 Introduction to Design and Technology
101.325 Research in Human Physiology
101.327 Research in Therapeutics
101.328 Advanced Anatomy and Neuroscience
101.330 Exercise Physiology
101.360 Biomechanics of Motion, Action, and Use
101.362 Facilities Learning in Health Science Education
151.280, 282, or 284 Practicum (teaching, research, and/or consultation)

**Maximum of six semester hours.**

**May be taken on a pass-fail basis.**

**Admission**

To be considered for admission, applicants must be graduates of an approved professional program of physical therapy and must have earned a grade-point average of 2.75 or higher on a four-year scale on all undergraduate work. Two years of clinical experience also is highly desirable.

Admission to the master's degree program is based on the grade-point average for previous college academic work; scores on the Graduate Record Examination (GRE) Aptitude 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 reviewed by the Graduate College and all aspects of the written application for the Physical Therapy Educational Program are submitted. Deadlines for completed written applications are October 15 for fall (by December 15, March 15 for fall), May 15 for fall (by July 15), and May 15 for summer (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 Liberal Arts" section of the Catalog.

Students successfully completing the Ph.D. program in physical education with a specialization in therapeutic education will:

- Be able to teach at the basic professional and master's degree levels of physical 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 accepted by the Graduate College;
- 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, neurology, and rheumatology.

**Financial Aid**

A number of teaching and research assistantships are available; part-time clinical work also may be available.

**Courses**

101.112 Physical Therapy Management and Administration
101.122 Psychosocial Aspects of Patient Care
101.131 Functional capacities and psychosocial aspects of disability as they relate to patient-physical therapist interactions introduction to communication theory.
101.431 Therapeutic Physical Agents
101.432 Critical Analysis of the physical and physiological basis, administration, technique, and problems associated with clinical use of therapeutic physical agents, including massage, heat, cold, hydrotherapy, ultrasonic light, electricity, and ultraviolet techniques.
101.433 Therapeutic Exercise
101.434 Physical agents in therapy, including the practical use of equipment, patient management of therapy, and through lecture and demonstrations.
101.576 Physiotherapy and Osteopathy
101.774 Principles and techniques in the design and use of physical therapy equipment.
101.776 Principles of Pathology
101.1154 Processes of life, including vital functions and influencing factors.
101.1155 Microbiological Therapeutics
101.1156 Principles and mechanisms of pharmacological agent action and side effects, adverse drug reactions, and management of drug interactions, follow-up. 101.1157 with continued instruction in pharmacology and therapeutics, with emphasis on management of common pharmacological problems.
101.1158 Clinical Education
101.1159 Patient clinical experience in the care under the supervision of the clinical education faculty in selected institutions.
101.1151 Clinical Education
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101.1228 Clinical Education
101.1229 Clinical Education
Performing a thorough physical examination. This course is taken with
supervision. Medical students.

The third, clinical phase consists of a 34-36 week care, primary care curriculum,
including six weeks each of family medicine, general internal medicine,
obstetrics/gynecology, pediatrics, psychiatry (four to six weeks), and surgery.
Students select either a primary care or specialty track. If available,
the primary care track includes an additional six weeks of family medicine,
and electives might include genetics, emergency medicine, cardiology,
dermatology, and orthopedics. The specialty track might include any of
the electives mentioned or other rotations in more specialized areas such as
gastroenterology/ hepatology and pulmonology.

These clinical rotations are designed to provide students with interaction and experience in the care of patients as a
matter that facilitates effective integration of the knowledge, skills, and attitudes
derived from the basic science and
clinical phases of the program. Clinical training is provided by The University of
Iowa Hospitals and Clinics, the Veterans Administration Medical Centers in
Des Moines and Iowa City, Brookfield Medical Center in Des Moines, and other
affiliated hospitals throughout the state. Students gain additional clinical experience through placements at a variety of
hospitals, clinics, and programs involved in clinical work in office-based
practices.

The didactic and clinical phases of the program emphasize primary health care delivery
and the role of physician assistants
as members of the health care team. The program is integrated with the teaching of
the College of Medicine, permitting interdisciplinary activities between various medical and health care professional
students.

Professional Curriculum

First Year

Phase I

71.110 Pharmacology for Health Sciences 6 s.h.
50.105 Law and Medicine for Physicians Assistant Students 1 s.h.
60.111 Gross Human Anatomy for Physician Assistant Students 6 s.h.
61.112 Health Sciences Microbiology 4 s.h.
69.203 Introduction to Human Pathology 4 s.h.
69.331 Clinical Pathology for Physician Assistant Students 2 s.h.
72.164 Human Physiology for Physician Assistant Students 4 s.h.
99.164 Biostatistics for Physician Assistant Students 3 s.h.
157.101 Intro to the Medical and Physical Examination for
Physician Assistant Students 1 s.h.
117.102 Introduction to the Medical and Physical Examination for
teach 12.120 Preventive Medicine for
Physician Assistant Students 3 s.h.
Phase II

50.121 Introduction to Clinical Medicine for Physician Assistant Students 20 s.h.

Second Year

Phase III

The following are required clinical rotations:
70.155 Pediatrics for Physician Assistant Students 6 s.h.
75.155 General Surgery for Physician Assistant Students 6 s.h.
78.155 Internal Medicine for Physician Assistant Students 6 s.h.
115.155 Family Practice I for Physician Assistant Students 6 s.h.
66.100 Obstetrics and Gynecology for Physician Assistant Students 6 s.h.
73.100 Psychiatry for Physician Assistant Students 6 s.h.
Select clinical rotations, selected from the following:
70.102 Pediatric Elective for Physician Assistant Students 4 s.h.
75.101 Emergency Room Elective for Physician Assistant Students 4 s.h.
76.102 Orthopedics Elective for Physician Assistant Students 4 s.h.
77.200 Family Practice Elective for Physician Assistant Students 6 s.h.
115.506 Family Practice III for Physician Assistant Students 6 s.h.
78.100 Internal Medicine Elective for Physician Assistant Students 6 s.h.
62.200 Dermatology Elective for Physician Assistant Students 6 s.h.
64.101 Neurology Elective for Physician Assistant Students 6 s.h.
67.108 Ophthalmology Elective for Physician Assistant Students 6 s.h.
74.5 Elective for Physician Assistant Students 2 s.h.
75.110 Surgery Elective for Physician Assistant Students 4 s.h.
77.151 Surgery Elective (Lap, Urology, Gastroenterology) for Physician Assistant Students 4 s.h.
77.152 Surgery Elective (Lap, Urology, Gastroenterology) for Physician Assistant Students 4 s.h.
78.100 Rehabilitation Elective for Physician Assistant Students 6 s.h.
78.110 Internal Medicine Elective (Cardiology) for Physician Assistant Students 4 s.h.
78.130 Internal Medicine Elective (Geriatrics) for Physician Assistant Students 4 s.h.
78.135 Internal Medicine Elective (Cardiology) for Physician Assistant Students 4 s.h.
78.140 Internal Medicine Elective (Gastroenterology) for Physician Assistant Students 4 s.h.
78.150 Internal Medicine Elective (Pulmonary) for Physician Assistant Students 2 s.h.
79.120 Urology Elective for Physician Assistant Students 2 s.h.
66.110 Obstetrics and Gynecology Elective for Physician Assistant Students 4 s.h.
70.101 Emergency Elective for Physician Assistant Students 4 s.h.

Admission

To be eligible for admission to the physician assistant professional program, applicants must have completed at least 60 semester hours at college level study, including:

- College of Liberal Arts General Education Requirements in rhetoric, physical education activities, 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 introductory course and at least one advanced course in zoology or animal biology.

It is also strongly recommended, although not required, that applicants' backgrounds include analytical geometry, beginning calculus, and physics.

Applicants must have achieved at least a 2.50 grade point average on the last 60 semester hours of college course work rendered. The admissions committee gives special attention to applicants' professional performance and success in the pre-medical college work done.

Admission also requires 1 year of related patient care experience, such as hospital work, laboratory work, or other experience in a health care setting.

Preference is given to those students who display unusual promise and aptitude.

Students are advised to pursue a course of study that is applicable to a baccalaureate degree, most commonly in the areas of biology or related fields. Applicants to this program who have not met the entrance requirements will be considered on a case-by-case basis.

Students are advised to pursue a course of study that is applicable to a baccalaureate degree, most commonly in the areas of biology or related fields. Applicants to this program who have not met the entrance requirements will be considered on a case-by-case basis.

An applicant must complete the Physician Assistant Program application and submit at least three letters of recommendation.

Expenses

In addition to general University student expenses, students in the Physician Assistant Program are responsible for the
Courses
117-19 Physician Assistant Clinical Seminar 1
117-22 Seminar for Physician Assistant Students 1, 2
117-88 Senior Seminar for Physician Assistant Students 1
117-109 Introduction to the Medical History and Physical Examination for Physician Assistant Students 4

Admission
To be considered for admission, applicants must have completed a baccalaureate degree with a minimum grade-point average of 2.70. Suggested preparatory courses include biology, biochemistry, histology, and microbiology. See the Catalog for requirements.

Fees
Fees for the Graduate Program are $500 per academic year. Students are responsible for all costs associated with their education, including textbooks, travel, and living expenses.

Facilities
The University of Iowa offers a range of facilities to support the needs of graduate students, including a fully equipped library, computer labs, and several modern research facilities. Students have access to state-of-the-art equipment and facilities for conducting research.

Research Opportunities
The University of Iowa offers a wide range of research opportunities in various fields, including medicine, engineering, and the sciences. Students have the opportunity to work with faculty members on projects that align with their interests.

Financial Aid
The University of Iowa offers a range of financial aid options to support graduate students, including scholarships, fellowships, and loans. Students are encouraged to explore all available options to find the best fit for their financial situation.

Application Process
To apply for the Physician Assistant Program at the University of Iowa, students must complete the online application and submit all required documentation by the deadline.

Contact Information
For more information about the Physician Assistant Program or the Graduate Program, please contact the Office of Graduate and Professional Studies at 319-335-1234. Students interested in the Physician Assistant Program should contact the Department of Medical Education at 319-335-5432.
stockroom supervisors, and a purchasing agent.

The department has virtually all of the equipment used in modern biochemical research, including analytical, preparative, preparative ultracentrifuges, computerized fluorometers, optical rotary polarizors, ultraviolet-visible and infrared spectrometers, amino acid analyzers, protein sequencers, peptide synthesizers, gas chromatographs, preparative high performance liquid chromatography, liquid scintillation counters, electrophoresis equipment, instrumentation for protein X-ray crystallography, computer terminals, a number of Cary spectrophotometers, an NMR instrument, and an automatic DNA synthesizer.

In addition to the department's reading room, research facilities are provided by the Health Sciences Library and the various other departmental branches of the University Libraries system and by computer access to Biological Retrieval, Services.

Financial Aid

All students admitted to the graduate programs in biochemistry receive financial assistance.

Admission

The graduate program in biochemistry is sufficiently flexible to accommodate students with bachelor's degrees in any of the natural, biomedical, or physical sciences. Appropriate prerequisites include college-level courses in organic and physical chemistry, biology, and physics. Students in other fields who have demonstrated ability may make up deficiencies after they enroll.

Minimum requirements for admission to the department include an undergraduate grade point average of 3.0 and an acceptable score on the verbal, quantitative, and analytical sections of the Graduate Record Examination (GRE). Aptitude Test. Candidates are encouraged to be competitive but they need only advanced grades for chemistry or biology.

Courses

90.090 Cooperative Education Internship 0.0 h.
92.090 Orientation and Introduction to the Field of Biochemistry 0.0 h.

90.091 Technical Writing in Biochemistry 1.0 h.

91.190 Undergraduate Seminar 1.0 h.

91.191 Biochemistry I 3.0 h.

91.192 Biochemistry II 3.0 h.

91.193 Biochemistry III 3.0 h.

91.194 Biochemistry for Physical Assistant Students 3.0 h.

91.290 Biochemistry Seminar 0.0 h.

91.291 Biochemistry Laboratory 6.0 h.

91.292 Biochemistry Laboratory 6.0 h.

91.293 Biochemistry Laboratory 6.0 h.

91.294 Biochemistry Laboratory 6.0 h.

91.295 Biochemistry Laboratory 6.0 h.

91.296 Biochemistry Laboratory 6.0 h.

91.297 Biochemistry Laboratory 6.0 h.

91.298 Biochemistry Laboratory 6.0 h.

91.299 Biochemistry Laboratory 6.0 h.

91.390 Biochemistry Seminar 0.0 h.

91.391 Biochemistry Laboratory 6.0 h.

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91.399 Biochemistry Laboratory 6.0 h.

91.490 Biochemistry Seminar 0.0 h.

91.491 Biochemistry Laboratory 6.0 h.

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91.590 Biochemistry Seminar 0.0 h.

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91.690 Biochemistry Seminar 0.0 h.

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91.699 Biochemistry Laboratory 6.0 h.

91.790 Biochemistry Seminar 0.0 h.

91.791 Biochemistry Laboratory 6.0 h.

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91.797 Biochemistry Laboratory 6.0 h.

91.798 Biochemistry Laboratory 6.0 h.

91.799 Biochemistry Laboratory 6.0 h.

91.890 Biochemistry Seminar 0.0 h.

91.891 Biochemistry Laboratory 6.0 h.

91.892 Biochemistry Laboratory 6.0 h.

91.893 Biochemistry Laboratory 6.0 h.

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91.895 Biochemistry Laboratory 6.0 h.

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91.898 Biochemistry Laboratory 6.0 h.

91.899 Biochemistry Laboratory 6.0 h.

91.990 Biochemistry Seminar 0.0 h.

91.991 Biochemistry Laboratory 6.0 h.

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91.997 Biochemistry Laboratory 6.0 h.

91.998 Biochemistry Laboratory 6.0 h.

91.999 Biochemistry Laboratory 6.0 h.
To be eligible for admission to this program, students must complete all general requirements for a baccalaureate degree at their undergraduate institution by the end of the summer session of their junior year.

During the senior year, students are enrolled in the program in hospital and health administration as an undergraduate. After completing the first year of study, the student's degree is conferred by the undergraduate institution. The master's degree is conferred after completion of the second year of study.

Joint Programs

Students who wish to pursue an integrated program combining a graduate degree in hospital and health administration with that of another field are encouraged to do so. Joint programs usually require three years of full-time study, and students must satisfy the requirements of each program in order to earn each degree. In addition to the M.A.-M.B.A. dual degree program, joint programs currently are offered with the College of Law (J.D.) and the Program in Urban and Regional Planning (M.A.). Other alternatives may be established on an individual basis.

Students interested in a joint program should discuss their plans with both academic units and indicate their interest when submitting application materials.

Fellowships and Residencies

Most students choose to complement their academic training with an administrative fellowship or residency. Such experiences afford a valuable means of observing, developing, and demonstrating practical management techniques and skills. The program takes every effort to assist students in identifying and securing 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 research and teaching as well as in executive policy and administrative roles. The Ph.D. program demonstrates advanced capacities 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 presented in health care. The program requires all doctoral students to develop expertise in three areas of study.

These areas and the required courses are as follows:

Health Services Management and Policy

- 201 The Politics of Health Policy
- 202 Medical Care Programs
- 203 Seminar in Health Systems Management
- 205 Seminar in Contemporary Health Issues

Research Methodology and Statistics

- 262 Health Services Research I
- 263 Health Services Research II
- 265 Independent Research Project

Advanced Statistical Techniques

Doctoral students also are required to complete at least four courses in statistics (a minimum of 12 semester hours) from one of the following sequences.

- General Measurement and Statistics Sequence
- Regression and Correlation
- Application of Multivariate Statistical Methods
- Econometrics Sequence
- Statistical Methods in Econometrics
- Econometrics I
- Application of Multivariate Statistical Methods

Sociology Sequence

- 324 Intermediate Statistics and Data Analysis
- Intermediate Statistical Data Analysis
- Application of Multivariate Statistical Methods

Minor

Students must complete at least 12 semester hours in a discipline such as sociology, political science, social psychology, management science, or economics.

Alumni Association

An active alumni association supports the program in a number of ways, including curriculum consultation, continuing education, research, and fund development. The association also serves as a network for persons entering the profession. Alumni serve as visiting faculty, consultants, and as preceptors for residents and fellowships.

Each fall the program sponsors the Executive Symposium, a two-day conference in 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 health mission, and prospects for a new era in American health care. Second-year students, in particular, benefit from this event, since they present their research on topics submitted by alumni and practitioners.

Admission

Applicants to the master's program are required to hold a baccalaureate degree (except for early admission program applicants). Applicants to the Ph.D. program generally are expected to hold a master's degree in a health-related field, although other degrees will be considered. A 3.0 grade-point average (on a 4.00 scale) is required. Combined-Graduate Record Examination (GRE) Aptitude Test verbal and quantitative scores above 1000 or Graduate Management Admission Test (GMAT) scores above 500 are preferred. Courses in finance, economics, and statistics are strongly recommended. All applicants are required to submit academic transcripts, GRE or GMAT scores, three letters of recommendation, and a written statement of interest in the program. General admitting standards are revised 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. Effort is made to provide financial assistance to all students who demonstrate need.

In addition to various scholarships, grants, and loan programs administered by the University, the program provides qualified students with research assistantships, which afford valuable experience in health services research and management. Program participants are expected to work 10 to 20 hours per week and must apply for research assistantship by the end of the semester. As a research assistant provides a stipend and on-the-job training to students to assist in tuition rates.

In addition to these student financial aid programs, there are applications for part-time employment both on and off campus. Information on student 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 1981, is the University-wide focal point for a broad-based program of health services research.

With the coordination and support of the CHSR, faculty and staff from colleges and
1. The page contains a list of names and titles, likely of medical professionals, followed by a section on "Clinical Medicine in Internal Medicine".

2. The section on "Clinical Medicine in Internal Medicine" includes a large table with columns labeled "Title" and "Department".

3. The table entries are filled with names and titles, indicating a structured list of medical professionals or departments.

4. Additionally, there is a section on "Medical Scientist Training Program" with a list of director names and affiliations.

5. The director of the Medical Scientist Training Program is named along with their institution and role.

6. There is also a section on "External Medicine Electro-Physiology" with details on a course or program.

7. The page appears to be a summary or directory page for medical professionals or departments, likely from an academic or institutional context.

