The University of Iowa

General Catalog
The University of Iowa
General Catalog 1980-82

New Series No. 2140 (USPS 651-460)
August 1, 1980
Published by The University of Iowa, Iowa City, Iowa 52242, is issued five times during the year in April, May, and December, and twice in August. Entered at the post office in Iowa City, Iowa 52242, as second-class matter under the Act of August 24, 1912. Postmaster: Please send Form 3579 to The University of Iowa, Calvin Hall, Iowa City, Iowa 52242.

Copies of this Catalog are available for examination in all Iowa high schools, offices of the county superintendents of schools, public libraries and junior and community colleges, at the major state government offices in Des Moines, and in each office of the University. Copies may be secured from the Office of Admissions without charge. Reprints of individual sections of the Catalog are also available without charge. This Catalog is published for informational purposes and should not be construed as the basis of a contract between a student and The University of Iowa. Every effort is made to provide information that is accurate at the time the catalog was prepared; however, information concerning regulations, policies, fees, curricula, courses, and other matters contained in this Catalog is subject to change at any time during the period for which the catalog is in effect. Current information regarding fees, important dates and the availability of courses can be found in the Schedule of Courses that is available before each term or by request from the Office of Admissions.
University Calendar

First Semester

1980-81
Registrar’s begins
Classes begin
University holiday
Homecoming
Thanksgiving recess
University holidays
Classes resume
Classes end
Examination week
Commencement
University holidays
University holiday

1981-82
August 25
August 28
September 1
October 18
November 25
December 1
December 15-19
December 20
December 25-28
January 1

Second Semester

1980-81
Registration begins
Classes begin
Foundation Day
Spring vacation begins
Saturday classes only meet
Classes resume
Classes end
Examination week
Commencement
University holiday

1981-82
January 15
January 19
February 25
March 20
March 21
March 20
May 8
May 11-15
May 18
May 25

Summer Session

1981

1982
Registration
Classes begin
University holiday
Session ends
Commencement

Independent Study Unit classes for
law and graduate students,
Close of Independent Study Unit

June 8
June 9
July 3
July 31
August 3

June 7
June 8
July 5
July 30
August 2

August 20
Contents

General information ........................................ 1
Services for Students ........................................ 7
Housing ......................................................... 12
Financial Aid .................................................. 14
The University of Iowa Health Center ...................... 17
Research Activities ........................................... 21
The Iowa Center for the Arts ................................ 25
General Services .............................................. 28
Libraries ......................................................... 31
College of Liberal Arts ....................................... 33
College of Business Administration ......................... 255
College of Dentistry .......................................... 274
College of Education ......................................... 292
College of Engineering ....................................... 332
Graduate College ............................................. 363
College of Law ................................................ 376
College of Medicine ......................................... 381
College of Nursing ........................................... 425
College of Pharmacy ......................................... 432
Continuing Education ....................................... 437
Administrative Officers ...................................... 441
Academic Personnel .......................................... 444
Iowa Administrative Code: Board of Regents .............. 490
General Information

The University of Iowa is one of Iowa's three state universities. The core of the University is the College of Liberal Arts. Within the college there are seven schools: Art and Art History, Journalism, Letters, Library Science, Music, Religion, and Social Work. The College of Liberal Arts is closely linked with the professional colleges of Business Administration, Dentistry, Education, Engineering, Law, Medicine, Nursing, and Pharmacy, and with the Graduate College, all located on a single campus in Iowa City. Some faculty members from the University's professional colleges also teach undergraduate classes in the College of Liberal Arts, including an increasing number of interdisciplinary courses. Total University enrollment during 1979-80 was about 23,350 students.

Founded on February 25, 1847, the University of Iowa is the state's oldest institution of higher education. It established the first law school west of the Mississippi. It was the country's first institution of higher education to accept women and men on an equal basis (the year was 1850). It became the first university to accept creative work in law of the traditional academic thesis from graduate students in the arts. It pioneered the now world-recognized Iowa Writers Workshop for creative literature. It is recognized as the place where the field of speech therapy originated. It has earned recognition for the quality and versatility of its teaching and research programs in space physics, evolutionary biology, and the teaching of composition, and in graduate programs in speech, dramatics, art, and communications, to cite just a few recent examples.

The UI faculty includes some 1,500 full-time members, many of whom have established national and international reputations. Their effectiveness as teachers is significantly enhanced by their involvement in scholarly and scientific research. The University seeks to foster faculty vitality by maintaining a healthy balance between teaching and research, and between undergraduates and graduate/professional instruction.

The University's undergraduate enrollment is about evenly divided between men and women students. Approximately 47 percent of the undergraduate students are Iowa residents. The balance consists of students from all other 49 states and more than 80 foreign countries. About 65 percent of the University's entering freshmen had a "B" average or above in high school. Approximately 97 percent ranked in the upper half of their high school classes and about 95 percent ranked in the upper tenth.

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

Reflecting a growing trend toward lifelong learning, the University in recent years has substantially expanded educational programs both on and off campus for individuals who cannot enroll as regular full-time students. These "nontraditional" learning opportunities range from mini-courses, conferences, workshops, and continuing education programs for professionals, to Saturday and evening classes offered on campus and credit courses taught off campus. In 1987 the University, in cooperation with Iowa's other two state universities, introduced a new Bachelor of Liberal Studies degree program geared specifically to adults who wish to earn a college degree but are unable to enroll in traditional on-campus study.
Degrees Offered
The University offers the following degrees. The major fields are listed in the various college sections of the Catalog.

Bachelor of Arts, Bachelor of Science, Bachelor of Music, Bachelor of Fine Arts, Bachelor of Liberal Studies, Bachelor of Business Administration, Bachelor of Science in Engineering, Bachelor of Science in Chemical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Industrial Engineering, Bachelor of Science in Mechanical Engineering, Bachelor of Science in Pharmacy, Bachelor of Science in Nursing, Doctor of Dental Surgery, June Doctor, Doctor of Medicine, Master of Arts, Master of Science, Master of Business Administration, Master of Fine Arts, Master of Social Work, Master of Arts in Teaching, Education Specialist, Doctor of Musical Arts, 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 1915. 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 three universities and the University of Chicago in the Committee for Institutional Cooperation (CIC).

Various colleges and schools of the University are members of accrediting associations in their respective fields, as follows:

Colleges
Business Administration—American Assembly of Collegiate Schools of Business

Density—American Dental Association
Education—National Council for Accreditation of Teacher Education
Engineering—The Accreditation Board for Engineering and Technology (ABET) of the American Association of Engineering Societies (AESES), formerly the Engineers’ Council for Professional Development (ECPD)
Law—American Bar Association and Association of American Law Schools
Medicine—Liaison Committee on Medical Education (representing the American Medical Association and the Association of American Medical Colleges)
Nursing—National League for Nursing
Pharmacy—American Council on Pharmaceutical Education

Schools
Journalism—American Council on Education in Journalism
Library Science—American Library Association
Music—National Association of Schools of Music
Social Work—Council on Social Work Education

Departments and Programs
Chemistry—American Chemical Society
Dental Hygiene—American Dental Association Council on Dental Education
Dietetics—American Dietetic Association
Hospital Administration—Accrediting Commission on Education for Health Service Administration
Medical Technology—National Accrediting Agency for Clinical Laboratory Sciences
Physician’s Assistant—American Medical Association Council on Medical Education in collaboration with the Joint Review Committee on Educational Programs for the Assistant to the Primary Care Physician
Physical Therapy—American Medical Association Committee on Allied Health Education Accreditation and the American Physical Therapy Association
Nuclear Medical Technology—American Medical Association
Psychology—American Psychological Association
Speech Pathology and Audiology—American Speech and Hearing Association

Sessions
The University’s academic year consists of two semesters of approximately 17 weeks each. The University also conducts an eight-week summer session, and, following that, an Independent Study List of from one to four additional weeks for students in the Graduate College and the College of Law.