8. The text is formatted in a list and table structure, making it easy to scan for specific names or titles.
diagnosis, and laboratory diagnosis, as well as an insight into major health problems and needs. The Introduction to Clinical Medicine sequence is followed in the second year by 10 weeks of clinical clerkship in internal medicine and pediatrics.

In years three, four, and five—and if necessary, sixth—trainees are enrolled full time in the graduate department that they have selected by January of the second year. During this time, trainees are provided with academic and research experience necessary to fulfill Graduate College requirements for the Ph.D. degree and appropriate to their development as independent investigators. This scientific training is pursued directly by the faculty of the student's graduate department. During this phase of training, clinical contact is maintained through a formal weekly program of clinical research conferences under the guidance of the associate director for clinical studies and through voluntary participation in other clinical activities.

As soon as trainees complete the graduate component of their training, they return to the College of Medicine to begin a final year of clinical clerkships. This year serves two important purposes. First, it allows trainees to be back into the clinical environment a considerable and growing amount of information and sophistication in laboratory science and to apply it to problems of human disease. Second, it permits them to renew and further develop the clinical skills acquired in the second year of the program. After completing 36 weeks of clinical clerkships, trainees receive the M.D. and Ph.D. degrees.

Financial Aid

Trainees admitted to the first year of the program receive stipends and full tuition remission. The National Medical Fellowships (NMF) to the University of Iowa, from which the grand and institutional sources is continued for up to 6 years of academic study. This program allows the achievement and progress remain satisfactory. The program is supplemented during the graduate phase of the program, 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 and commitment to scientific research, stability through productivity, research experience as undergraduates.

Applications 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 American Medical College Application Service (AMCAS). Applicants should instruct AMCAS to forward their credentials to the College of Medicine (021) as soon as possible, but no later than June 15. At the same time, applicants should request a separate Medical Student Training Program application from the program office, 5650 Bowen Science Building, The University of Iowa, Iowa City, Iowa 52242. Applications to the Medical Student Training Program are reviewed by the program selection committee. The early decision plan of the College of Medicine for out-of-state residents is waived for this program. Equal consideration is given to all applicants regardless of their race or creed.

MEDICAL TECHNOLOGY

See "Division of Associated Medical Sciences" in this section of the Catalog.

MICROBIOLOGY

Head: Joe F. Currin
Professors: Robert F. Ashmore (Internal Medicine), Lee E. Gersche (Internal Medicine), Charles C. Girod (Microbiology and Immunology), Richard G. Lynch (Bacteriology), Robert J. Nelson (Microbiology), William H. Tschumper (Microbiology)

Graduate degrees offered: m.s., Ph.D., in Microbiology.

Undergraduate Program

See "Microbiology" in the "College of Liberal Arts" section of the Catalog.

Graduate Programs

The objectives of the graduate programs in microbiology are to help students become highly qualified in research and in teaching of microbiology. Several areas are included in the program: biotechnology, pathobiologic, microbial genetics, immunology, medical physiology, medical pathology, and animal pathology. Several of these specialized areas involve interdisciplinary training with students outside the department, so students receive broad experience during their course of study.

Students working for the Ph.D. degree may obtain an M.S. degree during their graduate work or proceed directly toward the Ph.D.

All students admitted as candidates for advanced degrees are expected to assist in, or participate in, departmental teaching.

Incoming students choose a research supervisor who serves as member 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 at the University, allowing ample opportunity for students to enroll in seminars, workshops, and research programs. For example, courses and seminars in clinical laboratory microbiology, immunology, genetics, cellular and molecular biology, and electron microscopy are taught as an interdisciplinary team.

Master of Science

Candidates for the M.S. degree are required to take a minimum of 24 semester hours of microbiology courses in three of the following courses: microbiology, immunology, virology, and clinical microbiology. Students may substitute a course in another department for the course requirements, upon obtaining approval of the M.S. Committee. Additional coursework may be required as the research advisor of the examining committee. Students must write a thesis based on their own research and defend it satisfactorily in an oral examination.

Doctor of Philosophy

The minimum course requirements for the Ph.D. are one course in each of four subject areas (of the seven subject areas available in microbiology) or 15 semester hours of course work in different areas. Students must take a comprehensive examination and write a thesis. The thesis must be completed satisfactorily in an oral examination.
Facilities

The department shares the Bowes Science Building with the departments of Anatomy, Microbiology and Immunology, and Physiology and Biophysics. Laboratory spaces and modern equipment are available for teaching and research.

Admission

Prospective graduate students should become familiar with the general admission requirements of the Graduate College. Departmental requirements include a review and formal vote by the faculty before students are admitted. Before beginning graduate work, students must have completed courses in biology, chemistry (inorganic and organic), microbiology, and mathematics including calculus, and physics. Students admitted without the above coursework must take it during the first year of graduate school. Students should have a grade-point average of 3.50 or better to be admitted to the graduate program in microbiology.

Certain specified curricula, such as the Iowa Biotechnology Training Program, which is intended for advanced students, have admission standards higher than those described above. Only applicants with a grade-point average of 3.50 or higher are considered for these programs, and it is preferable for applicants to have completed several years of undergraduate education before applying. The course of study leading to the Ph.D. in microbiology with emphasis in biotechnology also may differ somewhat from the following generalized curricula to accommodate our growing number of specialties. Inquiries may be made to the program or department chair.

Courses

Microbiology majors may not use 612.08 for the necessary hour requirement for their degree.

6106 Cooperative Executive Internship 0.0 s.h.
6115 Medical Microbiology 3.0 s.h. A study of the function of bacterial and other microorganisms in animal and human disease. Laboratory experience involved in infectious disease current clinical problem. Permission required. Regularly offered in College of Medicine or consent of course director.
6117 Health Science Microbiology 0.5 s.h. Introductory survey in medical microbiology covering currently important viral, bacterial, and fungal agents of human disease. Lecture and clinical laboratory. Open only to dental, medical, and veterinary students.
6147 Survey of Virology 3.0 s.h. Introduction to the study of viruses and virology with special emphasis on the role of viruses as agents of disease and the implications of these agents to human health. Lecture and laboratory. Open to junior and senior microbiology and medical students. Permission required.
6157 General Microbiology 3.0 s.h. Historical introduction to the relationship of microorganisms to essential nutrients, growth, physiology, and metabolism, pathogenesis, bacterial cytochemistry, genetics, and environmental impact. Laboratory emphasis on the study of procaryotic and eucaryotic microorganisms. Prior knowledge of general biology required. Prerequisite: 20.23 or equivalent. 4110.

6159 Infectious Diseases 3.0 s.h. Lpne studies of specific bacterial diseases. Discusses the epidemiology, etiology, pathogenesis, immunology, treatment, and prevention of selected diseases. 4110.
6160 Medical Microbiology 3.0 s.h. Microorganisms and disease. A comprehensive study of the role of bacteria, viruses, fungi, and parasites in human disease. 4110.
6161 Pathogenic Bacteriology 3.0 s.h. Principles of pathogenic bacteriology, with emphasis on mechanisms of pathogenicity and laboratory methods for isolation and identification of bacteria. Laboratory of selected methods used in study of pathogenic bacteria. Prerequisite: 6157 for a grade of C or above and consent of instructor.
6162 Medical Physiology 3.0 s.h. Microbial interference in biotic and abiotic systems, growth, energy transformation, fermentation, and control mechanisms. 4110.
6164 Seminar Microbiology 1.0 s.h. A seminar for graduate students under supervision of faculty. Laboratory. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6165 Electron Microscopy 1.0 s.h. Microscopic study of submicroscopic objects. Open to seniors and graduate students.
6166 Clinical Laboratory Microbiology 3.0 s.h. Practical and theoretical training in teaching and identifying bacteria and fungi from clinical materials. Offered cooperatively with University Hospital Laboratory. Prerequisites: 6110 and consent of instructor.
6167 Clinical Laboratory Virology 3.0 s.h. Practical and theoretical training in teaching and identifying viruses from clinical materials. Open to junior and seniors. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6168 Lecture-Laboratory Immunology 3.0 s.h. The study of defense mechanisms; specific and nonspecific defenses. 4110.
6171 Laboratory Immunology 3.0 s.h. Laboratory experiences with antibody reactions to bacterial, viral, and other antigens. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6173 Lecture-Laboratory Immunology 3.0 s.h. The study of defense mechanisms; specific and nonspecific defenses. 4110.
6175 Medical Virology 3.0 s.h. Virology and its relationship to human disease. Laboratory experiences with antibody reactions to bacterial, viral, and other antigens. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6176 Medical Microbiology 3.0 s.h. Microorganisms and disease. Laboratory experiences with antibody reactions to bacterial, viral, and other antigens. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6177 Microbiota Genetic Laboratory 3.0 s.h. Techniques and methods involved in laboratory techniques and processes for the isolation and identification of microorganisms. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6179 Clinical Virology 3.0 s.h. Laboratory experiences with antibody reactions to bacterial, viral, and other antigens. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6277 Virology in Cellular and Molecular Biology 3.0 s.h. Introduction to the study of viral and microbial genetics and their relation to viral and cellular function. Prerequisite: 6157 with a grade of C or above. 4110.
6211 Advanced Electron Microscopy 3.0 s.h. Presented in 2230. 4110.
6216 Radiobiology 3.0 s.h. Principles of radiation and its effects on living systems. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6258 Research Microbiology 3.0 s.h. Undergraduate students interested in advanced research in microbiology. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6261 Molecular Biology of Viral genomes and the Nucleocapsid 3.0 s.h. Methods used to study the nucleocapsid in RNA and DNA viruses. Prerequisite: 6157 with a grade of C or above and consent of instructor.
6262 Molecular Biology and Cellular Biology 3.0 s.h. Prerequisite: 6157 with a grade of C or above.
6277 Virology in Cellular and Molecular Biology 3.0 s.h. 6157 in course is mandatory.

NEUROLOGY

Head: Anton R. Damasio


Assistant professor: Matthew Stiles, Daniel Trabel

Associate professor: Kevin R. Feist

Research associate: Joyce Miller

Graduate research assistant: Robert D. Jones

Professional associate: Steven Anderson

Senior research psychologists: Linda Abril
Neurology is the branch of medical science concerned with diagnosis and management of disorders of the brain, spinal cord, peripheral nervous system, and muscle. Teaching and postgraduate training, carefully integrated with patient care, have long been a significant function of the department.

The department offers clinical and clinical research training in third- and fourth-year medical students, contributing to the Doctor of Medicine degree. An active, three-year approved residency program qualifying physicians for Board certification in neurology is a major aspect of departmental activity. Experience in clinical electrophysiology, pediatric neurology, psychiatry, and neuropathology is also part of this training. The department also offers research opportunity in behavioral neurology to candidates for the Doctor of Philosophy degree in psychology.

Investigative interests of the faculty center on behavioral neurology, electrophysiological correlates of central and peripheral nervous system disease, growth factors in the nervous system, control and regulation of autonomic functions, peripheral neuropathy, cerebrovascular disease, neuroophthalmology, and movement disorders.

Courses

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>6411</td>
<td>Clinical Neurology</td>
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<tr>
<td>6410</td>
<td>Neurology Elective for Physician Residents</td>
<td>3.0</td>
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<tr>
<td>6413</td>
<td>Advanced Neurology-Analgesics</td>
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<td>6414</td>
<td>Advanced Neurology-Analgesics Seminar</td>
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<td>6415</td>
<td>Advanced Neurology-Analgesics Conference</td>
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<tr>
<td>6416</td>
<td>Advanced Neurology-Analgesics Workshop</td>
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</tbody>
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NEUROSCIENCE

Chandra Subramaniam, MD
Professor of Neurology


Graduate 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.

Because of the interdisciplinary nature of neuroscience and the diverse backgrounds of entering students, the program provides considerable flexibility in curriculum.

Structure. The plan of study for each student is determined by the student's background coursework, as well as by the selection of elective courses appropriate to individual training objectives.

The curricula of the Neuroscience Program is based on two primary considerations. The first is to provide a sequence of required courses that ensure graduate students a broad and comprehensive exposure to the conceptual and experimental foundations of modern neuroscience. The second is to provide a flexible program of elective courses and advanced training courses, which will help to develop the multidisciplinary nature of the neuroscience curriculum, permit in-depth study within any of the divisions of molecular neuroscience, cellular neuroscience, developmental neuroscience, neural systems, and behavioral neuroscience.

Requirements

Background Courses

Students are expected to complete at least 5 semester hours in each of the following fields: biochemistry, general physiology, cell biology, and genetics. As necessary, these requirements may be fulfilled by approved continuation of coursework or by a student's prior coursework prior to entering the Neuroscience Program.

Elective Courses

All students in the Neuroscience Program are required to complete at least 15 advanced elective courses, for a total of at least 6 semester hours. Some of the requirements are selected from an approved list of courses offered by the departments of Anatomy, Biology, Pharmacology, Physiology and Biophysics, Psychology, and other departments of the Graduate College and College of Medicine. Elective courses are to be taken for at least two of the five subdivisions of the Neuroscience Program. Graduate students should consult their advisors for the course that is appropriate for the student's area of specialization and for plans to complete a course from a related specialization.

Financial Aid

Graduate students in the Neuroscience Program receive stipends and tuition support from institutional and external sources, including a cellular
OBSTETRICS AND GYNECOLOGY

Head: JR Sturley
Professor: FK Chamber, RP Gabbai
Clinical professors: W. Ora Egerston, R.M. Kerkhoven, Dr. Maritch
Anesthesiologist: D.L. Anderson
Assistant professor: C.H. Springer, D.A. Turner

Programs

Course Work for M.D. Students

Courses in obstetrics and gynecology are designed to give M.D. students a comprehensive survey of gynecologic medicine. This is done through a series of didactic lectures, interspersed with out-patient assignments, ward rounds, teaching seminars, and special electives.

The third-year clerkship (64 Clinical Obstetrics and Gynecology) gives the student core knowledge, skills, and attitudes needed to provide primary care.

The department offers four-year students a variety of electives that provide advanced training in the special areas of obstetrics and gynecology. In addition to clerkships at the University of Iowa Hospitals and Clinics, these electives include rotations at Broadlawns Medical Center, Des Moines, and the Gundersen Clinic, La Crosse, Wisconsin.

Residency Program

The department offers a four-year residency. Upon completion, graduates are eligible for the written and oral examinations leading to certification by the American Board of Obstetrics and Gynecology.

The resident is assigned to the various divisions and clinical services of the departments and is responsible for both hospital inpatients and outpatients. Additional training is obtained in private clinics in Waterloo, Des Moines, Muscatine, and Davenport.

The resident is trained in normal and abnormal obstetrics, gynecologic surgery, office gynecology, preoperative and postoperative care, and endoscopic procedures.

Courses

641 Obstetrics and Gynecology: Obstetrics, gynecology, and obstetrics; development of patient care, and physical examination of obstetric and gynecologic patients in order to obtain necessary diagnostic and therapeutic procedures for physical examination of gynecologic patients.

642 Advanced Obstetric Clerkship: Iowa City.

644 Advanced OB: This course is for students who have completed the residency program and are interested in undertaking advanced training in obstetrics and gynecology.

616 Advanced Gynecologic Clerkship

618 Gynecology and Obstetrics: This course is for students who have completed the residency program and are interested in undertaking advanced training in obstetrics and gynecology.

6105 Reproductive Endocrinology: This course is for students who have completed the residency program and are interested in undertaking advanced training in obstetrics and gynecology.

160 Advanced Obstetric and Gynecologic Clerkship: La Crosse, Wisconsin.

161 Advanced Obstetric and Gynecologic Clerkship: Broadlawns Medical Center, Des Moines, Iowa.

160 Obstetrics and Gynecology for Physicians Assistant Students

1611 Obstetrics and Gynecology Elective for Physicians Assistant Students

5998 Special Studies on Campus

5999 Special Studies Off Campus

OPHTHALMOLOGY

Head: Thomas A. Weisgerb
Professor emeritus: Frederick C. Black
Associate professors: Robert Dolberg, James C. Fish
Assistant professors: Wallace L.M. Abrahams, Christopher F. Bodin, Thomas A. Favel, Ronald V. Konishi, Arthur A. Nemeth, John A. Pohl

Ophthalmology is a medical and surgical subspecialty concerned with the diagnosis, treatment, and management of disorders of the eye. The department offers a four-year residency program in ophthalmology, which includes rotations in diagnostic and therapeutic procedures.

The teaching program is designed to provide the training of medical residents in all aspects of ophthalmology, including the diagnosis and treatment of diseases affecting the eye. The residents are trained in the diagnosis and treatment of diseases affecting the eye, which includes the surgical correction of refractive errors.

Several subspecialties are represented in the department: ophthalmology, ophthalmology, retinal disorders, glaucoma, neuro-ophthalmology, ocular complications, and external diseases of the eye. The residency program is designed to prepare residents in the field of ophthalmology.

The residency program lasts three years, culminating in qualification for the examination of the American Board of Ophthalmology.

Facilities

The department maintains several research laboratories: tumor research, diagnosis, pathology, and diagnosis, and the Department of Ophthalmology, which includes the Ophthalmology, Ophthalmology, and the Department of Ophthalmology.

NUCLEAR MEDICINE TECHNOLOGY

See "Division of Anatomical Medical Science" in this section of the Catalog.
ORTHOPAEDIC SURGERY

Head: Richard R. Cooper
Professor: John P. Allgret
Assistant: Robert R. Rehl, Joseph B. Rudolph
Charles J. Crock, Regional Research Cooper, George W. Klassen, E. B. Cooper
Professor: Mark G. Garvin
Associate Professor: Michael T. Fink
Assistant Professor: Thomas W. Wooten

The department offers two types of pregraduate training. The first is a five-year integrated clinical program in which the intern and resident participate simultaneously in inpatient care, outpatient care, surgery, and sciences related to the neuromusculoskeletal system. The second is a five- or six-year program for those interested in MS-4 residency academic.
OTOLARYNGOLOGY—HEAD AND NECK SURGERY

Head: Brian F. McCue
Professor: Aruson Berberich, Bruce F. Glat, Leslie A. Dreyfus, William F. Obey, Maria Sammarco, Richard T. Young, David B. Van Doren
Associate professor: Michael D. Myers
Associate professor Emeritus: Harold E. Smith
Assistant professors: John F. Fraden, Steven E. Cost, Richard Young
Research assistants: Frances K. King, David L. Jones, Gabriel R. Mansfield, Nancy J. Tandy
Clinical associate professors: Thomas J. Biden, Carl F. Berry, Gary E. McLellan
Clinical assistant professor: Peter L. A. Irwin
Graduate degree offered: M.S. in Otolaryngology—Head and Neck Surgery.

The department provides one of the oldest and largest otolaryngology—head and neck surgery training programs in the world. Currently it has a full-time faculty of 13, including several members from plastic surgery, audiology, speech pathology, and dentistry (orthodontics 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 teaching program, the department’s faculty and staff carry a large patient load in head and neck surgery, head and neck plastic reconstructive surgery, facial trauma, craniotinalmcal defects, maxillofacial reconstruction, laryngological and otological surgery, and the areas of the skull base.

There are eight divisions in the department that make this program comprehensive: rhinology and neurotolaryngology; plastic and reconstructive surgery of the head and neck; otology and neurotology; otologic surgery; cranial base and neurotology; facial plastic and reconstructive surgery; and ophthalmology and otorhinolaryngology.

Another major objective of the department is to foster research programs designed to yield new knowledge in the field and provide training for its student and resident research training.

All senior faculty members participate in research and all residents are expected, as part of the resident training program, to design, conduct, and report on a research project during their program of study. In addition, they are involved in national research programs with the department in vestibular function, rhinology, taste and smell dysfunction, craniofacial development, cranial base and neurotology, facial plastic and reconstructive surgery, cranial base and neurotology, craniofacial development, and taste and smell function. These programs are supported by the department’s Medical Research Foundation, private organizations, and the federal government.

Several of these research programs receive federal and private financial support.

Graduate Program

The graduate program in otolaryngology is accredited by the Commission on Otolaryngology—Head and Neck Surgery. The program consists of a four-year course of basic and clinical science. The basic science lectures and laboratory studies are conducted during the first three and a half-months of residence.

After passing an oral and written examination, the student enters 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. A limited number of resident physicians can be accepted each year. Applicants must be graduates of a recognized class A, medical school, and must have completed one year of general surgical training in an approved program.

Programs

Clinical Education in Medical Technology

See "Division of Associated Medical Sciences" in this section of the Catalog.

Master of Science

The M.S. program in otolaryngology is open to students with various educational backgrounds. The program particularly encourages applications from students with a Bachelor of Science degree in chemistry, biochemistry, biology, zoology, and medical technology, and from students with medical and dental degrees. The program is designed to provide postgraduate training in clinical otolaryngology and all related subspecialties, including speech pathology and audiology, and to prepare students for professional positions in otolaryngology—head and neck surgery.
M.S. students participate in teaching, patient care, and research through the instructional programs of the department, the service laboratories of the department and The University of Iowa Hospitals and Clinics, and faculty members' research laboratories. Admission to the M.S. program requires a 3.00 grade-point average in science courses, a Graduate Record Examination (GRE) Aptitude Test combined verbal and quantitative scores above 1250, and a personal interview. A brochure describing departmental course requirements and giving examples of the major academic tools is available on request.

Residency Program

The department is approved for 20 residency positions in pathology, covering a training span of up to five years. The programs are designed to utilize the patient population of The University of Iowa Hospitals and Clinics and the Iowa City Veterans Administration Medical Center.

There is a systematic rotation through the various laboratory services, including surgical pathology, autopsy pathology, cytopathology, clinical biochemistry, medical microbiology, hematology, immunohematology, and transfusion centers. Adequate opportunity is afforded for concentrated study in most pathology subspecialties.

The department also offers a postdoctoral training program in clinical immunology for biochemical and clinical immunology. The program is approved by the American Board of Clinical Laboratory Immunology.

In addition, the department provides five 12-month internships and a variable number of clerkships for postdoctoral students in various areas of anatomical and clinical pathology.

Postdoctoral Training

The Department of Pathology offers postdoctoral programs in hematopathology, immunopathology, and surgical pathology for physicians who have completed at least two years of residency training in pathology. The postdoctoral training consists of one year of diagnostic work and one year of laboratory research in basic hematopathology.

The department also provides postdoctoral training in immunology, hematopathology, biochemistry of hematopoietic, cancer biology, and clinical microbiology, as well as in other areas of cellular and molecular pathology. These positions are open to individuals with either Ph.D. or M.D. degrees.

Facilities

The Department of Pathology administers the clinical laboratories of The University of Iowa Hospitals and Clinics. Most of these laboratories are located in 40,000 square feet of newly constructed laboratories. The Department of Pathology has individual research laboratories and core facility laboratories located in the Medical Research Center, Medical Laboratories, and at the Veterans Administration Medical Center. The department is well-equipped to carry out the sophisticated technology of modern cellular and molecular pathology. Also available are the College of Medicine Core Laboratories for immunodiagnostic DNA studies, hybridoma production, flow cytometry, and laboratory animal care.

Courses

Course 1: Introduction to Clinical Laboratory Technology

Course 2: Principles of Human Pathology

Course 3: Instruments and Procedures

Course 4: Medical Microscopy

Course 5: Medical Immunology

Course 6: Medical Biochemistry

Course 7: Medical Immunology

Course 8: Medical Immunology

Course 9: Medical Immunology

Course 10: Medical Immunology

Course 11: Medical Immunology

Course 12: Medical Immunology

Course 13: Medical Immunology

Course 14: Medical Immunology

Course 15: Medical Immunology

Course 16: Medical Immunology

Course 17: Medical Immunology

Course 18: Medical Immunology

Course 19: Medical Immunology

Course 20: Medical Immunology

Course 21: Medical Immunology
PHARMACOLOGY

Richard P. Michael Curren


Associate professor: Rien D. Feldman

Assistant professor: Barry Baker, Barry Kneen, and Phyllis Ireland.

Graduate programs offered: M.S., Ph.D. in Pharmacology

The department provides professional training in pharmacology for health science students, offers a Master of Science program in clinical pharmacology for students with a B.S. degree, and offers a doctoral program in didactic and research experience.

For qualified graduate students, research and training programs are available in biochemical pharmacology and drug metabolism, cardiovascular and renal pharmacology, cellular and molecular pharmacology, chemical and carcinogen pharmacology, endocrine pharmacology, neuropharmacology, and toxicology.

The department participates in other departments in educational and research activities such as the Medical Scientist Training Program, the Physician Scientist Program, the Neuroscience Program, the Cell and Molecule Biology Program, the Core Center, Diabetes and Endocrinology, the Cancer Center, and the Cardiovascular Research Center.

The department pioneered the offering of pharmacology to undergraduate students with little or no science background. The lecture and discussion sessions in 711 (TD) Drugs Their Nature, Action, and Use emphasize the mechanisms of drug action and give students a basis for rational decisions concerning the personal use of drugs.

The department offers research training in all areas of pharmacology and toxicology at the postgraduate level. It prepares students for career opportunities in teaching and research. Prerequisites for graduate study include undergraduate background in chemistry, biology, 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 to applicants who already hold the Doctor of Medicine degree. The specific objective of the program is to provide increased emphasis on and training in the science of clinical pharmacology for residents in the various clinical specialties. Completion of the M.S. program requires a minimum of two years. Satisfaction completion of the following core courses is mandatory unless specifically waived by the Department of Pharmacology faculty. Any of these course requirements may be waived at the request of the student if his or her advisor and the department faculty agree that the student has met these requirements satisfactorily at a prior time.

71.205 Pharmacology Research Seminar
71.206 Biochemical Pharmacology Seminar
71.210 Special Topics in Pharmacology
70.001 Neurobiology
71.212 Toxicology
71.216 Clinical Pharmacology
56.000 Clinical Pharmacology and Therapeutics Lecture Series

The student may select 71.105 Pharmacology for Health Sciences, Medical and may take additional courses in pharmacology or in other departments appropriate to his or her program.

Eligibility for the M.S. degree in pharmacology requires demonstrated proficiency in basic research, ability to perform on the qualifying examination (written and oral), and satisfactory preparation and defense of a master's thesis.

Doctor of Philosophy

Course requirements for the Ph.D. in pharmacology are as follows:

71.100 Pharmacology for Health Sciences, Medical
19.300 Biochemistry
19.301 Biochemistry
19.302 Medical Physiology
71.106 Pharmacology for Health Sciences, Medical
61.387 Biochemistry and Biostatistics
71.103 Pharmacology and Toxicology
71.206 Biochemical Pharmacology Seminar
71.204 Pharmacology Seminar
17.207 Neuropharmacology

The student must complete at least one additional course in his or her area of interest, and individual faculty research advisors may require more than one.

There is no departmental foreign language requirement.

Students are expected to obtain maximum laboratory research experience during the first two years. As prerequisite to the comprehensive examination and in lieu of a preliminary examination, students must submit to the director of graduate studies a manuscript of progress report detailing research accomplished during the first two years of study. After reviewing the report with a committee of the faculty, the students begin or continue their Ph.D. thesis research. The Ph.D. comprehensive examination (written and oral) is given at the end of the 5th or 6th semester. Satisfactory preparation and oral defense of the thesis complete the program.

Financial Aid

Financial support is available for all predoctoral and postdoctoral students in pharmacology.

Courses

71.100 Clinical Pharmacology

Pharmacological and experimental approaches to drug therapy in common and special situations. Prerequisite: consent of instructor.

71.101 Pharmacology for Health Sciences

Pharmacology of drugs and their effects on living systems. Basic mechanisms of drug actions, and correlation with therapeutic use. Open to students in pharmacology and to qualified graduate students with consent of course director. Offered fall semesters. Prerequisite: 71.200 and 71.210, or equivalent, and consent of instructor.

71.102 Pharmacology and Toxicology

Continuation of 71.101: systemic and experimental toxicology, interrelationships, interactions between living systems and their mechanisms of action. Offered spring semesters. Open to graduate students with consent of course director. Prerequisite: 71.101 or equivalent. Offered spring semesters.

71.103 Pharmacology for Health Sciences: Medicinal

General principles of pharmacology, pharmacokinetics, and mechanisms of drug action. Offered fall semester. Prerequisites: 71.200 and 71.210, or consent of instructor.

71.111 Pharmacology for Health Sciences: Basic

General principles of pharmacology, pharmacokinetics, and mechanisms of drug action. Offered fall semester. Prerequisites: 71.102 and 71.110, or consent of instructor.

71.129 Drugs Their Nature, Action, and Use

Principles of drug action and drug-generating activities, and contours of biochemistry, bacteriology, and toxicology that may be used in studies of health sciences. Offered spring semesters.

71.127 Pharmacology for Health Sciences: Physical Assistant Students

General principles of pharmacology, pharmacokinetics, and mechanisms of drug action, and correlation with therapeutic use. Offered fall semester. Prerequisites: 71.102 or consent of instructor.

71.130 Pharmacology for Physicians

Pharmacological principles of pharmacology and action, absorption, distribution, metabolism, excretion, and toxicity of various classes of drugs. Open to undergraduate students with background in biochemical pharmacology. Prerequisites: 71.100 and 71.102, or consent of instructor.

71.124 Pharmacology for Physicians

Pharmacological principles of pharmacology and action, absorption, distribution, metabolism, excretion, and toxicity of various classes of drugs. Open to undergraduate students with background in biochemical pharmacology. Prerequisites: 71.100 and 71.102, or consent of instructor.

71.122 Intermediate Pharmacology

Pharmacological principles of pharmacology and action, absorption, distribution, metabolism, excretion, and toxicity of various classes of drugs. Open to undergraduate students with background in biochemical pharmacology. Prerequisites: 71.100 and 71.102, or consent of instructor.

71.120 Molecular Pharmacology

Molecular basis of drug action and drug-generating activities in the mechanism of drug action. Open to graduate students with background in biochemical pharmacology. Prerequisites: 71.100 and 71.102, or consent of instructor.

71.134 Toxicology

Toxicology of the respiratory system. Open to graduate students with background in biochemical pharmacology. Prerequisites: 71.100 and 71.102, or consent of instructor.

71.135 Pharmacology Seminar

Open to graduate students with background in biochemical pharmacology. Prerequisites: 71.100 and 71.102, or consent of instructor.

71.112 Advanced Cardiovascular Pharmacology and Physiology

Recent developments in cardiovascular pharmacology in cardiovascular diseases. Offered fall semester of odd years. Prerequisite: consent of instructor.

71.113 Cardiovascular Pharmacology

Recent developments in cardiovascular pharmacology in cardiovascular diseases. Offered fall semester of odd years. Prerequisite: consent of instructor.

71.114 Urinary Pharmacology

Principles of drug action and drug-generating activities in the mechanism of drug action. Open to graduate students with background in biochemical pharmacology. Prerequisites: 71.100 and 71.102, or consent of instructor.
PHYSICAL THERAPY

See "Division of Associated Medical Sciences" in this section of the Catalog.

PHYSICIAN ASSISTANT PROGRAM

See "Division of Associated Medical Sciences" in this section of the Catalog.

PHYSIOLOGY AND BIOPHYSICS

Head: Robert B. Fellows
Professor: Francis M. Althoud (Internal Medicine), Kevin F. Campbell, Robert E. Fellows, Peter A. Cotlin, Carl V. Goldfr (Geriatric Science), Richard A. Hasson, Charles C. Hoeller.
Professor emeritus: G. Edgar Fulker, Jr., Byron A. Schueler.
Associate professors: Darren L. Guzey, Michael J. O'Donnell, Steven E. Penrose, Andrew Yen (Internal Medicine).
Associate professor emeritus: Charles J. Spiro, Gordon W. Kearle.
Assistant professors: Susan M.J. Dunn, Lloyd J. Hallman, Thomas J. Schmidt, Erwin S. Fischel.
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. This includes instruction in physiology and biophysics for medical, dental, pharmacy, nursing, and other health professional students, as well as in the medical student training program. A combined M.S.-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 endocrinology, neurophysiology, and membrane physiology and biophysics, with emphasis on molecular and cellular mechanisms. Areas of research opportunity include central electrophysiology, cell growth and differentiation, cell membrane structure and function, cellular and molecular endocrinology, excitable-cell physiology, muscle physiology, neuroendocrinology, regulation of gene expression, and nonvital biopsy.

Graduate Program

The graduate program in physiology and biophysics is designed to provide broad general knowledge of fundamental life processes at molecular, cellular and organ levels, as well as an opportunity for intensive study in major areas of physiology and biophysics with emphasis on endocrinology, membrane biology, and neuroendocrinology. The program places strong emphasis on the development of modern research skills and their application in the conduct of original dissertation research.

Entering 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 activities of departmental faculty. In addition to advanced courses in general physiology and biophysics, the department offers specialized courses in immunology, endocrinology, and environmental and exercise physiology, and neurophysiology. Students may elect to take courses in other departments appropriate to meeting their educational and research objectives.

After completing required course work and performing satisfactorily on a comprehensive examination in physiology and related areas, students are expected to write a final thesis or original research that, combined with the preparation of a doctoral dissertation and its defense to a final oral examination.

All degree candidates have supervised experience as classroom instructors and teaching assistants as part of their graduate training program.

Financial Aid

Full-time doctoral students in physiology and biophysics may obtain financial support contingent upon satisfactory academic progress.

Facilities

The Department of Physiology and Biophysics has a large number of specialized equipment in research laboratories on the campus, as well as in the comprehensive clinical research laboratories in the Coiner Clinical Research Center. These laboratories include the Department's own research facilities as well as the clinical research facilities of the Department of Medicine. These facilities are available to all graduate students in the Department of Physiology and Biophysics.

Admission

Applicants for graduate admission must be graduates of an accredited institution. Prior to matriculation, with an overall science grade-point average of 3.50 or better, coupled with strong performance on the Graduate Record Examination (GRE) Aptitude Test. The appropriate background for graduate study
in physiology and biophysics is an undergraduate major in one of the biological, chemical, physical, mathematical, or engineering sciences with one or more years of coursework in Biology, physics, chemistry (including physical chemistry), and mathematics through calculus.

Courses

12910 Human Physiology

Biological science; Human physiology. Offered fall semester. Prerequisites: PHYS 371, PHYS 471, or equivalent, or consent of course director.

12920 Intermediate Physiology

Principles of physiology with emphasis on organ system and cell function. Offered spring semester. Consent of course director required.

12930 Neurophysiology

Principles of physiology with emphasis on nerve cells and their function. Offered in alternate years. Offered during spring semester. Consent of course director required.

12940 Biomedical Engineering Physiology

Principles of physiology, with special emphasis on organ system and cell function. Offered in alternate years. Offered during spring semester. Consent of course director required.

12950 Brain Physiology for Physicians

An introduction to physiology with emphasis on neural system and cell function. Open only to premedical students. Offered alternate semesters. Offered during fall semester. Consent of course director required.

12960 Research, Independent Study

For students who are not enrolled in advanced courses in the Department of Physiology and Biophysics. Consent of the director of graduate studies required.

12970 Nervous System

Sensory and autonomic nervous system, provided with adequate knowledge of basic neurophysiology. Offered fall semester. Consent of course director required.

12980 Cellular Neurobiology

Neurophysiology and neurochemistry. Required of all students. Offered alternate years. Consent of course director required.

12990 Developmental Neurobiology

The physiology of development of the nervous system. Offered fall semester. Consent of course director required.

13000 Exercise Physiology

Physiological responses to exercise. Cardiovascular and respiratory responses to exercise. Exercise and training programs for athletes. Exercise and fitness programs for special needs. Offered spring semester. Consent of course director required. Consent of course director required. Consent of course director required.

13010 Human Physiology

Physiological responses to exercise. Cardiovascular and respiratory responses to exercise. Exercise and training programs for athletes. Exercise and fitness programs for special needs. Offered spring semester. Consent of course director required. Consent of course director required. Consent of course director required.

13020 Human Physiology

Physiological responses to exercise. Cardiovascular and respiratory responses to exercise. Exercise and training programs for athletes. Exercise and fitness programs for special needs. Offered spring semester. Consent of course director required. Consent of course director required. Consent of course director required.

13030 Human Physiology

Physiological responses to exercise. Cardiovascular and respiratory responses to exercise. Exercise and training programs for athletes. Exercise and fitness programs for special needs. Offered spring semester. Consent of course director required. Consent of course director required. Consent of course director required.