Code of Student Life
All members of the academic community students are encouraged to develop a capacity for critical judgment and to engage in a sustained and independent search for truth. The freedom to learn and the freedom to teach depends upon appropriate opportunities and conditions in the classrooms, on the campus, and in the larger community. Students are expected to respect the general conditions conducive to such freedoms.

Accordingly, the University has developed a Code of Student Life that is intended to provide and safeguard the right of every individual student to exercise fully his or her freedom to learn without undue interference by others. This code applies only to student misconduct which adversely affects some University process or function or some other individual and clear interest of the University as an academic community. Students are expected to acquaint themselves with the code and to conduct themselves in accordance with the standards it sets forth.
Human Rights

The University is guided by the precept that in no aspect of its programs shall there be a difference in the treatment of persons because of race, creed, color, national origin, age, sex, or any other classifications which deprive the person of consideration as an individual, and that equal opportunity and access to facilities shall be available to all. This principle is expected to be observed 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 works cooperatively with the community in furthering this principle.

University Marking System

<table>
<thead>
<tr>
<th>Mall</th>
<th>Definition</th>
<th>Code</th>
<th>Major/ Semester Tor</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>superior</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>above average</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>average</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>below average</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>failing</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>honors</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>incomplete</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>D*</td>
<td>no grade</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>passing</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>R*</td>
<td>audit</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>D**</td>
<td>satisfactory</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

(Graduate College only)

W* (*Not used in computing grade point average)

Recognition of High Scholastic Achievement

The University recognizes high scholastic achievement by awarding degrees "with distinction," "with high distinction," and "with highest distinction," based on these criteria:

- "With distinction:" GPA 3.75 or higher
- "With high distinction:" GPA 3.93 or higher
- "With highest distinction:" GPA 3.95 or higher

Records

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

Honorary and Professional Societies

Phi Beta Kappa, Sigma Xi, Mortar Board, and Omicron Delta Kappa are among 64 national honorary and professional societies in which The University of Iowa has active chapters.

Applying for Admission

Correspondence regarding admission to any college of The University of Iowa should be addressed to the Admissions Office, 108 Calvin Hall, The University of Iowa, Iowa City, Iowa 52242. The first letter should request an application for admission, briefly describe the prospective applicant's high school or college background, and outline his or her plans for further study, including the department or general field in which he or she expects to major. All applicants for admission to all colleges of the University must submit formal applications to the Admissions Office and must furnish official transcripts and other supporting material as specified.

Application Fee

A $10 application fee must accompany applications submitted by prospective students not previously enrolled for full-time study at the University during the regular academic year. A Graduate college applicant must pay the fee, unless he or she has earned a degree from The University of Iowa. Application fees are not refundable, except to Iowa residents who are denied admission.

Application Deadlines

Applications for admission must submit the required application documents to the Office of Admissions by the deadline dates listed below. Foreign students usually have earlier application deadlines (see "Foreign Students" below).

College of Liberal Arts—Ten days before classes begin—all sessions
College of Business Administration—April 1 for summer session, June 1 for fall semester, November 15 for spring semester
College of Dentistry—December 1, fall semester only
College of Engineering—Ten days before classes begin, all sessions
Graduate College—the general Graduate College deadlines: May 1 for the summer session, July 15 for the fall semester, and December 1 for the spring semester. Some departments may have earlier deadlines. Early submission of materials is advised. 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, fall semester only, Early Decision Plan, August 1 for the following year
College of Nursing—March 1 for fall semester, June 15 for spring semester, December 15 for summer session
College of Pharmacy—March 1, fall semester only
Dental Hygiene Program—March 1
Physical Therapy Certification Program—February 1, fall semester only
Physician's Assistant Program—January 15, fall semester only
Teacher Education Program—May 1 preceding the academic year in which the student plans to enroll in professional education courses

Foreign Students

The University of Iowa encourages foreign students to begin the process of applying for admission at least twelve months prior to matriculation. The applicant should have satisfied all the application procedures and submitted his or her complete application file to the Admissions Office by the dates given below:

Graduate College—Students applying...
to The University of Iowa for financial assistance (scholarships, fellowships, assistantships):
February 1 for summer session or fall semester, October 1 for spring semester
Students who will not require University financial support:
March 1 for summer session, April 16 for fall semester, October 1 for spring semester
Colleges of Business Administration, Engineering, Liberal Arts:
March 1 for the summer session, April 16 for the fall semester, October 1 for the spring semester
Applications to all other colleges and programs must meet the deadlines set forth above for all students.

ACT Test Scores
The University of Iowa requires all entering freshmen and undergraduate transfer students to complete the American College Testing (ACT) Assessment Program and have their test scores reported to the University before they register for classes.

The University of Iowa uses ACT scores for:
Admission—As a criterion for admitting some students unconditionally or on probation; for requiring some students to attend a preparatory summer session and for denying admission to applicants who do not meet minimal standards.
Placement—As a basis for excusing some students from certain basic course requirements; for placing others in sections designed to meet individual needs; and for advising students concerning their programs of study and future educational plans.
Scholarship—As a criterion for awarding University-administered scholarships and loans.
Scholastic Aptitude Test (SAT) scores may be submitted with freshman or undergraduate transfer admission applications and will be used for admission evaluation. However, ACT scores must be submitted prior to registration.

Tuition and Fees
The following is the University's schedule of tuition and fees, per semester, for the academic year 1986-87:

<table>
<thead>
<tr>
<th></th>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>hour angle</td>
<td>fees</td>
<td>name</td>
</tr>
<tr>
<td>0-4</td>
<td>6800</td>
<td>975</td>
</tr>
<tr>
<td>5-9</td>
<td>6492</td>
<td>1075</td>
</tr>
<tr>
<td>10 or over</td>
<td>5775</td>
<td>1025</td>
</tr>
</tbody>
</table>

Graduate and Professional College Examinations
Prospective Graduate College applicants should take the Graduate Record Examination (GRE) Aptitude Test or, if applying for admission to a department of the College of Business Administration other than Economics, the Graduate Management Admission Test (GMAT). Prospective students of the colleges of Dentistry, Law, or Medicine are required to take admission tests of the respective colleges.

Medical Information
In the interest of providing optimum health care, Student Health Service strongly recommends that, following their admission, incoming students submit physical examination reports and personal health histories on the forms provided for that purpose. This information does not affect the student's admission and is exclusively for Student Health Service use as necessary background for attending to the student's health needs.

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 Iowa 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.

Registration
All persons who attend University classes must have been 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 Engineering, Liberal Arts,
and Nursing may audit courses with proper approval. Students who audit courses will be assessed fees based on the lowest credits for which the course is available that semester.