PREVENTIVE MEDICINE AND ENVIRONMENTAL HEALTH

Head: Robert B. Wallace

Professor: Lauren Dutson, William Clarke, Kairos Thompson, Shao Ying Liu, Pan Madera, Arne L. Westman, Richard D. Hendrickson, Robert B. Wallace, Robert Wunder

Assistant professor: Orley Berry, The Fan, Liu L., A. K. Grady, F. William, Donald Magness

Adjunct professor: John Berg


Adjunct professor: Elizabeth Chisholm, Charles Davis, Michael Jones, Burton Kress, Douglas Blystone

Assistant professor: Robert MacDonald

Graduate degree: Ph.D. in Preventive Medicine and Environmental Health

Preventive medicine relates to the individual patient when knowledge and techniques from biological, medical, social, and behavioral science are applied to prevent disease or its progression. It relates to the health of the entire community when the knowledge and skills of medical and allied sciences are applied in an organized community effort to maintain and improve the health of populations.

Departmental research and teaching activities are conducted within three primary divisions: biostatistics, epidemiology, and occupational and environmental health. The division of biostatistics works closely with both clinical and basic science investigators throughout the entire health center in the initial design and subsequent analysis of research projects; they also work closely with other laboratories in the division of clinical studies in developing problems of traumatic injury and developing new approaches to their treatment.

The division of epidemiology includes health care organization, delivery, and risk factors for disease in the general population: behavioral factors in disease, and the evaluation of disease and control measures in the community. Occupational and environmental health faculty are concerned with assessment of workplace physical and environmental factors and their relationship to disease. Of particular interest are the health problems of agricultural and industrial workers.

Examples of ongoing departmental research are carried out in the State Health Registry of Iowa, which records in detail all the cases of cancer and birth defects that occur in residents of Iowa, the Aging Prevalence Project, which investigates health problems and needs of a selected cohort of Iowa's elderly: the developmental evaluation, and field testing of vaccine against schistosomiasis (sail parrot), the University Occupational Health Service, the Community Primary Prevention Project, Biological Counseling Service, and the Project for the Health Effects of Environmental Contamination.

The department supported development of the Institute of Agricultural Medicine and Occupational Health, the first agency in the Western Hemisphere dedicated to the study of the occupational health problems of the agricultural worker. All departmental programs are enhanced through institutional support for the University's Lab Services, the Environmental Health Services, the Graduate Program in
Graduate Programs
The master's program offers a degree with emphasis in occupational and environmental health, in community health. Admission to the community health track is limited to those who already are health professionals. The Ph.D. program is available with emphasis in epidemiology, biometry, or occupational and environmental health. While pursuing a degree, students are expected to maintain a 3.0 grade-point average. In addition, students who receive 7 semester hours or more of grades of C or lower in departmental coursework are dismissed from the program.
Joint master's options exist between both the Physician Assistant Program and the Program in Urban and Regional Planning and the Department of Preventive Medicine and Environmental Health in the College of Medicine. This option results in an M.A. or an M.S. in planning and an M.S. in preventive medicine and environmental health. Separate admissions to both academic units are required.
A combined graduate level course of study between the Physician Assistant Program and the Department of Preventive Medicine and Environmental Health is also available. This combined program provides a broad foundation in preventive medicine. The three-year integrated curriculum consists of 30 semester hours of graduate courses in epidemiology, environmental health, biostatistics, and preventive medicine, and 30 semester hours of courses made up of the standard core requirements of curriculum of the Physician Assistant Program.
Electives may be selected from a wide range of courses in the departments of preventive medicine and in other departments at the University of Iowa and the College of Medicine. Upon completing the program, students earn a D.P.H. degree in the Physician Assistant Program from the College of Medicine and an M.S. degree in preventive medicine from the Graduate College. Separate admission to both academic units is required. The program is described in detail under "Physician Assistant Program" in the Directory of Area Medical Sciences section of the Catalog.
Institute of Agricultural Medicine and Occupational Health
The Institute of Agricultural Medicine and Occupational Health is housed in the Agricultural Medicine Research Facility on the Craighead campus. Research, teaching, and extension activities concern the safety and health problems of industrial and agricultural workers. Areas of study include environmental health, comparative medicine, medical hygiene, occupational medicine, and rural health.
Financial Aid
A limited number of research assistantships, traineeships, and fellowships are available within the department.
Admission
Application deadlines are July 15 for fall semester, December 1 for spring semester, and May 1 for the summer semester. These deadlines apply both to University of Iowa and non-Iowa residents. Non-resident graduate students are admitted on a space available basis. Minimum grade-point average requirements are 2.70 for admission to the master's program and 3.00 for the Ph.D. Applicants must have taken the Graduate Record Examination (GRE) Aptitude Test (the acceptable score for most students is a combined verbal and quantitative score of 1200). Also, if required by the University, Foreign Admissions Office, non-U.S. citizens must complete the Test of English as a Foreign Language (TOEFL). A minimum combined score of 550 is considered acceptable for most students.
Applicants must have an undergraduate major or course background in science or mathematics, depending on their proposed program of graduate study. However, in order to be considered for admission to the master's program with emphasis on community health, applicants as a rule must already possess or be pursuing an advanced degree in the health sciences and wish to apply preventive medicine and environmental health principles to their respective professional activities. Applicants who meet the requirements for the M.S. or Ph.D. programs but who do not want to work toward an advanced degree may be admitted on "professional improvement" status. Also, applicants are required to specify on the application whether they expect to use the program (track) to which they are applying, to forward their letters of recommendation, and to submit a short description of their professional goals and why they want the degree.
Courses
CEM 350 Cooperativity Fundamentals 3 a, b
Interpersonal communication and environmental interpersonal techniques.
CEM 551 Men and the Environment 3 a
Human ecology in relation to potential and demonstrable effects of farming methods, industrial and nonindustrial technologies, and social, economic, and political factors. Also introduces students to environmental science and environmental topics. Includes pedodology and water use and soil pollution, control and remediation of natural and anthropogenic problems or pollution in soil and disease and control of pollution and disease in human environments. Spring semester.
CEM 601 Dynamic of Health 3 a, b
CEM 603 Preventive Medicine for Physicians 3 a
Develops the scientific basis and principles for clinical preventive medicine and its application as a part of the practice of medicine. The course is designed for medical students in preventive medicine at the University of Iowa and trainees in preventive medicine at the University of Iowa. Spring semester. Corequisite: CEM 602.
CEM 604 Preventive Medicine 3 a
Introduces students to occupational and community medicine, environmental health, epidemiology and delivery of health services and their evaluation in developing countries in a political, social, and economic context. Cross-listed with CEM 602 for medical students.
CEM 614 Biostatistics 3 a
Biostatistical methods of study to read and evaluate the medical literature. Descriptive and inferential statistics: confidence intervals, standard error, standard deviation; the use of z-scores and t-values; and applications of the chi-square test. Cross-listed with CEM 615 for medical students.
CEM 615 Categorical Health 2 a
Descriptive and inferential statistics: confidence intervals, standard error, standard deviation; the use of z-scores and t-values; and applications of the chi-square test. Cross-listed with CEM 614 for medical students.
CEM 616 Principles of Epidemiology 3 a
CEM 617 Introduction to Biostatistics 3 a
Introduction to the design and analysis of experiments and data analysis in the biomedical sciences. Introduction to the design and analysis of experiments and data analysis in the biomedical sciences. Design and analysis of experiments. Some statistical methods. Spring semester. Cross-listed with CEM 616 for medical students.
CEM 620 Design of Experiments 3 a
Introduction to the design of experiments and data analysis in the biomedical sciences. Design and analysis of experiments. Some statistical methods. Spring semester. Cross-listed with CEM 616 for medical students.
CEM 650 Biometrics and Bioassay 4 a
CEM 651 Problematic in Preventive Medicine 2 a
Methodological problems in preventive medicine, with emphasis on the nature of the scientific problem and the appropriate methods to use for its solution. Cross-listed with CEM 650 for medical students.
CEM 652 Independent Study in Preventive Medicine 2 a
Independent study in preventive medicine, with emphasis on the nature of the scientific problem and the appropriate methods to use for its solution. Cross-listed with CEM 650 for medical students.
CEM 653 Introduction to the Design of Sample Surveys 2 a
Survey methodology and epidemiological sampling. Study of sampling error, study design, and survey methodology. Cross-listed with CEM 650 for medical students.
CEM 654 Statistical Methods 4 a

Radiation Biology \ Medicine

Security Medical Faculty at Oldal, the Mid-Eastern Iowa County Mental Health Center in Iowa City, and the Mental Health Institute at Independence.

The department offers an approved two-year residency in child psychiatry.

The department staff is actively involved in genetic and family studies of psychiatric disorders, and in research in the fields of genetic and biological psychiatry, neurochemistry, neurophysiology, and psychosocial aspects of behavior. Many opportunities are available for students and residents to participate in research. The basic science areas of neurochemistry, neurophysiology, and electrophysiology offer additional opportunities to students and residents for special study and research.

The clinical areas of psychology, child psychiatry, and group psychotherapy also offer opportunities to a limited number of students for research and further study.

Courses

**T3100 Psychiatry for Physician Assistant Students**

**T3140 Psychiatric Elective for Physician Assistant Students**

**T3230 Research in Psychiatry**

Medical student, graduate student, and physicians who have particular interest in the neurochemical and psychosocial aspects of the patient are excellent candidates for this elective.

**T3231 Problems in Psychiatry**

Courses Open Only to Medical Students

**T351 Clinical Psychiatry**

Open only to medical students.

**T351 General Hospital Psychiatry**

Psychiatric Consultation Service. The University of Iowa Hospital and Clinics.

**T352 Introduction to Medical Psychiatry**

Area 1: T352.

**T353 Adult Psychiatry**

Psychiatric Consultation Service.

**T354 Hospital Psychiatry, Interns**

Administrative Hospital, Iowa City.

**T355 Child Psychiatry**

Psychiatric Consultation Service. Children's Clinic.

**T37 Emergency Room Psychiatry**

Emergency Room, Iowa City.

**T42 Correctional Psychiatry, Iowa State Medical Facility, Dubuque**

**T45 Research Psychiatry**

Graduate students receive special training and experience in research in psychiatric medicine through clinic and research programs at the University of Iowa Hospital or at affiliated and cooperating research centers.

**T3555 Psychopharmacology**

Course offered only to medical doctors. Special permission of medical director, special permission of psychiatric epidemiology. The course provides an understanding of the epidemiology of specific diseases including dementia, schizophrenia, depressive, anxiety, personality disorders. Credit may be given for T3555. Credit cannot be given for both T3555 and T3555.

**T5307 Child Clinical Clerkship in Medical Psychotherapy**

Area 2: T5307.

**T5308 Special Studies on Campus**

**T5309 Special Studies off Campus**

**RADIATION BIOLOGY**

Director: James W. Osborne


Professor emeritus: Edgar H. Rife, Jr.

Assistant professor: R. Greg Cluxton

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

The Radiation Biology Program provides in-depth training and research experience in the study of the physical, chemical, and biological effects of radiation and the theory and widespread application of radiobiology methodology. It also presents the importance of these areas to society, research and clinical medicine, and to the general public.

**Undergraduate Study**

Two courses, T7304 Introduction to Radiobiology and T7306 Environmental and Radiological Health Physics, are open to undergraduate students in liberal arts or professional colleges. T7304 is especially appropriate for students who want an overview of the uses of radiation in our society and the biological effects of radiation. These courses also are of interest to students who plan to enter medical, nuclear medicine technology, environmental health, or similar programs.

**Graduate Programs**

The M.S. program in radiation biology emphasizes technical aspects and serves as a minor field for students whose 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. Further examination is given to other methods of qualifying.

After completing the introductory course, students may emphasize 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, and others major in biological aspects. It is either case, a broad base is required for complete specialization in the field.

In addition to formal lectures, the programs involve small group conferences and discussions. Laboratory exercises are emphasized, and the student has the opportunity to become familiar with many types of instruments and techniques. It is recommended that a candidate for the Ph.D. have a 'researching 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 a teaching assistant and at least one as a research assistant. No registration is required and no academic credit is given.

**Special Programs**

Postdoctoral training is available by arrangement with the program chair and individual faculty members.

**Facilities**

The Radiation Research Laboratory has X-ray generators and other radiation sources, including a 12,000 Curie Co-60 irradiator. Students and staff also have access to other radiation sources, such as the Co-60 gamma source and the linear accelerators in the Department of Radiology and the James Reitler Research Laboratory.

The Radiation Research Laboratory has a variety of radiation detection and counters, including gamma and liquid scintillation counters and a small animal whole-body irradiator.

The laboratory also has ultraviolet spectrophotometers, various types of equipment for chromatography and electrophoresis, an automatic cell counter and particle size, tissue culture facilities, and facilities for preparing histological sections (tissues from fixative to frozen) and autoradiographs.

**Financial Aid**

Graduate students are supported as research assistants from funds available through research grants and contracts, or as teaching assistants from departmental funds. Some awards also are available to graduate students and postdoctoral students through the U.S.P.H.S. Research Service Award program to support training in biomedical radiation research. Individual postdoctoral awards also may be available and are applied for jointly by the candidate and his or her faculty sponsor.

**Courses**

T7105 Introduction to Radiobiology and Radiological Physics


T7106 Environmental and Radiological Health Physics

Radiation hazards, control regulations, effects of radiation on the population, radiological safety, hazards and their interaction with radiological research. Offered fall semester of odd years.
Faculty
Special faculty strengths are centered in the fields of pathophysiology and problems of severe burns, organ transplantation, surgical control of morbid obesity, inflammatory bowel disease, diabetes, and pediatric surgery and plastic surgery. The thoracic/cardiovascular and neurosurgical surgeons have particular expertise in clinical management of the spectrums of diseases in their specialties.

Facilities
The department has more than adequate numbers of patients with a wide variety of surgical and nonsurgical patients for training. Special areas include the only burn unit in the state. Moreover, it has adequate patient rooms, both clinical and basic science research.

Laboratories provide equipment, space, and technical expertise to support training and a wide spectrum of clinical and scientific research. These laboratories include animal surgery, tissue culture, gastrointestinal, microscopy, peripheral vascular surgery, hypertension, organ preservation, cardiovascular surgery, neurosurgery, and oncology.

Courses
70.01 Basic Emergency Skills 1 h.b.
Emergency courses in emergency medical techniques; emphasis on practical exercises and applications of lecture material.

70.02 Vascular Research 1 h.m.

70.05 Clinical Surgery 6 h.m.
Six months clinical exposure to residents who become active members of surgical teams to work on wards, in clinics, and in the operating rooms. Work with residents and medical consultants. Special emphasis on anesthesiology, surgery, and the appropriate surgical procedures.

70.10 Emergency Room Elective for Physicians Assistant Students 1 h.m.

70.15 Surgery Elective for Physicians Assistant 2 h.m.

70.16 Surgery Elective (Burn Unit) for Physicians Assistant Students 1 h.m.

70.17 Advanced Clinical Surgery 2-3 h.m.
Advanced responsibility for patients from in and outpatient clinics, and in the operating rooms. Involvement as an attending surgeon, with responsibility for the clinical and operative management of patients. Primary, and, in some cases, consultant surgeon.

70.19 Advanced Surgery Elective 1 h.m.
Elective study providing a closer contact with the University. Physicians Assistant 70.19 and course of instruction.

70.25 Advanced Surgical Elective 2 h.m.
Emphasis on study in one of the surgical specialties. Physicians Assistant 70.25 and course of instruction.

70.26 Hospital Experience 1 h.m.
Interested được với các bác sĩ, xây dựng liên hệ với các cơ sở y tế, và tham gia vào các nghiên cứu khoa học. Học viên sẽ được tham gia vào các hoạt động nghiên cứu liên quan đến các căn bệnh và chính sách y tế hiện tại.

70.27 Emergency Room Elective in Guangzhou 2 h.m.
Emergency courses in emergency medical techniques; emphasis on practical exercises and applications of lecture material. Special emphasis on anesthesiology, surgery, and the appropriate surgical procedures.

70.28 Clinical Research 1 h.m.
Clinical research, including observation of surgical procedures, participation in clinical trials, and involvement in medical research.

70.30 Pediatric Surgery 1 h.m.
Clinical exposure to surgical procedures in pediatric surgery, and involvement in medical research.

70.31 General Surgery 1 h.m.
Clinical exposure to surgical procedures in general surgery, and involvement in medical research.

70.32 Advanced Clinical Surgery 2-3 h.m.
Advanced responsibility for patients from in and outpatient clinics, and in the operating rooms. Involvement as an attending surgeon, with responsibility for the clinical and operative management of patients. Primary, and in some cases, consultant surgeon.

70.33 Clinical Vascular Surgery 1 h.m.
Clinical exposure to surgical procedures in vascular surgery, and involvement in medical research.

70.34 General Surgery 2-3 h.m.
Clinical exposure to surgical procedures in general surgery, and involvement in medical research.

70.35 Advanced Clinical Surgery 2-3 h.m.
Advanced responsibility for patients from in and outpatient clinics, and in the operating rooms. Involvement as an attending surgeon, with responsibility for the clinical and operative management of patients. Primary, and in some cases, consultant surgeon.

70.36 General Surgery 2-3 h.m.
Clinical exposure to surgical procedures in general surgery, and involvement in medical research.

UROLOGY
Head: Richard D. Williams
Professor: Charles E. Nunnally, Harvey Luning, Jan E. Busch, and John L. Chambers, Richard D. Williams
Associate professors: William W. Beesley, James E. L. Chambers, and John L. Chambers
Assistant professor: James E. L. Chambers
Resident: Edward H. Weisback

In addition to the areas of urinary tract disease, urinary tract infections, diagnostic urology, and the results of urinary tract obstruction, urology also includes urologic endoscopy, urologic oncology, uroradiologic endoscopy, and pediatric urology.

The Department of Urology in the University of New England Medical School offers courses in all these fields, at the 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 the relationship of urology 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 a 16-week Introduction to Clinical Medicine, which involves the entire second semester of second-year medicine. The department offers an intensive lecture and demonstrations concerning the diagnosis and treatment of diseases involving the genitourinary tract in the male and female patient. In the third year and fourth years of the curriculum in medicine, the department offers courses in diagnostic urology, endocrine urology, oncology, and the entire field of urology. In the required third-year clerkship, the department offers a broad range of materials, 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 practice surgeons, and conducted by the senior staff, whose interests include pelvic urology, reproductive physiology, male urology, oncology, and prostatic diseases. In the first year, it has earned international recognition for its studies of prostate cancer.

The urologic laboratories conduct research and offer instruction in experimental urology and cellular immunology.

Courses
71.01 Basic Urology 1 h.m.
Intensive two-week course in urology and clinical laboratory work. Excellent opportunity for students interested in urological surgery. Physician Assistant 71.04 and course of instruction.

71.02 Advanced Urology 1 h.m.
Exposure to advanced topics in urology and clinical laboratory work. Excellent opportunity for students interested in urological surgery. Physician Assistant 71.04 and course of instruction.

71.03 Urological Research 1 h.m.
Urological research, including observation of surgical procedures, participation in clinical trials, and involvement in medical research.

71.04 Urological Surgery 1 h.m.
Clinical exposure to surgical procedures in urology, and involvement in medical research.

71.05 Pediatric Urology 1 h.m.
Clinical exposure to surgical procedures in pediatric urology, and involvement in medical research.

71.06 Urological Endoscopy 1 h.m.
Clinical exposure to urological endoscopy, and involvement in medical research.

71.07 Urological Oncology 1 h.m.
Clinical exposure to urological oncology, and involvement in medical research.

71.08 Urological Urology 1 h.m.
Clinical exposure to urological urology, and involvement in medical research.

71.09 Urological Pathology 1 h.m.
Clinical exposure to urological pathology, and involvement in medical research.

71.10 Urological Laboratory 1 h.m.
Clinical exposure to urological laboratory, and involvement in medical research.

71.11 Urological Research Laboratory 1 h.m.
Clinical exposure to urological research laboratory, and involvement in medical research.

71.12 Urological Surgery 1 h.m.
Clinical exposure to surgical procedures in urology, and involvement in medical research.

71.13 Urological Endoscopy 1 h.m.
Clinical exposure to urological endoscopy, and involvement in medical research.

71.14 Urological Oncology 1 h.m.
Clinical exposure to urological oncology, and involvement in medical research.

71.15 Urological Pathology 1 h.m.
Clinical exposure to urological pathology, and involvement in medical research.

71.16 Urological Laboratory 1 h.m.
Clinical exposure to urological laboratory, and involvement in medical research.

71.17 Urological Research Laboratory 1 h.m.
Clinical exposure to urological research laboratory, and involvement in medical research.
College of Nursing

Dean: Geraldine Fisher
Assistant dean, undergraduate studies and community affairs: Frances Malcolm
Assistant dean, clinical practice: Sally Martin

Assistant professors: Mary Roger, Gloria Babich, Marlene Cohen, Carolyn Coward, Connie Delaney, Janice Durey, Myrna Eames, Diane Gaunt, Cynthia Glavas, Mary Hardy, Deirdre Hovey, Marion Johnson, Kathleen Kelly, Margaret Keach, Connie Kraus, Serina Livsey, Mindey Ng, Frances Nike, Paula Nobley, Jean House (leave of absence), Leanne Palmer, Beverly Sabo, Annette Schubert, Mary Stewart-Demmons, Kay Welker, Marcel Williams

Assistant professor emeritus: Arthia Austin

Associate professor: Martie Hoxie, Mary Buck

Teaching Assistants: Larry Arne, Ali, Robert Alpas, Sandy Benham, Teresa Bert, Joel Beach, John Beauford, William Biggs, Leslie Bird, Linda Blaisdell, Kenny Bland, Phil Drinkwater, Dale Freeman, Sharon Geary, Laura Gentry, Robert Kline, Arnie Laski, Leslie Marshall, Sharon McDonald, Sandra Powell, Jean Roosen, Elizabeth Swanson

Associate professor emeritus: Gladys Berg, Geraldine Byrne, Maryann Caudill, Nancy Jacobson, Marlene Lynden, Anna E. Overland, Ella H. Rasmussen

Assistant professor: Mary Roger, Gloria Babich, Marlene Cohen, Carolyn Coward, Connie Delaney, Janice Durey, Myrna Eames, Diane Gaunt, Cynthia Glavas, Mary Hardy, Deirdre Hovey, Marion Johnson, Kathleen Kelly, Margaret Keach, Connie Kraus, Serina Livsey, Mindey Ng, Frances Nike, Paula Nobley, Jean House (leave of absence), Leanne Palmer, Beverly Sabo, Annette Schubert, Mary Stewart-Demmons, Kay Welker, Marcel Williams

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Graduate degrees offered: M.A., Ph.D. in Nursing
The College of Nursing is an integral part of The University of Iowa Health Center, sharing its commitment to teaching, research, and patient care resources that have earned international recognition. The University health center provides an unusually fine setting for nursing preparation, because the educational and clinical resources that are needed to educate nurses are available on or near the campus. Faculty and students participate fully in University life and contribute their time, interest, and abilities to 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 Bachelor of Science in Nursing (B.S.N.) at The University of Iowa is designed to provide preparation for careers in the hospital care of patients and in community agencies such as public health services and industrial health. It also serves as the base for graduate study in nursing.

In addition to the advantages of combining general education with specialized professional preparation, a college or university program offers the advantages of full participation in the college academic and recreational activities of a highly diverse campus, and advantages that may be less to be found in other pursuing, a college or university environment better people not only to be prepared for a career, but to also be able to achieve a life of thought and action informed by knowledge, intuition, and contemplation.

The program prepares professional nurses to be primary health providers who are able to work in a broad range of health promotion and teaching activities and to coordinate care in any sector of the health-care system. The nursing major provides a basis for nurses' roles in wellness and health promotion, in acute care, and in long-term care for chronic illness. The professional nurse provides care to individuals, families, groups, and communities along a continuum of health, illness, and disability. In addition to providing care, the nurse serves as a coordinator of health care by organizing and facilitating the delivery of comprehensive, efficient, and appropriate service to individuals, families, groups, and communities. The nurse demonstrates ability to conceptualize the total continuing health needs of the patient, including legal and ethical aspects of care. The Iowa program's goal is to produce graduates who are competent, creative, and compassionate.

The 138-semester-hour course of study consists of 75 semester hours of liberal arts General Education Requirement courses and supportive prenursing courses, and 53 semester hours of course work in the nursing major. Students can expect to complete the program in four or four and one-half academic years. An RN-B.S.N. progression option is available for diploma and ADN registered nurses who wish to complete the B.S.N. For these 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 the preprofessional level of content from the sophomore through the senior year. The curriculum reflects the current trend to health care delivery toward emphasis on nursing as a service provided both in schools and outside hospitals. Students have clinical experiences that are a part of the activities of a major teaching hospital 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 College of Nursing. Cooperating state institutions and independent colleges that participate in the transfer plan include the Iowa State University; the University of Northern Iowa; and Upper Iowa University; and Brown CCOH, Morningside, Loras, Luther, Clarke, Simpson, and Mt. Mercy colleges. Participating community colleges are located in Ottumwa, Mason City, Marshalltown, Muscatine, 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. Admission standards for transfers are the same as for all other College of Nursing applicants. Prospective transfer students who want more information about this plan should contact the cooperating institution of their choice.

### Cooperative Education Summer Clinical Internship

High-achieving undergraduates have the opportunity to develop clinical skills through placement in a summer employment setting. Opportunities are available in hospitals, community health settings, and occupational health services in Iowa and surrounding states. This program provides undergraduates the opportunity to work closely with a preceptor while being employed, and with a faculty member as pre- and post-internship seminar.

Internships are available to qualified undergraduate students who have completed three semesters of clinical nursing courses and have maintained a nursing grade-point average of 3.00 or higher. Interested students should contact the College of Nursing coordinator of the Cooperative Education Summer Clinical Nursing Internship Program, or the Office of Cooperative Education, 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. These plans are designed to provide courses in this area with a focus on aging. Students may take courses in aging, and may also have the option of completing a minor in aging studies. For further information 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 seminars and independent study experience for qualified and motivated students. Students must have completed the first clinical laboratory year and must maintain a cumulative grade-point average of at least 3.25 and a nursing grade-point average of 3.50. The baccalaureate nursing honors program enables students to explore subject matter based on individual interests, needs, and goals. It provides opportunities for self-initiative and intellectual and personal development, and challenges students to grow and excel. Students who fulfill the requirements of the program will graduate "with honors" in nursing.

### Comprehensive AssessTest

All students are encouraged to take the Mosby Comprehensive AssessTest during the final semester of their senior year. The
Mostly AssessTest is designed for test nursing students' essential nursing knowledge and application in various clinical situations; identify students' specific strengths and weaknesses, providing a sense of direction for further study and a means for setting priorities; 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 AssessTest examination score is not computed in the course grade. Students receive a detailed printout of the results of their examination and are given recommendations for self-directed study.

Registered Nurses

The RN-B.S.N. progression program offers registered nurses the opportunity to build on their nursing knowledge and experience base. The nursing major coursework is designed specifically for registered nurses with a focus on nursing process and health assessment; community health core clinical settings; leadership, management, and research opportunities; nursing professionalism; and computer expertise. Each RN-B.S.N. student is assigned to a College of Nursing faculty member for continued academic advising and curriculum planning. Students may transfer previous course work completed at a college or university to satisfy some prerequisites to the nursing major. They may complete the balance of prerequisites at The University of Iowa and at many other colleges and universities in Iowa. In addition, they may take specific challenge examinations.

Once prerequisites are met, students may complete the RN-B.S.N. nursing major sequence during their first three semesters in a sequence that includes three clinical and two nontclinical nursing courses. RNs may study on campus and in designated surrounding sites.

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 at each campus have their own Associated Student Nurses (ASN) and also are eligible for membership in the state and national associations of nursing students. ASN provides opportunities for professional growth and development in nursing. Its representatives are members of the Collegiate Activities Council at The University of Iowa and there is an ASN representative on the Academic Council of the College of Nursing.

Expenses

Students pay the general University fees throughout the program. They also must purchase uniforms, white shoes, a stethoscope, a watch with a full-serve second hand, and supplies and materials for required nursing courses. Students arrange for their own housing, transportation requirements and transportation once 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. Hospitals and agencies in which students are involved in clinical practicums require that students have insurance coverage. Entering students in the College of Nursing are provided information about this requirement and must show verification that they have purchased and currently hold professional liability insurance.

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 history, three years of mathematics, 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, each student must be admissable to The University of Iowa and present:

A minimum of 26 semester hours completed in an accredited college.

A successful completion of seventeen of the fourteen prerequisites to the first clinical nursing course, including successful completion of three of the following science courses: organic chemistry, inorganic chemistry, organic biochemistry, animal biology, microbiology, human anatomy, human physiology, and

A minimum grade-point average of 2.20 on a 4.00 scale.

Preclinical Background

Students must satisfy the following requirements, in addition to the biological science courses required for admission to the college, before beginning clinical nursing course work:

• Electrocardiogram (ECG) (required prior to clinical course work)

• 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 (234).

• Physical—one-half year of high school physical education or completion of a physical fitness course at the college level, or an initial examination in physical fitness.

• Standards

To be considered for admission to the College of Nursing, the applicant should have satisfactorily completed all college courses.

American College Tests

All applicants for admission to The University of Iowa must complete the American College Test (ACT) and the SAT. Information on the tests can be obtained from the American College Test program, Box 451, Iowa City, Iowa 52245.

Selection Factors

Fulfillment of minimum admission requirements does not guarantee admission in the College of Nursing. Applications are processed as they are received. From applicants who meet minimum requirements, the college's admission committee selects those who appear to be best qualified. The committee may require personal interviews. A physical examination report and specific health screening requirements must be on file at Student Health Service ten days prior to the opening of classes for the first clinical nursing course.

Application Deadlines

Applications must be received by May 1 for the fall semester and December 1 for the spring semester.
Graduate Programs

Master of Arts (M.A.)

The University of Iowa Master of Arts 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 it may also provide advanced study. For this reason, graduation from an NLN-approved baccalaureate program is one of the admission requirements.

The curriculum consists of a core component and areas of specialization and role preparation area in clinical specialization, administration, or teaching. Students may choose a clinical specialization area in the child health specialization area, or a nurse executive option in the nursing administration role preparation area.

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.

Degree Requirements

The 45-semester hour curriculum ordinarily requires four semesters of full-time study for completion. Part-time and evening study options are available, but students must maintain a 2.50 grade-point average and must successfully complete both a written comprehensive examination and a thesis project with oral defense.

The master's degree curriculum consists of five components:

**Advanced Nursing Core (17 semester hours)**

Course work in the areas of conceptual and theoretical foundations for nursing (5 semester hours), statistics in nursing (4 semester hours), methods of nursing research (6 semester hours), and a professional issues seminar (2 semester hours).

**Nursing Specialization (8 semester hours)**

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/public health nursing. Students may develop the areas of specialization through their choice of course work and field work experiences. For example, students who select adult health nursing as their area of specialization may choose experiences with patients in a long-term care facility, a mental health 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 (6 semester hours)**

Students may select administration, advanced clinical practice, or education as a role preparation area; two courses, each with a practicum, are offered in each role area through the College of Nursing. Students who elect to develop skills for careers in clinical practice, for example, enroll for 6 semester hours of advanced clinical practice in addition to coursework 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 (9 semester hours)**

Students may choose their supporting course work in areas related to their nursing specialization or role preparation interests.

**Thesis (5 semester hours)**

Every student is expected to write and successfully defend a thesis that involves a systematic inquiry into a nursing problem. Methodologies may include statistical research, case studies, analytical literature review, surveys, or experimental studies that meet the requirements of the Graduate College.

**Plan of Study**

The plan of study described below is designed for full-time students. Those who wish to study on a part-time basis may progress through courses in approximately the same way, but over a longer period of time. Taking one or two courses per semester, for example, it may take from three to five years. Any course work taken ten years or more prior to the final examination must be updated, according to University policy.

**First Year**

**Fall Semester**

96:201 Conceptual and Theoretical Foundations for Nursing I 3 s.h.
96:204 Leadership in Nursing: Theory and Application 4 s.h.
Supporting course 3 s.h.
Total 10 s.h.

**Spring Semester**

96:201 Conceptual and Theoretical Foundations for Nursing II 2 s.h.
96:222 Nursing of Children: Health Promotion 4 s.h.
96:225 Nursing of Adults: Health Promotion 4 s.h.
96:230 Gerontological Nursing I or
96:346 Community/Family Health Nursing I 4 s.h.
96:210 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.
96:222 Nursing of Children: Responses to Illness or
96:227 Nursing of Adults: Responses to Illness 4 s.h.
96:231 Community/Family Health Nursing: Client Responses to Illness 4 s.h.
96:235 Community/Family Health Nursing Client Responses to Illness 4 s.h.
96:246 Curriculum Development in Nursing Education 3 s.h.
96:250 Nursing Administration: Process, Roles, and Strategies 3 s.h.
96:286 Advanced Clinical Practice 3 s.h.
96:319 Thesis 2 s.h.
Total 12 s.h.

**Spring Semester**

96:206 Professional Seminar: Issues in Nursing 2 s.h.
96:247 Nursing Education: Process, Roles, and Strategies 3 s.h.
96:261 Nursing Administration: Process, Roles, and Strategies II 3 s.h.
96:265 Advanced Clinical Practice II 3 s.h.
Supporting course 3 s.h.
96:299 Thesis 3 s.h.
Total 11 s.h.

**Admission**

Students should seek admission to the master's program in nursing through direct application to the UI Graduate College. Minimum requirements for admission to the Graduate College are a completed application; official transcript from other institutions attended; Graduate Record Examination (GRE) Aptitude Test scores; scores from the Test of English as a Foreign Language (TOEFL), when appropriate; and a 2.50 minimum grade-point average for regular admission, or 2.30 for conditional admission. In addition to the general requirements for admission to the Graduate College, the College of Nursing requires that the applicant...
Possess a bachelor's degree with a major in nursing from a program accredited by the National League for Nursing.

Fulfill the legal requirements for the practice of nursing in Iowa.

Have an undergraduate grade-point average of at least 2.70 or a demonstrated ability to do graduate work for regular admission, or have at least a 2.50 undergraduate grade-point average for conditional admission.

Have 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.

All regulations of the Graduate College pertaining to academic standing, probation, and dismissal are applicable to graduate students in nursing. Transfer credits applicable to the master's degree program are limited and must be approved by the dean for the graduate program in nursing and by the student's advisor.

Doctor of Philosophy in Nursing (Ph.D.)

The Doctor of Philosophy in Nursing program prepares scientists to conduct research in nursing and to develop knowledge base relevant to nursing, and contributes to the body of knowledge related to the discipline of nursing. Study requires expertise in clinical nursing and competence in research that relates to the practice of nursing and the delivery of health care.

The curriculum has two focal areas from which students choose: nursing in aging and nursing in acute care 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 number of course work, for a total of 30 semester hours:

96:290 Ethics in the Social Evolution of Modern American Nursing 3 s.h.
96:340-341 Nursing Theory Construction I and II 6 s.h.
96:310 Nursing and Health Information Systems 3 s.h.
96:320 Economics of Health Care and Nursing 3 s.h.
96:330 Nursing's Role in Health Care Policy 3 s.h.

Students who choose the aging focus track these advanced nursing seminars and practicums:

96:410 Biopsychosocial Concepts in Human Aging 3 s.h.
96:430 Geriatric Mental Health Nursing: Assessment and Interventions 3 s.h.
96:440 Sociocultural Disparities of Aging and Nursing 3 s.h.
96:470 Practicum in Care of the Elderly 3 s.h.

Students who choose the nursing administration focus take these advanced nursing seminars and practicums:

96:450 Research Seminar in Nursing Administration I 3 s.h.
96:451 Research Seminar in Nursing Administration II 3 s.h.
96:460 Innovations in Nursing Management 3 s.h.
96:480 Residency in Nursing Service Administration 3 s.h.

Other Ph.D. requirements include the following:

Cognate minor courses 5 s.h.
Cohort research sequence: research methods and statistics 9 s.h.
96:490-491 Research Practicums 6 s.h.
Written comprehensive examination 5 s.h.
Dissertation 12 s.h.
Research seminar Dissertation prospectus Dissertation Oral defense

Admissions Requirements

Students applying to the Ph.D. program must fulfill the following requirements:

Completion of an MN-accredited basic nursing program;
Graduate course equivalent of 45 semester hours, including a master's thesis;
Current R.N. licensure to practice nursing;
GRE Aptitude Test within the past five years;
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 focal 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 in 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 professional improvement student requires a formal application, including submission of three written recommendations and all academic transcripts. GRE Aptitude Test scores must be submitted to fulfill the University requirement before the Admissions Committee makes a decision about fall semester registration. Deadlines are June 15 for admission in the fall semester, December 1 for admission in the spring semester, and May 1 for admission in the summer session.