### Procedure for Payment of Student Accounts

Tuition and fees, board, room, and other University-related costs as library and parking fees, are payable on an installment basis, with the first of September, October, and November for the fall semester, and the first of February, March, and April for the spring semester. Students with accounts overdue on the fifteenth of the month are reported to the registrar for cancellation of registration. There is a $10 fee for reinstatement.

### Refund Schedule

Students who cancel their registrations during a regular semester receive a reduction of fees assessed as follows: during the first week of classes—90%; during the second week—75%; during the third week—50%; during the fourth week—25%. There is no reduction of fees for cancellations after the fourth week of classes.

### Numbering of Courses

Each course in the regular University curriculum has an identifying number, preceded by the number of the college, department, or program by which the course is administered. For example "3.1" is the code for the course numbered 1 in the Botany of the College of Arts (2), entitled "Introduction to Botany." Courses numbered below 100 designate courses "primarily for undergraduates" numbered 101 to 199 designate courses "For undergraduates and gradates," and numbers 200 and above designate courses "Graduate." (see "Catalog of Courses:"

### College of Business Administration

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>Accounting</td>
</tr>
<tr>
<td>E3</td>
<td>Economics</td>
</tr>
<tr>
<td>E6</td>
<td>Finance</td>
</tr>
<tr>
<td>G6</td>
<td>Management Sciences</td>
</tr>
<tr>
<td>G6L</td>
<td>Industrial Relations and Human Resources</td>
</tr>
</tbody>
</table>

### General Information

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>6M</td>
<td>Marketing</td>
</tr>
<tr>
<td>6B</td>
<td>Business Education</td>
</tr>
</tbody>
</table>

### College of Dentistry

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Fixed Prosthodontics</td>
</tr>
<tr>
<td>52</td>
<td>Operative Dentistry</td>
</tr>
<tr>
<td>53</td>
<td>Endodontics</td>
</tr>
<tr>
<td>54</td>
<td>Removable Prosthodontics</td>
</tr>
<tr>
<td>55</td>
<td>Oral Pathology and Diagnosis</td>
</tr>
<tr>
<td>57</td>
<td>Oral Surgery</td>
</tr>
<tr>
<td>58</td>
<td>Dental Hygiene</td>
</tr>
<tr>
<td>59</td>
<td>Orthodontics</td>
</tr>
<tr>
<td>60</td>
<td>Periodontics</td>
</tr>
<tr>
<td>61-67</td>
<td>Preventive and Community Dentistry</td>
</tr>
<tr>
<td>68-71</td>
<td>Dental Hygiene</td>
</tr>
<tr>
<td>72-75</td>
<td>Family Dentistry</td>
</tr>
</tbody>
</table>

### College of Education

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7C</td>
<td>Counselor Education</td>
</tr>
<tr>
<td>7D</td>
<td>Educational Administration</td>
</tr>
<tr>
<td>7E</td>
<td>Early Childhood and Elementary Education</td>
</tr>
<tr>
<td>7F</td>
<td>Social Foundations and Comparative Education</td>
</tr>
<tr>
<td>7H</td>
<td>Post-Secondary and Continuing Education</td>
</tr>
<tr>
<td>7P</td>
<td>Educational Psychology, Measurement, and Statistics</td>
</tr>
<tr>
<td>7S</td>
<td>Secondary Education</td>
</tr>
<tr>
<td>7U</td>
<td>Special Education</td>
</tr>
<tr>
<td>7W</td>
<td>Instructional Design and Technology</td>
</tr>
<tr>
<td>7X</td>
<td>Education Interdisciplinary</td>
</tr>
</tbody>
</table>

### College of Engineering

All courses are offered by the divisions for the academic programs. Division course offerings are distinguished by the first two digits of the course prefix. (see "Catalog of Courses:"

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>52x</td>
<td>Energy Engineering</td>
</tr>
<tr>
<td>54x</td>
<td>Information Engineering</td>
</tr>
<tr>
<td>55x</td>
<td>Materials Engineering</td>
</tr>
<tr>
<td>56x</td>
<td>Systems Engineering</td>
</tr>
<tr>
<td>57x</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>58x</td>
<td>Chemical and Materials Engineering</td>
</tr>
<tr>
<td>59x</td>
<td>Civil and Environmental Engineering</td>
</tr>
<tr>
<td>50x</td>
<td>Electrical and Computer Engineering</td>
</tr>
</tbody>
</table>

### College of Law

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Divinity, Sociology, and International Studies</td>
</tr>
<tr>
<td>52</td>
<td>Law</td>
</tr>
</tbody>
</table>

### College of Liberal Arts

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>53</td>
<td>Nondepartmental Courses</td>
</tr>
<tr>
<td>54</td>
<td>English</td>
</tr>
<tr>
<td>55</td>
<td>History</td>
</tr>
<tr>
<td>56</td>
<td>Mathematics</td>
</tr>
<tr>
<td>57</td>
<td>Physics</td>
</tr>
<tr>
<td>58</td>
<td>Speech Pathology and Audiology</td>
</tr>
<tr>
<td>59</td>
<td>Theatre</td>
</tr>
</tbody>
</table>

### Library

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Library Science</td>
</tr>
<tr>
<td>52</td>
<td>Avshfeld Mathematical Science</td>
</tr>
<tr>
<td>53</td>
<td>Computer Science</td>
</tr>
<tr>
<td>54</td>
<td>Mathematics</td>
</tr>
<tr>
<td>55</td>
<td>Statistics</td>
</tr>
<tr>
<td>56</td>
<td>Military Science</td>
</tr>
<tr>
<td>57</td>
<td>Aerospace Military Studies</td>
</tr>
<tr>
<td>58</td>
<td>Museum Training</td>
</tr>
<tr>
<td>59</td>
<td>Music</td>
</tr>
<tr>
<td>60</td>
<td>Philosophy</td>
</tr>
<tr>
<td>61</td>
<td>Physical Education—Field House</td>
</tr>
</tbody>
</table>
28 Physical Education and Dance—Halsey Gym
290 Dance
29 Physical Science
30 Political Science
31 Psychology
32 Religion
33 Literature, Science, and the Arts
34 Sociology
35 Spanish
36 Communication and Theatre Arts
38B Broadcasting and Film
38C Communication
38R Rhetorical Studies
39T Dramatic Art (Theatre)
39 Zoology
39J Japanese
41 Russian
42 Social Work
44 Geography
45 American Studies
47 Global Studies
48 Comparative Literature
49 Science Education
88 Social Studies
102 Urban and Regional Planning
103 East and Linguistics
104 Recreation Education
104 Letters
113 Anthropology
122 Communication Studies

College of Medicine
50 Medicine Nondepartmental
60 Anatomy
61 Microbiology
62 Dermatology
63 Preventive Medicine and Environmental Health
64 Neurology
65 Human Nutrition
66 Obstetrics and Gynecology
67 Ophthalmology
68 Otolaryngology and Maxillofacial Surgery
90 Pathology
70 Pediatrics
71 Pharmacology
72 Physiology and Biophysics
73 Psychiatric
74 Radiology
75 Surgery
76 Orthopaedic Surgery
77 Radiation Therapy
Services for Students

Academic Advising Offices

Faculty Advisers
Each student is assigned an academic adviser to assist with educational planning, academic counseling, and registration. Students with undeclared or preprofessional program goals may be assigned an adviser from the Undergraduate Academic Advising Center. Students in professional colleges (Business, Education, Engineering, Nursing, Pharmacy, Dentistry, Law, and Medicine) are assigned by the college deans or their designated representatives. Graduate students are advised by their department heads and the Graduate College dean.

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

Undergraduate Academic Advising Center
Advisers of the Undergraduate Academic Advising Center are specifically trained to help students who wish to explore alternative fields of study as they select career paths or plans of study appropriate to their interests. Advisers are conveniently located in student residence halls.

Collegiate Advisory Offices
Each of the undergraduate colleges of the University also maintains an advisory office. These offices are available to all students to assist with questions concerning admissions, academic majors and course requirements, grading options, career and degree plans, and other items of concern. They assist students who wish to change advisers and/or majors, and they also act on student complaints.

Admissions
Inquiries about admission to any college of the University, applications for admission to any college of the University, transcripts to support transfer applications, and requests for evaluation of transfer credit should be sent to the Office of Admissions.

Campus Information Center
Located in the south lobby of the Iowa Memorial Union, the center provides information about campus and community activities and University services and operations, and provides referrals to appropriate services to meet needs related to University life. The center is open from 8 a.m. until 9 p.m. Monday through Saturday and from noon until 4 p.m. Sunday. During hours the center is not staffed, a telephone answering service records questions or messages for answer or referral as soon as the center opens.

Career Services and Placement Center

Career Planning
The staff in the planning and resources areas provides students with the information and resources necessary for good, sound career decision making. Students have the opportunity to avail themselves of information through individual advising appointments, seminars, workshops, and a 2-semester hour course, Making a Vocation/An Educational Choice. The center assists interested students in expanding their career options, in making realistic career plans, and in learning how to use career information to their best advantage.
learning how to use career information to their best advantage.

Career Resource Center

The Career Resource Center contains a wealth of information students can use to help them make career/academic decisions, conduct a job search, and prepare for interviewing. The resources contain information from professional associations, government agencies, Occupational Outlook Handbook, Dictionary of Occupational Titles and job search guides. A career information specialist is always on duty to help students use the resources to meet their specific needs.

Cooperative Education

Coordinated by the Career Services and Placement Center, the Cooperative Education Program offers students the opportunity to alternate academic studies with related work experiences. Students in business, engineering, or liberal arts who meet the prerequisites of their respective colleges or academic departments generally enter the program during or near their freshman year. Cooperative education positions are filled on a competitive basis, with participating employers making the final selections from among the student candidates.

Placement

The center provides job placement assistance for all seniors and graduates seeking employment in business, industry, government, and nonprofit agencies. Assistance includes individual consultations with professional placement faculty, seminars for developing job-hunting/ interview skills, on-campus interviews with prospective employers, information on employment trends, and current job openings for college graduates. Information sent by employers is made available to students and alumni in the Employer Literature Room. The material provides background information about organizations interviewing on campus or listing positions with Career Services. (Also see the “College of Engineering” and “College of Education” sections of the catalog for placement services guide colleges offer.)

Community College Affairs

The Office of Community College Affairs (OCCA) provides a variety of services to students transferring from community colleges. Students are encouraged to contact the office whenever questions arise concerning university services and procedures, the campus environment, or particular transfer policies.

Each semester transfer consultants and peer counselors (former community college transfer students) conduct several programs to assist new transfer students in making a smooth, effective transition to the University.

Programs are conducted both at The University of Iowa and at 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 the TRANSFO computerized information system. TRANSFO files contain complete lists of community college courses that have been approved by academic departments as meeting the requirements of various baccalaureate majors.

Counseling Service

The University Counseling Service staff of professional psychologists and advanced doctoral students offers vocational, educational, and personal counseling/therapy through individual or group sessions. It also offers a number of workshops, seminars, and consultation activities. All services are available to students without cost.

Dental Service

The dental clinics at The University of Iowa College of Dentistry are primarily for educational purposes. All students at the University and all students who are registered in the University may require dental treatment at the college and will be accorded the same opportunity for treatment as any other patient. 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. Fees are established for all treatment rendered, and patients are to pay cash or use Master Charge cards.

Evaluation and Examination Service

Evaluation and Examination Service duplicates, scores, and analyses many course examinations; helps faculty members develop and improve their classroom tests by providing analyses of the results of examinations; helps faculty or student groups with particular project requests, such as toaster or course evaluation and development; conducts institutional research projects and provides consulting services on questionnaire and survey design; administers many of the University's required and optional tests for entering students; and is a center for many national testing programs, including the American College Testing (ACT), Medical College Admission Test (MCAT), Graduate Record Examination (GRE), Graduate Management Admissions Test (GMAT), Graduate School Foreign Language Test (GSFLT), Law School Admission Test (LSAT), Test of English as a Foreign Language (TOEFL), Minor Analogy Test (MAT), and College Level Examination Program (CLEP).

Health Service

The Student Health Service is located in the Children's Hospital in the University medical complex. All regular students at the University, except those registered in off-campus courses, are eligible for outpatient care at the Student Health Clinic. There are charges for laboratory procedures, X-rays, accident examinations, minor surgery, and some special procedures. All students are advised to have health and accident insurance. A University-sponsored group insurance is available for individual students or as a family plan.
High School-College Relations

Administered as a part of the Office of Admissions, the High School-College Relations Office coordinates and implements all scheduled relations with secondary schools and institutions of higher education.

Intercollegiate Athletics for Men

The University is a member of the Western Intercollegiate Conference (Big Ten), and has athletic programs in football, basketball, track, baseball, swimming, golf, wrestling, tennis, cross-country, and gymnastics. Operating policies are determined by the Board in Control of Athletics, which is composed of twelve members from the University's teaching and administrative staff, two University alumni, one representative of the University Staff Council, and two students.

Intercollegiate Athletics for Women

Women's intercollegiate athletics at The University of Iowa include basketball, cross-country, field hockey, golf, gymnastics, softball, swimming, tennis, track and field, and volleyball. Athletic scholarships are available to qualified athletes in all sports.

The University is a state, regional, and national member of the Association for Intercollegiate Athletics for Women (AAW), and fully supports its athletics at state, regional, and national AAW competitions. Regularly scheduled competition includes other Big Ten universities.

Through the Women's Intercollegiate Sports Committee, each student athlete has a voice in the determination of Women's Athletics Department policies. The voting membership of the committee comprises a team representative in each sport, the coach in each sport, a student-elected president, and the women's athletic director.

Intramural Sports and Recreational Activities

Through the University's Division of Recreational Services, all interested students have opportunities to participate in more than 20 different intramural sports and recreational activities. (See "Recreational Services" in the "General Services" section of the Catalog.)

International Education and Services

Advices in the Office of International Education and Services promote and facilitate interaction between the University's American and foreign students and professionals, and provide University foreign students and professionals with information, advice, and counseling in such areas as immigration, personal and social adjustment, and financial planning.

The OIES operates the International Center, which students, faculty, and Iowa City community members use for meetings, meals, and activities with an international focus.

Overseas Study and Travel Abroad

This office maintains an extensive reference collection of information on study abroad programs offered by the University and by foreign or domestic institutions of higher learning, as well as material on foreign university libraries and special collections, volunteer work, student flight and land travel, hosteling, overseas accommodations, etc. The office gives students individual counseling on study abroad programs which will compliment their on-campus academic programs; assists them in obtaining correct credit assignment for foreign study; and provides current information on overseas conditions, health regulations, customs and duties, and all aspects of foreign travel. The International Student Identity Card is available in this office.