Since acceptance as a professional improvement student has no direct bearing on acceptance as a master's candidate, professional improvement students are required to follow the application procedure described in the preceding section if they wish to seek admission as master's degree candidates. Only 3 semester hours, or one required nursing core course, taken under professional improvement status may be used to fulfill the M.A. requirements.

Continuing Education

Through its Department of Continuing Nursing Education, the college offers nonaccredited, short-term programs for registered nurses. Programs are scheduled on an ongoing basis and are advertised in community sites throughout Iowa. Continuing education units (CEUs) are awarded for each program on the basis of one unit per 10 clock hours of instruction. Continuing Nursing Education is an Iowa Board of Nursing approved provider 0041 and is accredited by the National Accreditation Board for Continuing Education and the National Association of Pediatric Nurse Associates and Practitioners.

Facilities

The Nursing Building is centrally located on the University main campus, in close proximity to the colleges of Medicine, Pharmacy, and Dentistry and the University of Iowa Hospitals and Clinics, Bowen Science Building, and the Health Sciences Library. Completed in 1971, the building consists of five floors with varied and specialized facilities. Administrative offices are located on the first floor. Faculty offices are located on every floor except the second, which is used entirely for classrooms, laboratories, and the Learning Resource Services. Additional classrooms and laboratories are located throughout the building.
Electives

The current Schedule of Courses lists nursing electives currently being offered. Courses vary from semester to semester.

*1041 Introduction to Gay Studies 3 h.
*1042 Gender and Sexual Identity 3 h.
*1071 Nursing Process and Pharmacology 3 h.
*1110 Human Sexuality 1-3 h.
*1132 Introduction to Gerontology 3 h.
*1161 Love and Death in Clinical Nursing Practice 3 h.
*1162 Introduction to Genetics 2-3 h.
*1210 Anger Management 3 h.
*1211 Substance Abuse 3 h.
*1214 Introduction to Gerontologic Nursing 3 h.
*1215 Introduction to the Elderly 3 h.
*1216 Research Seminar in Nursing Administration 3 h.
*1217 Introduction to Nursing Management 3 h.
*1218 Residential in Nursing Service Administration 3 h.
*1219 Research Practicum 6 h.
*1220 Research Practicum 6 h.
5077 Research Methods 3 h.

For Doctoral Candidates

*1041 Introduction to Gay Studies 3 h.
*1042 Gender and Sexual Identity 3 h.
*1110 Human Sexuality 1-3 h.
*1132 Introduction to Gerontology 3 h.
*1161 Love and Death in Clinical Nursing Practice 3 h.
*1162 Introduction to Genetics 2-3 h.
*1210 Anger Management 3 h.
*1211 Substance Abuse 3 h.
*1214 Introduction to Gerontologic Nursing 3 h.
*1215 Introduction to the Elderly 3 h.
*1216 Research Seminar in Nursing Administration 3 h.
*1217 Introduction to Nursing Management 3 h.
*1218 Residential in Nursing Service Administration 3 h.
*1219 Research Practicum 6 h.
*1220 Research Practicum 6 h.
5077 Research Methods 3 h.

5084 Advanced Clinical Practice I 3 h.
5085 Advanced Clinical Practice II 3 h.
5090 Practicum in Nursing 9 h.
5091 Research Practicum 6 h.
5093 Therapeutic Exercise and Training 3 h.
5098 Thesis 3 h.
5099 Thesis 3 h.

5084 Advanced Clinical Practice I 3 h.
5085 Advanced Clinical Practice II 3 h.
5090 Practicum in Nursing 9 h.
5091 Research Practicum 6 h.
5093 Therapeutic Exercise and Training 3 h.
5098 Thesis 3 h.
5099 Thesis 3 h.

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5098 Thesis 3 h.
5099 Thesis 3 h.

5084 Advanced Clinical Practice I 3 h.
5085 Advanced Clinical Practice II 3 h.
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5091 Research Practicum 6 h.
5093 Therapeutic Exercise and Training 3 h.
5098 Thesis 3 h.
5099 Thesis 3 h.
Studying tects of writing by isoperibol solution colorometry.
The pharmaceutical sciences are concerned with preparing and dispensing medicinal products and monitoring their activity. Pharmacists, through education and training, can identify, analyze, select, combine, and standardize these medicines and serve the community as a prime source of information on health topics.

Pharmacists are basically specialists in the science of drugs. They must understand drug composition, chemical and physical properties, manufacturing uses, and activity in normal individuals as well as in the ill patients, and must be familiar with tests for strength, purity, and efficacy of drug products. Pharmacists comprehend and dispense prescriptions written by health practitioners, who rely upon pharmacists for information about the availability, activity, toxicology, 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 135,000 men and women practice in community pharmacies.

A significant number of pharmacists are employed in hospital pharmacy practice. In this setting, they work closely with other members of the health care professions. Some work in government agencies such as the U.S. Public Health Service, Veterans Administration, Food and Drug Administration, and 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 hospitals, drug companies, manufacturing, research and development, control, marketing, and advertising. Many are employed in pharmaceutical sales as medical representatives. Pharmacy training is especially valuable to these men and women who, with additional training, have opportunities for acquiring physicians, dentists, veterinarians, and other pharmacists with drug products. The educational background of pharmacists provides 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**

Students in the College of Pharmacy are in a Bachelor of Science program. They receive professional training and education in a number of areas, including pharmacy technology, biopharmaceutics, medicinal chemistry and pharmacy administration, pharmaceutical microbiology, and clinical and hospital pharmacy. Aspects of biotechnology are a common part of pharmacy education.

The colleges of Liberal Arts, Business Administration, Dentistry, and Medicine contribute to the education of pharmacy students by providing instruction in the physical sciences, basic medical sciences, business, the humanities, and social sciences.

The Bachelor of Science program in pharmacy consists of one year of prepharmacy study, taken in the College of Liberal Arts at The University of Iowa or at any accredited community or liberal arts college, and four years of pharmacy studies.

It is possible to transfer into the College of Pharmacy after two years of college-level work at an approved institution. Students entering the college after two years of preprofessional study can complete the preprofessional program in three years if the preprofessional study includes, in addition to the basic preprofessional requirements, at least 8 semester hours of organic chemistry, 5-6 semester hours of biology or zoology, 3-4 semester hours of quantitative analysis, and at least 15 semester hours of general education electives.

The University of Iowa College of Pharmacy is accredited by the American Council on Pharmaceutical Education. Graduates of the college are qualified to take the licensure examination given by the Iowa Board of Pharmacy Examiners.

The education required for the baccalaureate degree in pharmacy includes satisfactory completion of the required courses, 24 semester hours of general education electives, and a pharmacy grade-point average of at least 2.00.

**Honor Program**

The honors program was established in 1964 to give students an opportunity to interest in and to participate in a small group with leading professors and scientists from all areas of the University. In their junior year, students in the upper 20 percent of their class may enroll in the Honors Seminar. A series of weekly discussions on topics from the humanities, the sciences, law, and the social sciences.

Honors students may elect to prepare a major paper or carry out a research project of limited scope during their junior 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**

Recent changes in the admission requirements and in the curriculum of the baccalaureate degree program affect students admitted to the college in the fall of 1980 and after. Students admitted prior to the fall 1980 session must satisfy requirements at the time of their admission. Students admitted prior to the fall 1980 session must satisfy requirements at the time of their admission. Students admitted prior to the fall 1980 session must satisfy requirements at the time of their admission.

**Preprofessional Course Work**

**Rhetoric:** 8 semester hours, or 6 semester hours of English composition and 2 semester hours of rhetoric.

**Mathematics:** 3 or 4 semester hours of a satisfactory differential and integral calculus course.

**Physics:** Physics may be satisfied with one year of high school physics; students are encouraged to complete 24 semester hours of physics.
quantitative analysis, and have satisfied general education electives. Students who plan to remain in a community college for two years before transferring to The University of Iowa should consult the dean of the College of Pharmacy concerning course requirements.

The Professional Curriculum

First Year

First Semester
46.13 Pharmacy Math 3 s.h.
4.121 Organic Chemistry I 3 s.h.
2733 Principles of Animal Biology 5 s.h.
4.101 Elementary Quantitative Analysis 4 s.h.
Total 15 s.h.

Second Semester
46.14 Pharmacy Orientation 2 s.h.
4.122 Organic Chemistry II 3 s.h.
4.141 Organic Chemistry Laboratory 3 s.h.
*46.102 Principles of Human Anatomy 3 s.h.
**General education electives 4-6 s.h.
Total 15-17 s.h.

*Also citrus first semester for students on a 2:3 program only.
**In addition to the required courses in the curriculum, students must complete 24 semester hours of general education courses. These elected courses should be in the behavioral, social, and humanistic areas of knowledge.

Second Year

First Semester
46.23 Pharmacoeconomics 4 s.h.
59.162 Biocomputations for Pharmacy Students 4 s.h.
61.112 Health Sciences 6 s.h.
*69.102 Principles of Human Anatomy 3 s.h.
**General education electives 0-6 s.h.
Total 15-18 s.h.

*May be taken in second semester of first year.

Second Semester
46.24 Pharmacoeconomics II 4 s.h.
46.22 Pharmaceutical Economics Computer/Health Care Systems 4 s.h.
46.58 Medicinal and Natural Products Chemistry I 5 s.h.
77.150 Intermediate Physiology 4 s.h.
Total 17 s.h.

Third Year

First Semester
46.121 Medicinal and Natural Products Chemistry II 5 s.h.
69.203 Introduction to Human Pathology 4 s.h.
71.101 Pharmacology for Health Sciences: Pharmacy 5 s.h.
46.35 Pharmaceutical Socioeconomics Practice Management 3 s.h.
Total 17 s.h.

Second Semester
46.132 Medicinal and Natural Products Chemistry III 5 s.h.
71.03 Pharmacology and Toxicology 3 s.h.
4.38 Pharmacokinetics III 3 s.h.
General education electives 0-3 s.h.
Total 14-17 s.h.

Fourth Year

First Semester
46.41 Pharmacology 2 s.h.
46.43 Pharmacokinetics IV 4 s.h.
4.61 Drug Information 4 s.h.
46.1111 Therapeutics II 4 s.h.
General education electives 0-6 s.h.
Total 13-17 s.h.

Second Semester
46.59 Hospital Pharmacy Internship 6 s.h.
46.69 Community Pharmacy Internship 6 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
46.49 Community Pharmacy 3 s.h.
46.56 Non-prescription Drugs 3 s.h.
46.101 Pharmacy Practice 3 s.h.
46.102 Pharmacy Honors Seminar 1 s.h.
46.103 Physical Pharmacy 3 s.h.
46.104 Pharmacokinetics and Biopharmaceutics 3 s.h.
46.195 Industrial Pharmacy Survey 3 s.h.
46.109 Computer Applications in Pharmacy 2 s.h.
46.114 Advanced Clinical Pharmacy 3 s.h.
46.135 Perspectives in MOPH Research 3 s.h.
46.147 Introduction to Research Methods 3 s.h.
46.154 Communications Skills for Pharmacists 3 s.h.

Professional Clerkships
46.40 Medicine Clerkship 4 s.h.
46.81 Family Practice Clerkship 4 s.h.
46.82 Pediatrics Clerkship 4 s.h.
46.60 Pharmacokinetics Clerkship 4 s.h.
46.84 Psychiatry Clerkship 4 s.h.
46.95 Neurology Clerkship 4 s.h.
46.46 Surgery Clerkship 4 s.h.
96.107 Clinical Nuclear Pharmacy Clerkship 4 s.h.
96.58 Dentistry College Clerkship 4 s.h.
46.95 Elective Clerkship 4 s.h.
46.95 General Clerkship 4 s.h.

Transfer with Advanced Standing
Students transferring from other colleges of pharmacy accredited by the American Council on Pharmaceutical Education may receive credit toward the Bachelor of Science degree in pharmacy for satisfactory completion of course work in this curriculum. However, at least one academic (30 semester hours) of residence at The University of Iowa College of Pharmacy is required for the degree.

Students transferring from nonpharmacy colleges may receive credit for work required in the Bachelor of Science curriculum in pharmacy, but will not expect to be enrolled for at least three years in the College of Pharmacy.

In accordance with University policy, students who have earned more than one-half the total semester hours required for the B.S. degree in pharmacy cannot receive further credit for courses taken at two-year institutions. Students who want to complete required or elective course credit at other institutions must have permission of the assistant dean for undergraduate affairs before enrolling in such courses.

A minimum grade of C is required for work applied toward the pharmacy degree.

Graduation
Graduation from the College of Pharmacy with the B.S. degree in Pharmacy requires completion of all required courses plus 24 semester hours of general education electives. In order to graduate, students must earn a pharmacy and a total cumulative grade-point average of at least 2.00. A pharmacy grade-point average is computed from the grades earned in all of the specifically required courses that are completed while enrolled in the College of Pharmacy.

Graduate Programs
The college has graduate programs in each of its four academic divisions. Master of Science and Doctor of Philosophy programs are available in pharmacology, medicinal and natural products chemistry, and pharmaceutical socioeconomics. A Master of Science degree is also available in clinical-pharmacological hospital pharmacy.

Advanced study in the pharmaceutical sciences prepares students for research, teaching, and administrative positions in the pharmaceutical industry, industries, and universities, in government agencies, and to a number of health-related institutions and organizations.

The application deadlines, grade-point average for admission, Graduate Record Examination (GRE) Aptitude Test scores, and necessary letters of recommendation are the same as those for the Graduate College. Academic requirements for maintaining graduate registration are
determined by individual divisions of the College of Pharmacy.

Doctor of Pharmacy

The Doctor of Pharmacy (Pharm.D.) program combines didactic course work and clinical clerkship experiences. 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 pharmacy students who are specifically prepared to undertake an expanded role in monitoring, evaluating, and optimizing drug therapy is hospitalized and ambulatory patients. This program is available to a limited number of highly qualified pharmacy graduates.

Facilities

The Pharmacy Building is located in the health care center complex on the University's main campus, in close proximity to the colleges of Medicine, Nursing, and Dentistry. The University of Iowa Hospitals and Clinics, the Bowen Science Building, and the Health Sciences Library are also nearby.

The building is a state-of-the-art structure designed to provide modern facilities for a comprehensive program of pharmacy education. In addition to classrooms and an auditorium, there are well-equipped separate laboratories for instruction at the undergraduate and graduate levels.

The building also houses the Learning Resource Center (LRC), with current texts and periodicals to undergraduate and graduate pharmacy students. The LRC has several computer terminals available to students and provides on-line computer services for pharmacy students and faculty.

The Pharmaceutical Services Division of the college serves the University as well as a service division. Here, undergraduate and graduate students learn methods of large-scale pharmaceutical product development and production. The division's state-of-the-art equipment and its licensing by the U.S. Food and Drug Administration make it an outstanding facility.

The Iowa Drug Information Service (IDIS) operates a central repository and distribution center of specialized information related to drugs and drug therapy. IDIS not only reaches subscribers throughout the world, but plays an important educational role for undergraduate and graduate pharmacy students as well.

In the clinical pharmacy program, students work with other health professionals and have the opportunity to monitor drug therapy in hospitalized and nonhospitalized patients under the supervision of clinical instructors in pharmacy, medicine, and dentistry. The various clerkship experiences in which students are assigned include many areas of The University of Iowa Hospitals and Clinics and Veterans Administration Medical Center: the family practice centers at Iowa City, Cedar Rapids, and Davenport; Iowa City Mercy Hospital; Mercy and St. Luke's Hospitals in Cedar Rapids; Conrath Medical Center in Waterloo; the Burlington Medical Center in Burlington, St. Joseph's Hospital in Mason City, the Muscat Health Center and St. Luke's Hospital in Sioux City; the State Mental Health Institute and Henry County Hospital at Mt. Pleasant; Mary Greeley Hospital in Ames; St. Luke's and Mercy hospitals in Des Moines; Mercy Health Center in Des Moines; Overwa Desciples Regional Health Center in Ottumwa; the Indian Health Services-Hospital in New Mexico Huitzalco; St. Mary's Hospital in Huxley; Vincennes; St. Vincent's Memorial Hospital in Taylorville; Illinois; and numerous selected community pharmacies.

Courses

Undergraduate Pharmacies

8613 Pharmacy 1st 3.0 hrs.
- Administrative pharmacy techniques, design, and operation of hospital pharmacy techniques. Includes pharmacology in applications to pharmacy problems.

8613 Pharmacy 2nd 3.0 hrs.
- Lectures and discussion of common problems. Significant error analysis in pharmacy, present-day problems of professional reputation, professional and private organizations in pharmacy.

8623 Pharmacology 1 3.0 hrs.
- Lectures and laboratories on current topics in pharmacology. Introduction to pharmaceuticals, most commonly, endocrine, metabolic, and respiratory.

8623 Pharmacology 2 3.0 hrs.
- Lectures and laboratories on physical and chemical laws in the formulation and preparation of liquid and solid dosage forms. Introduction to the United States Pharmacopeia and the United States National Formulary. Correspondence Study.

8623 Pharmacology IV 4.0 hrs.
- Lectures and laboratories on the identification of drugs, absorption, distribution, and excretion; basic principles of the drug action of drugs. Correspondence Study.

8623 Pharmacology V 4.0 hrs.
- Lectures and laboratories on the formulation of dosage forms, including orally, rectally, percutaneously, injection, and inhalation; laboratory techniques and machine techniques of compounding and dispensing; poisons, common accidents, and emergency procedures. Correspondence Study.

Graduate Pharmacies

46161 Pharmacy Projects 1.0 hrs.
- Thesis and the research problems in pharmaceuticals, significant. Prerequisite: PF or above standing.

46173 Thesis Pharmacy 3.0 hrs.
- Utilizes and applies concepts of research to problems related to pharmaceuticals.

46104 Pharmacokinetics and Biopharmaceutics 3.0 hrs.
- Kinetics of drug action, distribution, and excretion; factors influencing the pharmacokinetics of systemic delivery. Prerequisites: two semesters of calculus, one semester of physics, and consent of instructor.

46105 Industrial Pharmacy Seminar 3.0 hrs.
- Research and study of problems in industrial pharmacy, significant. Prerequisite: permission of instructor.

46134 Surgery - Pharmacy 3.0 hrs.
- Study of the behavior of tissue in phase boundaries. Prerequisites: 46104 or consent of instructor.

46106 Pharmacy Selected Topics 1.0 hrs.
- Recent advances and contemporary research in pharmacy. Prerequisites: consent of instructor.