Iowa Memorial Union

The Iowa Memorial Union is the center of University social activities. It houses the Student Activities Center, University Counseling Service, Career Services and Placement Center, and Campus Information Center. The facilities include a variety of food services, a bowling and billiards area, a barber shop, an art resource center, a bookstore, a sundries shop, a television room, lounges, meeting rooms, auditions for lectures and concerts, art and sculpture display areas, and, in the adjoining Iowa House, 109 guest rooms for parish, alumni, conference and workshop participants, and other visitors to the campus.

Orientation

With the aid of representative student, faculty, and staff personnel, the Orientation Department designs and conducts a wide variety of programs to help new students—freshmen, transfer, and graduate—with their transition to University life. Orientation is intended not only to assist new students with schedual planning, academic advising and registration procedures, but also to acquaint them with the educational facilities, student services, and other available sources of help. In addition, Orientation's programming is designed to acquaint new students to the social, cultural, and recreational opportunities to familiarize them with the physical layout of the campus, and to make them feel at home in the University community.

Reading Lab

The Raw-Lab of the Rhetoric Program provides a variety of instruction and class instruction for any University students who wish to improve their college-level reading performance. Students are asked to specify what reading problems they have; teachers adapt practical materials and methods to help remedy those problems. Students may work on improving study skills, including library use, test-taking abilities, command of vocabulary, critical reading, and speed and comprehension reading.
The Reading Lab offers one service course, Voluntary Reading Lab, which meets twice a week for 12 weeks. Students may attend more or less often if they wish, and may enroll at any point during that time if they feel their need for reading help. The lab service course carries no credit and students earn no grade. Ordinarily, there are no outside assignments. Developmental reading work is stressed in lab hours, and makes exclusive use of lab materials and the students' own texts in other courses.

The lab also offers: 109 Rhetoric, a one-semester, two-credit course for students who need exceptional help preparing for college-level reading; and 89:20 Advanced Reading Comprehension, 89:30 Special Reading, and 89:40 Practical College Vocabulary, independent five-week modular courses for one semester hour of credit each.

Registrar

The Office of the Registrar determines the schedule status of each student, issues University identification cards, supervises registration procedures, assesses fees, and maintains all students' academic records and official transcripts; issues official transcripts; assists students in determining graduation requirements, processing applications for degree, and interpreting college and University academic regulations; provides assistance to students concerning Selective Service and military service matters, and helps student veterans with University application and enrollment procedures, and receipt of Veterans Administration benefits.

Special Support Services

The Office of Special Support Services (SSS) was established to make it possible for more students from economically and educationally disadvantaged or culturally different backgrounds to receive a higher education at The University of Iowa. Special Support Services provides academic, financial, and personal assistance programs.

Transcripts

Students who have completed work at The University of Iowa may obtain an official transcript of that work upon request to the Office of the Registrar. Fees are $2 for the first copy, $1 each for the second through fifth, 50 cents each beyond the fifth. An official transcript cannot be issued for a student who has a past-due University account.

Veterans Services

The Office of Veterans Services is part of the Office of the Registrar, and serves veterans, dependents of veterans, and servicemen in matters relating to veteran 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 the academic, vocational, and personal needs of women. It staff acts as a resource for many women's organizations, sponsors numerous cultural programs, seminars, support
Writing Lab

The lab offers individual instruction in writing to any University student. Each participating student's own writing provides the material for the course for that person. The teacher responds to what each person writes and, in personal conferences, helps him or her identify and overcome particular writing problems.

Any student who believes he or she cannot do the writing expected in the required rhetoric course may confer with the director of the lab about taking individual instruction in writing for credit (1 hour for credit) before registering for the required course. Noncredit students may enroll throughout the semester.
Fair Housing Policy

The following is the University's statement on fair housing practices: "It is and shall be the firm policy of the University that householders shall not discriminate against any tenant with respect to the rental or sale of a dwelling unit on the basis of race, creed, color, or national origin."

University Residence Halls

University residence hall furnishings, facilities, and services are designed to provide a pleasant atmosphere conducive to effective study.

Single, double, triple, and quadruple rooms with hall or partial toilet are available in the Grand Avenue Residence Halls (west side of the campus), which include Hillcrest, Quadraangle, Westwinds, South Quadrangle, Romeov, and Slater halls, and in the Clinton Street Residence Halls (east side of the campus), which include Burge Hall, Currier Hall, Daum House, and Stanley Hall. There are lounges, study rooms, browning libraries, game rooms, coin operated laundry facilities, and sundry stores in or available to each residence hall.

Each residence hall is divided into small living units. Each hall has a full-time head resident, and there is a student resident assistant in each living unit. All students are encouraged to participate in residence hall government at the unit, building, area, or system level.

Applications and Assignments

With their admission application forms, prospective undergraduate students are required to indicate their housing preferences. These preferences are considered in assigning housing, but the assignment is subject to availability of housing. Assignments are made after the beginning of the fall semester.

Unfortunately, the document does not provide information on specific applications and assignments. It is recommended to refer to the University Housing Assignment Office for more detailed information.
accommodations. If the notice is made within nine days before the beginning of registration, the contract becomes binding two days before the beginning of registration.

Upon written request, the $50 advance payment will be refunded to applicants who are not admitted to the University, and to those who cancel their residence hall contracts in accordance with the terms and conditions set forth in the contract.

Rates
Basic rates for University residence hall accommodations for the 1980-81 academic year are $81.876 for a single room and $1,592 for a triple, with full board. Rates for the several available room and board options vary according to the accommodations, and all rates are subject to change annually.

Family Housing
There are 700 University-operated apartments available to married students or legally defined family units in the Harkway Drive, Harkways Court, Harkways Park, and Parklawn complexes. Rates for 1980-81 range from $119 to $127 per month for one-bedroom units (there are only 41 available at the lower rate) to $154.50 for two-bedroom units, not including gas, electricity, and telephone. All units are unfurnished.

Rates are subject to change annually. Family housing is assigned in the order applications are received. Assignments are contingent on the applicant's meeting all University admission requirements. Applications may be filed before completion of admission, but will not be accepted more than a year in advance.

A $25 advance payment is required for all apartments at the time they are offered for leasing.

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

Fraternities
Nineteen undergraduate and six professional fraternities operate chapter houses at Iowa. Houses accommodate 35 to 45 men.

Undergraduate fraternities are Acacia, Alpha Epsilon Pi, Beta Theta Pi, Delta Chi, Delta Tau Delta, Delta Delta Delta, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Iota Alpha, Phi Kappa Psi, Phi Kappa Sigma, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Sigma Pi, and Tau Kappa Epsilon.

Professional fraternities operating chapter houses are Alpha Chi Sigma (chemistry), Alpha Kappa Kappa (dentistry), Chi Omega (dentistry), Delta Sigma Delta (medicine), Phi Beta Sigma (medicine), and Psi Omega (dentistry).

Sororities
The 23 national sororities active at Iowa are Alpha Chi Omega, Alpha Delta Pi, Alpha Phi, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Kappa Gamma, Pi Beta Phi, and Zeta Tau Alpha.
Financial Aid

All financial assistance available to University of Iowa students from general University funds is administered by the University’s Office of Student Financial Aid. Students may receive aid in the form of scholarships, grants, loans, and/or part-time job placement.