46136 Quality Assurance Methods in Pharmacy 3.0 hrs.
- Quality assurance methods in hospital pharmacy and other settings. Offered to seniors of odd years. Prerequisite: 46104.

46138 Pharmaceutical Standards 3.0 hrs.
- Methodology of determination of pharmacological products. Prerequisite: 46104. Offered to seniors of even years. Prerequisite: 46104.

46232 Product Development 3.0 hrs.
- Applications of pharmacological principles in the management of drug formulation. Prerequisite: 46104.

46235 Product Development 3.0 hrs.
- Development and evaluation of new dosage forms. Prerequisite: 46232.

46237 Advanced Pharmacokinetics and Biopharmaceutics 3.0 hrs.
- Advanced treatment of selected topics in pharmacokinetics and biopharmaceutics, significant. Prerequisite: 46231.

46238 Pharmacogenetics Seminar 3.0 hrs.
- Reviews and analyzes the data and research being conducted in pharmaceutical sciences. May be repeatable.

66135 Pharmacy Research 6.0 hrs.
- Laboratory methods of research, composition, purification, and stability. Prerequisite: 4131.

Undergraduate Medicinal and Natural Products Chemistry

48101 Medicinal and Natural Products Chemistry I 3.0 hrs.
- Introduction to the general principles of medicinal and natural products chemistry, significant. Prerequisite: PF or above standing.

48102 Medicinal and Natural Products Chemistry II 3.0 hrs.
- Continuation of 48101 which is prerequisite.
Continuing Education

Dean: Emerit J. Vogting

The Division of Continuing Education was established by special legislation of the General Assembly of Iowa to render a larger service to the Commonwealths and to the people of Iowa by carrying out to every part of the State the knowledge, the thought, the ideals, and the point of several departments and colleges of the University and by bringing the University generally into direct contact with the citizens.

The division's organization and services include the following.

Center for Credit Programs
Written: Verne V. Freeman, Jr.

The Center for Credit Programs is responsible for the delivery of University of Iowa credit courses to part-time students in Iowa City and throughout the state. In cooperation with the University's colleges and academic departments, the Center for Credit Programs arranges course delivery to graduate and undergraduate students through several formats and delivery systems.

Correspondence Courses

More than 160 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 departments within the University. Students may enroll at any time and have nine months in which to complete work. A catalog of course listings, procedures, and enrollment forms can be obtained from the Guided Correspondence Study, 116 International Union.

Off-Campus Classes

The Center for Credit Programs offers off-campus classes from colleges throughout the University. Classes are scheduled where they may best serve off-campus students, and at the request of public school districts or other professional, industrial, or other qualified groups indicate a specific need for instruction. The center also offers courses through audioconferencing and a variety of telecourses in cooperation with Iowa Public Television. Enrollment in each course must be sufficient to meet the cost of offering the course. Information is available from the Center for Credit Programs, 116 International Center.

Saturday and Evening Classes

The Center for Credit Programs offers undergraduate and graduate credit courses at times convenient for nontraditional students. All classes meet on the University of Iowa campus. Classes are available from colleges throughout the University. Enrollment in each course must be sufficient to meet the cost of offering the course. The bulletin of the Saturday and Evening Class Program is available from the Center for Credit Programs, 116 International Center.

Bachelor of Liberal Studies Degree

The Bachelor of Liberal Studies degree is offered by each of the three Iowa Regent 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 attending college as full-time, on-campus students. The program has no residence requirement.

Credit applicable toward the degree may be earned through Saturday and evening courses, correspondence and independent study courses, off-campus courses at sites throughout Iowa, televised courses, and on-campus courses during the day.

At The University of Iowa, the B.L.S. is awarded by the College of Liberal Arts and administered by the Division of Continuing Education. For a detailed program description, see "Liberal Studies" in the "College of Liberal Arts" section of the Catalog.

Center for Conferences and Institutes

Acting director: James L. Lopez

The Center for Conferences and Institutes serves as the principal agency of the University for developing, coordinating, and conducting noncredit continuing education programs for nontraditional adult students; administering the University's Continuing Education Lib. (CEIL) program; and managing the center's program. The center's primary goal is to enhance the usefulness of the University as a center of learning and to provide educational opportunities for people who are not full-time students but who seek new knowledge related to their jobs, professions, or special interests.

Each year more than 30,000 adults participate in the center's varied programs, which represent a cooperative endeavor between the center and the various colleges, departments, and service units within the University. The many different programs, courses, and conferences are administered by the center and are available for credit or noncredit, and are distributed to the public through the University's various centers for continuing education.

The center's director serves as the primary administrator of the university's continuing education programs and as the principal advisor to the University's continuing education policies.

Radio Broadcasting Services

Acting director: J.R. Moore

WXUI and KISU-FM serve the needs and interests of people in the State of Iowa with a full-time, 18-hour daily schedule that meets the broadcast requirements of the Iowa Legislature and the University's Board of Regents. The broadcast schedule consists of music, news, and information programming on more than 300 commercial radio stations in the State of Iowa. The station and its facilities are located in 319U Engineering Building, and a copy of the WSUI-FM Program Guide may be obtained by writing to that address.

Institute of Public Affairs

Acting director: Edward J. Strick

The mission of the institute is to help strengthen state, city, and county governments in Iowa by serving as the primary research and continuing education center for public affairs.
Audiovisual Center
Director: William Ogilvie
The Audiovisual Center helps faculty and students improve the teaching-learning process through design and production of effective audiovisual materials.

Audiovisual Center services include consultation, planning, design, production, and marketing of instructional materials. The center’s production units are the University’s major manufacturers of a broad range of graphic, photographic, and audio materials. The units and their products are:

- Graphics Unit: produces charts, maps, titles, keynotes, posters, illustrations, models, exhibits, and overhead transparencies.
- Photographic Service: black-and-white and color photography negatives, two-inch slides, flipcharts, portraits, macrophotographs, many types of specialized photography, and still photographic laboratory services. Both black-and-white and color.
- Audio Unit: original audio tape recording (studio and location), tape duplication (open reel and cassette), sound editing, equalizing, mixing, and transfer.
- Multi-image Unit: design and production of single and multiple screen slide programs, one to twelve projectors, manual and program-controlled, open-reel and cassette synchronized track. The Audiovisual Center makes and distributes audiovisual production-originated at the University. Return royalties are paid to sponsoring University departments and authors.

The center charges most University departments only for materials for requests funded by grants, charges are made for both materials and labor.

Media Services
The University Media Library provides a major collection of films, instructional films and videotapes, available on campus without charge for instruction and curricular-related activities, and for off-campus rental. Smaller collections of audio tapes, filmstrips, and slides, plus facilities for study or faculty utilization, are also 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 instructional use: film, slide, filmstrip, opaque, video, and overhead projections; portable projector systems; audio tape recorders/players; video cassette recorders/players; portable public address systems, and display devices (e.g., black, panels, boards). Repair service is available for audiovisual equipment.
Administrative Officers

State Board of Regents
The State Board of Regents governs the University of Iowa, Iowa State University of Science and Technology, the University of Northern Iowa, the Iowa State University Extension and Right-to-Live School, and the Iowa School for the Deaf. The Board consists of nine members, as follows:

President: Marvin A. Fomermont, West Des Moines
Charles Dutton, Des Moines
John R. Flitzl, West Des Moines
John M. Groop, Luther ville
Perry G. Herring, Cedar Rapids
James R. Tyler, Atlantic
Jackson Van Loven, Monroe
Bass Van Cott, Ososho
Mary C. Williams, Davenport
Executive secretary: A. Wayne Ridley

Central Administration
President: Harvey Savings III
Vice president for academic affairs and dean of faculties: Bernard D. Remington
Vice president for educational development and research and dean of the Graduate College: Duane C. Spreetersbach
Vice president for finance and university services: Susan M. Phillips
Vice president for student services and dean of academic affairs: Philip G. Hubbard

Academic Affairs
Vice president and dean of Scuities: Richard D. Remington
College of Business Administration
Dean: Gene L. Dally
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Ira B. McClendon Institute of Accounting Research acting director: Daniel W. Collins
Institute for Economic Research director: Donald W. Atchison
Institute for Insurance Research acting director: William P. Atchison
Institute for Entrepreneurial Management acting director: Henry Madden
College of Dentistry
Dean: James H. McLean
Iowa Institute for Dental Research director: Christopher A. Snyder
College of Education
Interim dean: Lowell D. Schuer
Iowa Institute for School Executive co-directors: Lowell D. Schuer, David Cronin
College of Engineering
Dean: Robert G. Hering
Institute of Hydraulics Research director: John F. Kennedy
Graduate College
Dean: Duane C. Spreetersbach
Dean of advanced studies: Rudolph W. Schult
College of Law
Dean: N. William Hines
College of Liberal Arts
Dean: Gerard Jonsonburg
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School of Journalism and Mass Communication director: Donald D. Smith
School of Library and Information Science director: Carl P. Organ
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School of Religion director: John P. Joyce
School of Social Work director: Joyce Wood Water
College of Medicine
Dean: John W. Edelson
College of Nursing
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Center for Credit Programs director: Von V. Pfeiffer, Jr.
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Roche Student WSPU acting director: John Micik
Iowa Center for the Arts
Chair: Philip G. Holbrook
Libraries
University Librarian: Sheila Matts
Museum of Art
Director: Mary Kujawski
Office of International Education and Services
Director: Stephen M. Arns
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Director: Alfred Heus
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Acting director: Robert L. Long
Office of Information Technology
Director: Fred H. Harris
Weeg Computing Center
Director: W. Lee Shope
Occupational Health Services
Director: Paul R. Pannemakers, Jr.
Health Protection
Director: William E. Twyler
State Archaeologist
William Gowan
Technology Innovation Center
Director: V. E. Price Wharton
University House
Director: Jay Somier
University of Iowa Press
Director: Paul Zimmer
University Veterinarian
Paul S. Cooper
Student Services
Vice president: Philip G. Hulhorn
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Admissions
Director: Michael Baron
Registrar
Jerold N. Dullam
Residence Services
Director: George L. Droll
Hanover Auditorium
Director: Wallace Cheppell

Iowa Memorial Union
Director: Jean Kendal

University Counseling Service
Director: Gerald L. Hone

Special Support Services
Director: Paul Shang

Student Financial Aid
Director: Mark S. Warner

University Evaluation and Examination Service
Director: T. Anne Cleary

Campus Programs and Student Activities
Coordinator: Kevin Taylor

Office of Services for Persons with Disabilities
Coordinator: Donna Chandler

Women's Resource and Action Center
Coordinator: Susan Buckley

Finance and University Services
Vice president: Susan M. Phillips

Business Office
Business manager: Michael J. Finnegan
Treasurer: Douglas K. True
Controller and secretary: Douglas M. Young

University Personnel Services
Director: Marvin Lynch

Planning and Administrative Services
Director: Richard E. Gibson

Intercollegiate Athletics for Men
Director: Charles W. Elliott

Intercollegiate Athletics for Women
Director: Christine Grant

Recreational Services
Director: Harry B. Deardorff

University Health Services
Assistant to the president for statewide health services: John W. Comfort

University Hospitals and Clinics
Director: John W. Comfort

Psychiatric Hospital
Director: George Winskur

State Hygienic Laboratory
Director: William J. Hauser

University Hospital School
Director: Alfred Healy

Student Health Service
Director: Mary L. Krouse

Regional Child Health Specialty Clinics
Director: Richard F. Nelson

General University
Affirmative Action Affairs
Director: June D. Cogley

Alumni Association
Executive director: D. Richard Emerson

University of Iowa Foundation
President: Darrell D. Wyrick

University Relations
Director and assistant to the president: Carla M. Cooper

Special order cake decorating at the residence halls
The following is extracted from the Board of Regents section of the Iowa Administrative Code as of May 1, 1988.

**Admission Rules**

**Community to the 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 $10 application fee, and have their secondary school provide a transcript of their academic record, including credits and grades, rank in class, and certification of graduation. Applicants must also submit scores from the American College Test (ACT) or the Scholastic Aptitude Test (SAT), or the equivalent, as determined by each university. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English. Applicants may be required to submit additional information or data to support their applications.

1.1(1) Graduates of approved Iowa high schools who have the subject matter background as recommended by each university and who rank in the upper one-half of their graduating class will be admitted. Applicants who are not in the upper one-half of their graduating class may, after a review of their academic and test records, and at the discretion of the admissions officers:

- a. Be admitted unconditionally,
- b. Be admitted conditionally,
- c. Be required to enroll for a tryout period during a preceding summer session, or
- d. Be denied admission.

1.1(2) Graduates of accredited high schools in other states may be held to higher academic standards, but must meet at least the same requirements as graduates of Iowa high schools. The offer of conditional admission or summer tryout enrollment may not necessarily be offered to these students.

1.1(3) Applicants who are graduates of nonapproved high schools will be considered for admission in a manner similar to applicants from approved high schools, but additional emphasis will be given to scores obtained on standardized examinations.

1.1(4) Applicants who are not high school graduates, but whose classes have graduated, may be considered for admission. They will be required to submit all academic data to the extent that it exists and achieve scores on standardized examinations which will demonstrate that they are adequately prepared for academic study.

Students with superior academic records may be admitted, on an individual basis, for part-time university study while enrolled in high school or during the summers prior to high school graduation.

In rare situations, exceptional students may be admitted as full-time students to a regent university before completing high school. Early admission to a regent university is provided to serve persons whose academic 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 of the high school. Applicants with records and standardized test results may also be required. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English.

1.2(1) Transfer applicants with a minimum of 24 semester hours of credit from regionally accredited colleges or universities, who have achieved for all college work previously attempted the grade point required by each university for specific programs, will be admitted. Higher academic standards may be required of students who are not residents of Iowa. 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 tryout period during a preceding summer session, or
- d. Be denied admission.

1.2(2) 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(3) Transfer applicants under disciplinary suspension will not be considered for admission until information concerning the reason for the suspension has been received from the college assigning the suspension. Applicants granted admission under these circumstances will be admitted on probation.

1.2(4) 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 enforce 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 recognized and used by the universities in determining transfer credit. The acceptance and use of transfer credit is subject to limitations in accordance with the educational policies operating at each university.

1.3(1) Students from regionally accredited colleges and universities Credit earned at regionally accredited colleges and universities is acceptable for transfer except that credit in courses determined by the receiving university to be of a remedial, vocational, or technical nature, or credit in courses or programs in which the institution granting the credit is not directly involved, may not be accepted, or may be accepted to a limited extent.

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 assigned to the student at all institutions attended exceeds one-half the number of credit hours required for that degree.
3.2] Students from colleges and universities which have candidate status Credit earned at schools which have become candidates for accreditation by a regional association is acceptable for transfer in a manner similar to that from regionally accredited colleges and universities if credit is applicable to the bachelor's degree at the receiving university.

Credit earned at the junior and senior classification from an accredited two-year college which has received approval by a regional accrediting association for four-year college may be accepted by a regent university.

3.3] Students from colleges and universities not regionally accredited When students are admitted from colleges and universities not regionally accredited, they may validate courses or all of their transfer credits by satisfactory academic study in residence, or by examination. Each university will specify the number of semester credit hours of the validation process at the time of admission.

b. In determining the acceptability of transfer credit from private colleges in Iowa which do not have regional accreditation, the regent committee on educational relations, upon request from the institutions, evaluates the nature and standards of the academic program, faculty, student records, library, and laboratories.

d. In determining the acceptability of transfer credit from institutions in Iowa which are not regionally accredited, regional accreditation or similar standards of institution are required for the university to receive credit from a particular institution.

3.4] Students from foreign colleges and universities Transfer credit from foreign educational institutions may be granted after a determination of the type of institution involved and after an evaluation of the content, level, and substance of the course by correspondence. Credit may be granted in specific courses, but is frequently granted in general areas. Extensive use is made of professional journals and references which describe the educational systems and programs of individual countries.

Residence

681—1.4(262) Classification of residents and nonresidents for tuition, fee purposes

1.4(1) General
a. A person enrolling at one of the three state universities shall be classified as a resident or nonresident for admission, tuition, and fee purposes by the registrar or someone designated by the registrar. The decision shall be based upon information submitted by the student and other relevant information.

b. A determination of resident or nonresident classification, the issue is essentially one of why the person is in the state of Iowa. If the person is in the state primarily for educational purposes, that person will be considered a nonresident. For example, it may be possible that an individual could qualify as a resident of Iowa for such purposes as voting, or holding an Iowa driver's license, and not meet the residency requirements established by the board of regents for admission, tuition, and fee purposes.

c. The registrar, or designated person, is authorized to require written documents, affidavits, verifications, or other evidence deemed necessary to determine why a student is in Iowa. This burden of establishing that a student is in Iowa for educational purposes is upon the student.

d. A student may be required to file any or all of the following:

(i) A statement from the student describing employment and expected sources of support;

(ii) A statement from the student's employer;

(iii) A statement from the student's parents verifying economic facts. In this fact the student was not listed as a dependent on tax returns for the past year and will not be so listed in future years;

(iv) Supporting statements from persons who might be familiar with the family situation;

(v) Iowa state income tax return;

(vi) Change of classification from nonresident to resident will be made effective:

(a) The student is a member of the armed forces on active duty;

(b) The student is an Iowa resident child of a nonresident parent who has been classified as a resident for the past five years;

(c) The student is a member of the armed forces on active duty and has been classified as a nonresident for the past five years;

(d) The student is a nonresident who has been classified as a nonresident for the past five years.

e. A student who gives incorrect or misleading information to evade payment of nonresident fees shall be subject to disciplinary action and must also pay the nonresident fees for each term previously attended.

f. Review Committee. These regulations shall be administered by the registrar or someone designated by the registrar. The decision of the registrar or designated person may be appealed to a university review committee. The ruling of the review committee may be appealed to the state board of regents.

1.4(2) Guidelines
The following guidelines are used in determining the resident classification of a student for admission, tuition, and fee purposes:

a. A financially dependent student whose parents move from Iowa after the student is enrolled remains a resident provided the student maintains continuous enrollment. A financially dependent student whose parents move from Iowa during the senior year of high school and the student is enrolled provides the student has not established domicile in another state.

b. It is decided that a person is in the state of Iowa, the person's domicile will be considered. A person who comes to Iowa from another state and remains in any institution of postsecondary education for a full program or substantially a full program shall be presumed to have established domicile primarily for educational reasons rather than to establish a domicile in Iowa.

c. A student who is classified as a nonresident of Iowa may continue to be considered a nonresident provided absence from the state was for a period of less than 12 months and provided domicile is reestablished. If the absence from the state is for a period exceeding 12 months, a student may be considered a resident if evidence can be presented showing that the student has long-term ties to Iowa and reestablished a domicile in Iowa.

d. A person who establishes domicile in Iowa may be considered a nonresident provided absence from the state was for a period of less than 12 months and provided domicile is reestablished. If the absence from the state is for a period exceeding 12 months, a student may be considered a resident if evidence can be presented showing that the student has long-term ties to Iowa and reestablished domicile in Iowa.

e. A student who is classified as a nonresident of Iowa may maintain domicile in Iowa, who has been classified as a resident for admission, tuition, and fee purposes, may continue to be classified as a resident so long as domicile is maintained, even though circumstances may require extended absence of the person from the state. It is required that a person who claims Iowa domicile while living in another state or country will provide evidence that Iowa is their domicile as evidence that the person is a resident.

f. Has not acquired a domicile in another state.

1.4(3) Maintained a continuous voting record in Iowa, and

1.4(3) Has filed regular Iowa resident income tax returns during absence from the state.

d. A student who is classified as a nonresident in Iowa may be eligible for resident classification at the next registration following 12 consecutive months in the state provided the student is not a member of a household in which the student

(a) has not paid the nonresident fee for three consecutive years

(b) has been a nonresident for five consecutive years

(c) has been a nonresident for five consecutive years.

2. A student who is considered a student for residence purposes, the dependent of a person who is a student, is determined by the registrar to be a resident for purposes of this rule.

3. A person who is in the state as the result of military or civil orders may be granted resident status.

1.4(4) A person who is in the state as the result of military or civil orders may be granted resident status.
in all cases until the beginning of the next term in which the student is enrolled.
Legislation, effective July 1, 1977, requires that military personnel who claim residency in Iowa (home of record) will be ineligible to the Iowa resident income tax return.

g. A person who has been certified as a refugee or granted asylum by the appropriate agency of the United States who enrolls as a student at a university governed by the Iowa state board of regents may be accorded immediate residence status for the purposes of tuition, and fee purposes where the person:
(1) Comes directly to the state of Iowa from a refugee facility or part of a debarred
debary, 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 meeting these standards will be presumed to be a nonresident for admission, tuition, and fee purposes and thus subject to the usual method of proof of establishment of Iowa residency.

b. An alien who has immigrated status establishes Iowa residency in the same manner as a United States citizen.

1.4(c) Facts
a. The following circumstances, although not necessarily conclusive, have producible values to support a claim for resident classification:
(1) Resides in Iowa for 12 consecutive months, and is primarily engaged in activities other than those of a full-time student, immediately prior to the beginning of the term for which resident classification is sought.
(2) Reliant upon Iowa resources for financial support.
(3) Belongs to a class of persons legally responsible for the student.
(4) Transfer of a student in the same state and maintenance of significant connections therein while absent.
(5) Acceptance to a degree in a permanent employment in Iowa.
(6) Other factors indicating the student's domicile will be considered by the universities in classifying 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 full-time.
(3) The lease of living quarters.
(4) Admission to a licensed practicing profession in Iowa.
(5) Automobile registration.
(6) Public records, i.e., example, birth and marriage records, Iowa driver's license.
(7) Continuous presence in Iowa during periods when not enrolled in school.
(8) Ownership of property in Iowa, or the payment of Iowa taxes.

681—1.5(262) Registration and transcripts—general
A person may not be permitted to register for a course or courses at a state board of regents institution until any delinquent accounts owed by the person to an institution or any affiliated organization for which an institution acts as fiscal agent have been paid.
A state board of regents institution may withhold official transcripts of the academic record of a person until any delinquent accounts owed by the person to an institution or any affiliated organization for which an institution acts as fiscal agent have been paid.

Supplemental Specific Rules For The University of Iowa

681—2.1(262) Formal application for admission
All applicants for admission to any college of the University of Iowa must submit a formal application for admission with the required official transcripts and other supporting materials as required to the director of admissions. Students may not be registered until they have been issued an admission statement by the director of admissions.

681—2.3(262) College of business administration
2.1(3) Application for admission
Applications for admission to the college of business administration should be submitted to the director of admissions.
Applicants are urged to apply as early as possible, since this will give the admissions committee more time to devote to each applicant. Closing dates for receiving applications will be announced well in advance of the opening date of any session.
2.3(2) Requirements for admission
For admission to the college of business administration an applicant must have—
(a) Completed specific course work as prescribed by the faculty of the college.
(b) Attained satisfactory scores on the university's required admission examinations.
(c) Maintained a satisfactory grade-point average on all courses undertaken, and on all courses undertaken at the University of Iowa, and on all courses undertaken in business and economics.
Applicants from schools 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, each student may be granted conditional or probationary admission.

681—2.4(262) College of dentistry
2.1(3) 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 applicant. 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 baccalaureate degree or who have completed the requirements for the degree in a combined program.

Fullfilment of the specific requirements for admission to the college of dentistry to the college of dentistry. From the requirements mentioned in this section, the requirements, the admissions committee will select the applicants who in their judgment appear to be best qualified.

681—2.4(262) College of dentistry
2.1(3) 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 baccalaureate degree or who have completed the requirements for the degree in a combined program.

Fullfilment of the specific requirements for admission to the college of dentistry to the college of dentistry. From the requirements mentioned in this section, the requirements, the admissions committee will select the applicants who in their judgment appear to be best qualified.

681—2.4(262) College of dentistry
2.1(3) 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 baccalaureate degree or who have completed the requirements for the degree in a combined program.

Fullfilment of the specific requirements for admission to the college of dentistry to the college of dentistry. From the requirements mentioned in this section, the requirements, the admissions committee will select the applicants who in their judgment appear to be best qualified.
admissions and the committee on admissions of the college of dentistry. Applicants who have completed the requirements for admission to dentistry five or more years prior to seeking admission to this college of dentistry will be considered by the admissions committee only under exceptional circumstances. Preference will be given to applicants who are residents of Iowa, but consideration will also be given to outstanding nonresidents.

Personal interviews will be required of applicants for admission to the college of dentistry. Applicants will be notified when they should appear for the required interviews with numbers of the admissions committee.

All applicants must complete the oral aptitude test sponsored by the council on dental education of the American Dental Association. Apply for the dates given 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 nonrefundable but is credited toward the first lien payment. The deposit must be made by the date specified for the deposit in the letter of acceptance. Accepted applicants for admission are required to submit a satisfactory physical examination report to the university student health service within two weeks following notification of acceptance. All applicants must also complete, through student health service, an X-ray film of the chest and a successful vaccination against smallpox prior to registration.

2.4(2) Advanced standing

Applicants for admission with advanced standing are handled as individual cases.

681—2.7(262) College of engineering

Address all inquiries regarding admission to the Director of Admissions, University of Iowa, Iowa City, Iowa. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

2.5(1) Admission of freshmen students

The applicant must submit a formal application for admission and must have the secondary school provide a certificate of high school credits, including a complete statement of the applicant’s high school record, rank in class, scores on standardized tests and certification of high school graduation. The applicant must also submit any other evidence such as a certificate of health which may be required by this university.

Each applicant must have attained satisfactory scores on the university’s required admission examinations, maintained a satisfactory cumulative grade-point average, achieved satisfactory rank in graduating class, and successfully completed all prerequisite courses. The university with the approval of the faculty board of regents shall establish and periodically review specific minimum requirements for admission to the college of engineering. Among the items to be so determined are test scores, grade-point average, class rank and prerequisite courses. These specific determinations will be published in the university catalog.

From applicants who do not meet minimum admission requirements, the director of admissions may after a review of the applicant’s record (a) admit unconditionally, (b) admit on probation, (c) require enrollment for a tryout period during a preceding summer session, or (d) deny admission.

2.6(1) Admission of undergraduate students by transfer

The applicant must submit a formal application and official transcript of college work. Each applicant should have:

a. Maintained satisfactory progress in mathematics.

b. Attained satisfactory scores on the university’s required admission examinations.

c. Maintained a satisfactory cumulative grade-point average on all college work undertaken.

From applicants who do not meet recommended requirements, the director of admissions will review individual records and may offer provisional admission.

681—2.6(262) Graduate college

Graduates of any college or university accredited by regional accrediting associations or any graduate record that is satisfactory shall be admitted to the graduate college. Admission to the graduate college is not the equivalent of acceptance as a candidate for an advanced degree. Acceptance is given generally upon the completion of course work at the university and upon recommendation of the major department and approval by the dean of the graduate college. Acceptance of a student at a degree candidate is determined upon the merits of each individual case.

A student who is 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. Applicants may secure a college of law in the summer session or the fall semester. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

To be considered for admission, an applicant should have attained a cumulative grade-point average of at least 3.00 on all college work undertaken. The grade-point average is based on the University of Iowa’s grading system in which a grade of “A” is equivalent to four points. Other grading systems will be evaluated by the office of admissions.

Applicants for admission must present a baccalaureate degree from an approved college or university prior to commencing work in the college of law.

Each applicant for admission must take the Law School Admission Test administered by the Educational Testing Service, Princeton, New Jersey, and have the score forwarded to the college of law. The test is given several times per year and may be taken at numerous locations in the United States and throughout the world. Applicants are urged to take the test in the fall or winter preceding the fall semester for which they are making application. Except upon showing a satisfactory to it, the admissions committee will not consider applications from applicants who fail to take the test prior to the June preceding the fall semester in which they wish to enter.

Fulfillment of the specific requirements for admission listed above does not guarantee admission to the college of law. From the applicants meeting the minimal requirements, the admissions committee of the college of law will select those applicants who, in their judgment, appear to be best qualified for the study and practice of the law. The basis upon which the committee will be required to best estudiantes to provide a certificate of high school credits, including a complete statement of the applicant’s high school record, rank in class, scores on standardized tests and certification of high school graduation. The applicant must also submit any other evidence such as a certificate of health which may be required by this university.

Each applicant must have attained satisfactory scores on the university’s required admission examinations, maintained a satisfactory cumulative grade-point average, achieved satisfactory rank in graduating class, and successfully completed all prerequisite courses. The university with the approval of the faculty board of regents shall establish and periodically review specific minimum requirements for admission to the college of engineering. Among the items to be so determined are test scores, grade-point average, class rank and prerequisite courses. These specific determinations will be published in the university catalog.

From applicants who do not meet minimum admission requirements, the director of admissions may after a review of the applicant’s record (a) admit unconditionally, (b) admit on probation, (c) require enrollment for a tryout period during a preceding summer session, or (d) deny admission.

2.6(1) Admission of undergraduate students by transfer

The applicant must submit a formal application and official transcript of college work. Each applicant should have:

a. Maintained satisfactory progress in mathematics.

b. Attained satisfactory scores on the university’s required admission examinations.

c. Maintained a satisfactory cumulative grade-point average on all college work undertaken.

From applicants who do not meet recommended requirements, the director of admissions will review individual records and may offer provisional admission.

681—2.6(262) Graduate college

Graduates of any college or university accredited by regional accrediting associations or any graduate record that is satisfactory shall be admitted to the graduate college. Admission to the graduate college is not the equivalent of acceptance as a candidate for an advanced degree. Acceptance is given generally upon the completion of course work at the university and upon recommendation of the major department and approval by the dean of the graduate college. Acceptance of a student at a degree candidate is determined upon the merits of each individual case.

A student who is 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. Beginning students may secure a college of law in the summer session or the fall semester. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

To be considered for admission, an applicant should have attained a cumulative grade-point average of at least 3.00 on all college work undertaken. The grade-point average is based on the University of Iowa’s grading system in which a grade of “A” is equivalent to four points. Other grading systems will be evaluated by the office of admissions.

Applicants for admission must present a baccalaureate degree from an approved college or university prior to commencing work in the college of law.

Each applicant for admission must take the Law School Admission Test administered by the Educational Testing Service, Princeton, New Jersey, and have the score forwarded to the college of law. The test is given several times per year and may be taken at numerous locations in the United States and throughout the world. Applicants are urged to take the test in the fall or winter preceding the fall semester for which they are making application. Except upon showing a satisfactory test score to it, the admissions committee will not consider applications from applicants who fail to take the test prior to the June preceding the fall semester in which they wish to enter.

Fulfillment of the specific requirements for admission listed above does not guarantee admission to the college of law. From the applicants meeting the minimal requirements, the admissions committee of the college of law will select those applicants who, in their judgment, appear to be best qualified for the study and practice of the law. The basis upon which the committee will be required to best
681—2.8.[262] College of medicine

2.8(1) Application for admission

Address all inquiries regarding admission to the Director of Admissions, University of Iowa.

Applicants are urged to apply as early as possible, since this will give the admissions committee more time to decide on each application. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

Fullfillment of the baccalaureate requirements for admission listed below do not ensure admission to the college of medicine. From the applicants meeting the specific requirements, the admissions committee of the college of medicine will select those applicants who in their judgment appear to be best qualified for the study and practice of medicine.

Prior to entrance an applicant must:

a. Have received the baccalaureate degree; or

b. Have completed three years of a combined baccalaureate-medicine curriculum which qualifies the applicant to receive the baccalaureate degree on completion of the first year in medicine; or

c. Have completed three years of a baccalaureate program which includes the general graduation requirements of the college of liberal arts of the University of Iowa for the combined baccalaureate degree.

Each applicant must place on file in the office of the director of admissions the completed application form and an official transcript from each college attended.

The college work as outlined below will suffice to meet the minimal academic requirements for admission to the college of medicine.

Applicants who have completed the baccalaureate degree and required courses five or more years prior to seeking admission to this college of medicine will be considered by the admissions committee only under exceptional circumstances.

The college curriculum must include at least three years (equivalent to 96 semester hours) including specific required science courses as prescribed by the faculty of the college.

Students planning to study medicine should bear in mind that other college work is required in addition to prerequisite sciences because it offers an opportunity to secure a well-rounded education, which is of special importance to those entering the medical profession. In the selection of applicants, preference will be given to those who give evidence of having obtained such a breadth of education.

To be considered for admission, an applicant must have attained a grade-point average of at least 2.50 for all college work undertaken. As the quality of work in premedical science is very basic to success in medicine, special attention will be given by the admissions committee to grades in science. The grade-point average is based on the University of Iowa's grading system in which a grade of "A" is equivalent to four points. Other grading systems will be evaluated by the college in the context 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 required to complete this test in May or October of the year preceding that for which they are applying for admission. Students may make arrangements to apply for this examination through the university examination service, the University of Iowa Personal Interviews will be required. Applicants will be contacted for the appointment for required interviews.

Applicants accepted for admissions are required to submit a satisfactory physical examination report to the university student health service within two weeks following notification of acceptance.

All applicants must also complete, through Student Health Service, an x-ray film of the chest and a complete blood examination against smallpox prior to registration.

2.8(2) Admission to advanced standing

If their work prepared for entering a college of medicine would have met entrance requirements and where 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 already pursued by the class they wish to enter.

The committee on admission to advanced standing will decide in each case whether examinations in the various subjects will be required.

Applications will be considered only upon receipt of a statement from the dean or registrar of the college from which the applicant comes, showing the actual amount of time the student has spent in the study of medicine, the courses taken, and the grades received, together with a statement of the work preparatory to entering 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.

2.8(3) Unclassified students

Applicants for admission to the college of medicine who are not candidates for a degree but who desire to register for special subjects will be admitted to any lecture or laboratory course only upon complying with all the regular requirements for admission to such course or by action of the faculty upon recommendation of the professor in charge of the course.

681—2.9.[262] College of nursing

Applications for admission to the college of nursing must be submitted to the Director of Admissions, 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 division of admissions will provide a list of the course work required.

2. Completed the American College Tests.

3. Performed satisfactorily on all courses undertaken.

Applicants from students who have minor deficiencies in meeting grade-point requirements specified above will be reviewed by the admissions committee of the college and, upon favorable recommendation, such students may be granted conditional or provisional status.

Fullfillment of the minimum requirements listed above; however, does not assure admission to the college. If necessary, the admissions committee will select the applicants who, in their judgment, appear to be best qualified.

681—2.10.[262] College of pharmacy

2.10(1) General basis for admission

Fullfillment of the specific requirements for admission does not ensure admission to the college of pharmacy. The applicants meeting the specific requirements for admission will be considered by the faculty. The committee on admissions will select those applicants who in their judgment appear to be best qualified.

Applicants for admission to the college of pharmacy should have graduated from an approved high school or have an equivalent amount of college work.

2.10(2) College work

The college work as outlined below will meet the minimum academic requirements for admission to the college of pharmacy. The minimum should include 32 semester hours of college level work exclusive of credit in military and air science and physical education. The 32 semester hours must include:
Communication skills. Applicants must have demonstrated satisfactory achievement in communication skills according to the requirements of the college of liberal arts at the state University of Iowa. Applicants from other institutions may meet this requirement by presenting six semester hours of credit in English composition and rhetoric and two semester hours of credit in speech or an eight-semester-hour course in communication skills.

Inorganic chemistry and qualitative analysis, eight semester hours.

College mathematics, eight semester hours.

Physics or zoology, eight semester hours.

Students from other institutions may substitute a comparable eight-semester-hour course in biology in lieu of zoology.

Military or air science (if available), zero to two semester hours.

Students who present minor deficiencies in meeting the above requirements may be admitted to the college of pharmacy upon the recommendation of the dean of admissions and the college of pharmacy.

2.10(3) Scholarship and application deadline

To be considered for admission to the college of pharmacy, students must have earned a 2.50 or C average on all college work undertaken. The minimum grade-point average of 2.00 is based on the state University of Iowa's grading system in which the grade of "A" is equivalent to 4.0 points. Applications for admission and the required official transcripts should be filed before March 1 for the class to enter pharmacy in September.

2.10(4) Required test

Applicants for admission are required to take the American College Testing Program test.

2.10(5) Current requirements

Applicants who have completed work in a college of pharmacy accredited by the American Council on Pharmaceutical Education may enter if their college academic average is acceptable for admission and granted advanced standing toward the degree of bachelor of science in pharmacy.

681—2.11(262) College of liberal arts

Applicants for admission to liberal arts must meet the same standards as those for admission to the state institutions in Iowa as listed in 1.1(261), 1.9(262) and 1.3(262).

681—2.12(262) College of education

Students at the university desiring professional work in education are registered in the college of liberal arts or the graduate college. Requirements for permission to take teacher training courses are listed in the university catalogue.
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