Exception for merit awards based solely on achievement, all assistance administered by the Office of Student Financial Aid is awarded on the basis of demonstrated need.

Application Procedures

To be considered for aid, the student must complete all University admission application procedures, must be accepted for admission to the University, and must submit a family financial statement through the College Scholarship Service (Box 380, Berkeley, CA 94701) or ACT Financial Aid Services (Box 1000, Iowa City, IA 52243), requesting that a copy of the statement be sent to the University.

When it receives a copy of the statement, the Office of Student Financial Aid supplies the applicant with instructions and forms for applying for aid at the University.

Exhibit for a few designated aid programs requiring special applications, the student may submit only one application each year to be considered for all forms of assistance administered by the Office of Student Financial Aid.

The application deadline is March 1.

The Presidential Scholars’ Program

The University annually awards $1,000 Presidential Scholarships, renewable for a maximum of four years of University enrollment, to ten Iowa high school students in recognition of their outstanding academic achievements. All other nominees for recognition in the Presidential Scholars’ Program receive $100 Dean’s Scholarships for the freshman year of University enrollment.

National Merit Scholarships

The University sponsors a number of National Merit Scholarships for entering freshmen who have participated successfully in the National Merit Scholarship competition. Based on financial need, these awards range from $250 to $1,500 per year and are renewable for a four-year period.

Freshman Honor Scholarships

Enrolling freshmen who qualify for participation in the University’s Honors Program by achieving a composite ACT score of 28 or above are recognized as Freshman Honor Scholars and receive $100 Freshman Honor Awards.

Transfer Honor Scholarships

Community college students transferring to the University with a 3.25 grade-point average or above qualify for $100 honor Scholarships.

General Scholarships

To qualify for general scholarship assistance, an entering freshman must apply for financial assistance, show a need for assistance, and either achieve an ACT composite score of 28 or above or rank in the upper 10 percent of his or her high school class. An upperclassman or transfer student must have at least a 3.0 cumulative grade-point average to qualify for an initial scholarship award, and must
maintain at least a 2.75 average to continue the scholarship.

LaVerne Noyes Scholarships
Noyes Scholarships, covering basic fees in the colleges of Business Administration, Liberal Arts, Nursing, and Pharmacy, are available to United States citizens directly descended from army or navy veterans of World War I. Awards are based on need and scholastic achievement. Special application forms are available from the Office of Student Financial Aids.

Basic Educational Opportunity Grants (BEOG)
Students applying for University financial aid should also apply for entitlement to federal BEOG assistance. The United States Office of Education determines eligibility for a BEOG award. The maximum award is $1,600 per academic year, minus the amount of the applicant's computed family contribution. The student may use his or her CSS or ACT financial statement to apply for BEOG eligibility, or may obtain a BEOG application form from any high school or from any college or university financial aid office.

Supplemental Educational Opportunity Grants (SEOG)
The SEOG program provides federal aid to students with exceptional financial need. The maximum grant is $1,000 per academic year or one-half of the student's academic-year expenses, whichever is less. The University must match the amount of the SEOG aid. There are no specific academic requirements for an SEOG award, but the applicant must show academic or creative promise and must be enrolled at least half-time. No special 4-scholarship is required.

National Direct Students Loans (NDSL)
The NDSL program is the University's largest source of long-term student loans. Undergraduates may borrow up to $1,000 a year and $8,000 over all, graduates up to $2,500 a year and $10,000 over all. NDSL assistance is available to students who are citizens or permanent residents of the United States and who are enrolled at least half-time. Repayment at 3 percent interest begins nine months after the recipient ceases to be at least a half-time student.

Guaranteed Student Loans
Under either the Iowa Guaranteed Student Loan Program or the Federally Insured Student Loan program, undergraduate students may borrow up to $2,500 a year, graduate students up to $8,000 per year. The student negotiates the loan directly with a commercial bank, credit union, savings and loan association, or other eligible lending institution, and begins repayment at 7 percent interest, when he or she ceases to be at least a half-time student.

Health Professions Scholarships and Loans
This program assists United States citizens and nationals studying fulltime to be doctors of medicine, dentistry, osteopathy, optometry, podiatry, or veterinary medicine, or toward degrees in pharmacy, nursing, or allied health professions. Amounts available depend on federal funding. Loan recipients make repayment arrangements with the University's Student Loan Accounting Office when they graduate or terminate full-time registration. The interest rate is 7 percent.

Law Enforcement Education Grants
Grants of up to $400 per semester for actual tuition and book costs are available to in-service law enforcement personnel enrolled at least part-time in law enforcement studies. A special application is required. Forms are available from the Office of Student Financial Aid.

Part-Time Jobs
More than half the students attending the University have part-time jobs. Most of the students who have part-time jobs secure them through the Office of Student Financial Aid. The most numerous opportunities for part-time work are in University food services, hospitals, and libraries. Hours range from 10 to 20 per week. For beginning students, the recommended maximum is 12 hours per week.

Work-Study
The federal College Work-Study Program provides part-time work through the Office of Student Financial Aid, to expand employment opportunities for students who must meet part of their educational expenses with their own earnings. As far as possible, Work-Study jobs are arranged to give students work experience related to their educational goals. Work-Study employees may work an average of 20 hours per week.

Other Sources of Aid
For information about departmental financial aid, the student should inquire at the office of the academic program in which he or she is interested.

The resource room of the University's Division of Sponsored Programs is devoted entirely to information on student aid available from such non-university sources as foundations and professional associations. Most of this aid is for graduate study, but some is available to undergraduate students.

Information about financial assistance for educationally, economically, and/or culturally disadvantaged students is
available from the University's Department of Special Support Services. Information about financial assistance for physically handicapped students is available from the University's Office of Services for the Handicapped. Information about financial assistance for veterans of United States military service is available from the University's Office of Veterans Services. Information about Social Security educational benefits for children of deceased, disabled, or aged is available at all Social Security offices. Information about Education Aid to War Orphans is available from the Iowa Bonus Board (State House, Des Moines, IA 50318). An itemized list of the University's financial aid sources is available from the Office of Student Financial Aid.
The University of Iowa Health Center

The University of Iowa plays a major role in the preparation of health professionals for Iowa and the nation. In its Health Center are found the accredited programs, clinical facilities, and service agencies involved in preparing students and practitioners to serve a wide spectrum of human health needs, ranging from basic first aid to the most advanced diagnostic and treatment procedures, and the search for entirely new knowledge.

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

It shares many skills off campus through cooperative programs with other Iowa colleges and community colleges, and through a variety of continuing education programs for health practitioners—many of whom also come to the Iowa campus to update their knowledge through conferences, clinics, and “refreshers.”

Programs, faculties, and courses of the colleges of dentistry, medicine, nursing, and pharmacy are described elsewhere in this Catalog. Other health center units and related programs are described below.

The University of Iowa Hospitals and Clinics

Director and assistant is the president for health services: John W. Galbraith.

Associate director: Mary E. Fuller

Assistant in the director: Douglas H. Williamson

Assistant directors: John H. Bally, Duane Roseman

Assistant to the director for legal services: Robert D. Miller.

Administrative residents: Dr. Wendell G. Swanson, Anesthesiology; Dr. Donald B. Oates, Cardiology; Dr. John S. Streets, Dermatology; Dr. Robert G. Nelson, Family Practice; Dr. Frederick A. Taylor, Internal Medicine; Dr. Maurice W. Van Allen, Neurology; Dr. Ray M. Pfeifer, Obstetrics and Gynecology; Dr. F. D. Roet

Ophthalmology: Dr. Raymond L. Carpenter, Orthopedics; Dr. Brian McEachree, Otolaryngology and Maxillofacial Surgery; Dr. George D. Fink, Pathology; Dr. Fred Smith, Pathology; Dr. George Wilson, Pathology; Dr. Edward A. Franklin, Radiology; Dr. Stanley Ziffman, Surgery; Dr. David A. Culp, Urology.

Largest university-owned teaching health-care complex in the nation, The University of Iowa Hospitals and Clinics is the clinical base of graduate and undergraduate studies for thousands of students in the health disciplines, including medicine, dentistry, nursing, pharmacy, hospital administration, physical therapy, vocational training, pastoral studies, and social work.

University hospitals and clinics sponsor residency programs in which 500 physicians, dentists, and pharmacists gain advanced clinical knowledge and skills in the health care specialties they have chosen as a part of their education.

There are 1,053 beds in the hospital complex, accommodating some 40,500 admissions annually. In addition, 51 specialty clinics accommodate another 315,000 ambulatory patients each year. Nearly 18,000 major surgical procedures are performed annually in the hospital's 20 major operating rooms. Approximately 3,000 infants are delivered every year. Highly specialized health services—for example, the burn unit, heart catheterization facilities, neonatal intensive care unit—are easily
The Bureau of Dental Health Education

The Bureau of Dental Health Education is sponsored jointly by the Iowa State Department of Health, which provides personnel, payroll, and office supplies, and the University, which provides space and equipment.

The bureau's primary purpose is to promote a program of dental health education and disease prevention in the public and parochial schools of the state. Senior dental hygiene students from the University conduct team programs with the public health dental hygienists of the Iowa State Department of health. These programs include instruction in oral hygiene, good dental health practices, and nutrition as related to dental health. The bureau also supplies dental referral cards to schools to remind parents of the need for regular dental care for children.

Health Sciences Library

The Health Sciences Library serves the combined information and research needs of the colleges of Dentistry, Medicine, Nursing, and Pharmacy, and the Department of Speech Pathology and Audiology. The largest of the deparments in the university library system, the Health Sciences Library contains over 150,000 volumes and receives more than 2,700 periodicals. In addition to providing ample space for these collections, the interior allows for enough reading and study space to accommodate approximately 1,100 people. Special features of the library range from computerized access to the latest health sciences literature, via MEDLINE and other data bases, to the rare books (some dating back to the fifteenth century) in the John Martin Rare Book Room.
Health Services Research Center
See "Research Activities" section of the Catalog.

Iowa Mental Health Authority
The Iowa Mental Health Authority is a state agency affiliated with The University of Iowa College of Medicine and located at The University of Iowa Oakdale Campus. The primary function of the authority is to provide state-level support for Iowa’s 32 community mental health centers, which are private nonprofit corporations. The authority provides consultation, staff development, assistance in information management, standards development and evaluation, and research in support of services for these centers. The authority consults with communities about developing local services, performs liaison and planning activities with other local, state, and federal programs in the mental health delivery system; and provides consultation on federal mental health construction and staff grants through the National Institute of Mental Health.

Oakdale Campus
Located seven miles northeast of the health center, the 825-acre Oakdale campus includes an alcoholism treatment unit, physiology and pediatrics research laboratories, the Institute of Agricultural Medicine, research animal care facilities, a model office for family practice, a model rural health center, and University House, which provides facilities and support for faculty research and curriculum development. Among the several policy research components of University House are the Health Services Research Center, Gerontology Center, and the Institute of Child Behavior and Development.

Psychiatric Hospital
Part of the University Hospitals system, Psychiatric Hospital contains clinical and research laboratories in neuropathology, biochemistry, and psychology. The electroencephalographic laboratories serve the entire University of Iowa Health Center.

University Hygienic Laboratory
Laboratory staff members perform a variety of diagnostic, surveillance, training, and consulting functions in such areas as bacteriology, parasitology, industrial hygiene, serology, virology, health physics, radiation chemistry, water and air pollution, drinking water analysis, pesticide and herbicide toxicology, mineral analysis, and disease surveillance. The laboratory provides virological and aerological diagnostic services for The University of Iowa Hospitals and Clinics and Strokes.

State Services for Crippled Children
At all health clinics conducted annually in communities throughout the state, and at University of Iowa clinics, State Services for Crippled Children (SSCC) provides Iowa residents under age 21 with diagnosis and evaluation services in pediatrics, orthopaedic surgery, audiology, speech pathology, ophthalmology, clinical and educational psychology, dentistry, and ophthalmology. This helps communities sponsor child health centers in which a number of new health programs are conducted. It administers demonstration services on special health problems related to handicaps such as muscular dystrophy, mental retardation, phenylketonuria, and prevention of coronary heart disease; and institutionalizes a University of Iowa graduate training program in audiology and speech pathology.

University Hospital School
A University-affiliated facility dealing with the problems of developmentally disabled children and young adults, the University Hospital School provides services involving medicine, dentistry, nursing, nutrition, speech and audiology, physical and occupational therapy, activity and music therapy, psychology, social work, special education, physical education, prevocational, and vocational activities.

The hospital school's residential program provides educational and therapeutic services for children judged to require services not available in the local community; the goal of the program is to return the children as quickly as possible to their home communities and schools.

The day program provides special education, therapy, and functional training for mentally retarded children and young adults who live in the Iowa City area.

The hospital school's training activities include pre- and in-service lectures, workshops, practica, and seminars for care providers who work in other facilities or community programs.

The school cooperates with the State Developmental Disabilities Council and other state agencies in providing technical assistance for their programs.

The hospital school's Child Development Clinic serves the learning-disabled child, the severely dyslexic child and his or her family, and the child with selected metabolic disorders.

The hospital school houses the University hospitals' genetics and biochemical laboratories, which it uses extensively in its research, training, and service programs.

University Speech, Language, and Hearing Clinic
Located in the Wendell Johnson Speech and Hearing Center, the clinic provides out-clinic evaluation and consultation for individuals with speech, language, and/or hearing problems; day-clinic rehabilitation or rehabilitation programs for persons who can come to the clinic for such services; a summer residential program for children with speech, language-learning, hearing, and/or reading problems; and training for
Iowa City Veterans Administration Medical Center

Medical students and residents receive much of their clinical training at this 336-bed hospital. University of Iowa Health Center facilities based here include laboratories for the transplantation program, highly specialized laboratories in nuclear medicine, and special units for the study of metabolic and gastrointestinal diseases. The Veterans Administration Medical Center also offers unique training opportunities in clinical pharmacology, gastroenterology, cardiology, nephrology, and applied immunology.
Research Activities

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

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

The Office of the Vice-President for Educational Development and Research maintains an overview of the many 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 has an interlocking relationship with the Graduate College, because of the all-University character 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 ten faculty members with widely recognized personal 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 sciences and the humanities, and two from the faculty at large. The council gives regular consideration to such matters as the establishment of general policies with respect to the University's research and creative efforts, the review of policies and procedures concerned with securing and allocating funds for support of research and creative activity, and additional matters related to the general research and creative functions of the University and the health of basic scholarship on the campus.

Programs

With the advice of the University Research Council and other appropriately involved officers and committees of the University, the Office of the Vice-President for 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 efforts of junior faculty (other than those in the colleges of Medicine and Dentistry) who wish to do health-related research. To qualify, the faculty member must hold a full-time appointment as instructor or assistant professor. The funds may be used for any purpose which will assist the faculty member in conducting an initial exploration of a hypothesis which he or she believes may lead to the development of a full-fledged program of research.

Incidental Grants

Limited funds are also available in the Office of the Vice-President for Educational Development and Research for small grants to faculty members to cover the costs of materials, supplies, equipment, proposal writing, clerical and related assistance for specific research projects; for faculty travel related to specific research projects or for the purpose of acquiring skills, knowledge, or techniques which will enhance research at the University; and for honoraria and expenses of visiting lecturers.
Transmission Electron Microscopy (TEM) Facility
Equipment includes high resolution electron microscopes, an automatic tissue processor, glass knife makers, diamond knives, ultramicrotomes, a digital image analysis system, vacuum evaporators, light microscopes, cameras, stages, and stereomicroscopic darkrooms. The facility also provides all solutions and supplies necessary for investigations involving ultramicroscopy including specialized staining and embedding techniques, negative staining, metal coating, autoradiography, enzyme-cytochemistry, immuno-

cytochemistry, and in-epiph, sample preparation for scanning electron microscopy and freeze fracture, and other procedures. A modern library containing texts and reviews of various applications of TEM is also available. The facility is intended to serve both the experienced and novice investigator and to provide training for those who need it. It is located in the Basic Sciences Building.

Flow Cytometry Facility
A laboratory for flow cytometry is located in the Medical Laboratories of the College of Medicine. The facility’s B-

D FACSFAC is a fluorescence-activated cell sorter with additional applications in the fields of cell biology, immunology, endocrinology, hematology, and cancer. The flow cytometer causes single cells to flow through a laser beam (ultrasonic wave) at rates up to 6000 cells per second. Fluorescence in one or two spectral regions, or fluorescence polarization, and forward angle light scatter are measured for each cell. Data is presented as two- or three-

dimensional plots and can be stored on computer disc memory. The system can also sort viable cells on the basis of any optical signal, and maintain sterility.

Biological support equipment for sample preparation is available within the facility. Many fluorochromes, enzymes, and reagents are provided, along with staining procedures. A tissue culture microscope and a fluorescence microscope with phase are available for sample observation.

Educational tours through the facility are given upon request. Frequent users of the FACSFAC will be instructed in data analysis and display, if desired. Consultation with the director concerning flow cytosat in-syntor for projects, or propose is provided.

Scanning Electron Microscope (SEM) Laboratory
The SEM Laboratory provides facilities and technical assistance to research programs involving the use of a scanning electron microscope. Located in the Zoology Building, the laboratory is equipped with a JEOL JSM-35C instrument. Rotary cold storage and gas flow lock systems were recently added. A Balzers freeze-fracture, freeze-etch apparatus is available, with programs involving investigations into the organization of biological membranes. The laboratory includes a vacuum evaporator for specimen coating as well as a low-vacuum drying apparatus for biological tissue preparation.

Computing Center
The Gerard P. Weir Computing Center provides research and instructional computing facilities to all students, faculty, and staff of the University. The center maintains systems capable of an extensive variety of applications, and provides network connections with off-campus facilities. It has a large number of terminals, both batch and interactive, conveniently distributed around the campus. The center provides educational and consultative services to users. Although the center is an entity distinct from the Computer Science Department, there is an interchange of students, faculty, and ideas between the two staffs.
Sponsored Programs

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 post-doctoral fellowships. Staff members are available to host potential funding agencies, assist in the preparation of budget and cover material, and give solicitations to achieve effective organization and technical correctness in an application. The staff also assists in processing an application through the University and in locating the appropriate contact in the prospective donor's office. After an award is made, it provides monitoring and advisory services for matters other than expenditure accounting.

University House

University House began in 1977 as a program directed to three separate but related missions. The first and most important is faculty development in general. To help faculty in their professional growth and advancement, the University House provides, on the Oakdale campus, an environment free from distractions, in which faculty members can work together—on scholarly tasks in a congenial, supportive setting. It is also a place in which scholars from different disciplines can meet in easy interchange for mutual stimulation.

University House sponsors many public lectures and conferences, visits by distinguished faculty from other campuses, and faculty seminars on a wide variety of topics. Faculty members in all disciplines are eligible for appointment and participation in University House activities. Thanks to a large grant, University House is also able to support research and other educational development activities jointly pursued by faculty members from the University and from the independent, four-year colleges of Iowa. In addition, to promoting faculty development in general, University House seeks to bring together university centers, institutes, committees, and other groups into intercollegial, interdisciplinary arrangements that foster the acquisition of external support for research, education, and appropriate service.

University House also assists the Office of the Vice President for Educational Development and Research in its role as a broker in important, joint-research efforts that serve to resolve policy concerns of the state government and the people of Iowa.

University House has nearly six thousand square feet of newly furnished space in the Oakdale Hospital, including private faculty offices, several conference room, and project rooms, and a library. Library services are available. Located in the same building are a cafeteria, a hallway, a high concentration room, and a copy center. The medical center connected to the University Computer Center, a terminal with text-editing capabilities, and a full-time assistant for computer services, Photocopying and book delivery services are also available from the University Libraries. Hour-long campus service connects University House with the main campus.

Included as part of University House are the following:

Child Behavior and Development

Activities of the Institute of Child Behavior and Development (ICBD) are focused at this time on the problems of child abuse. Through its Center on Child Abuse, the ICBD provides services and materials to professionals on a regional basis to aid them in diagnosing and treating the problem of child abuse.

Genetic Counseling Project

The purpose of the multidisciplinary, interdisciplinary Genetic Counseling Project is to promote curricular development, research, and services which relate to the health needs of nonmetropolitan areas. The Center consists of a multidisciplinary core of scholars drawn from the colleges of Medicine, Dentistry, Nursing, Pharmacy, Education, Engineering, Business Administration; several social science departments in the College of Liberal Arts; University Hospitals and Clinics; and the Veterinary Administration Medical Center. These individuals have a mutual interest in improving the health services delivery system in Iowa, the Midwest, and the nation as a whole.

Urban and Regional Research

The primary objectives of the Institute of Urban and Regional Research are to broaden knowledge in the area of urban and regional studies, to enrich the teaching programs in participating departments, and to initiate and carry out interdisciplinary research projects. It pursues these goals through the acquisition of grants, contracts, and through other on-campus activities, by providing a liaison between faculty and students in both basic and applied urban and regional research activities.

Video Center

The University Video Center provides high-quality video services and facilities including those necessary to sustain and promote research activities. It also coordinates video equipment purchase and inventory and promotes efficient University support of campus video. Toward this end, the center has the personnel and facility resources to assist units in the purchase of equipment and supplies, and in production and postproduction activities. Additionally, the center provides centralized video maintenance and system design and maintains guidelines for equipment standardization.

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 context of research at the University:
Institutes
Dow's Institute 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 Entrepreneurial Management
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 for School Executives
Contact the Division of Educational Administration in the College of Education for information.

Institute of Agricultural Medicine
See "Preventive Medicine and Environmental Health" in the "College of Medicine" section of the Catalog.

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

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

Centers
Agricultural Law Center
See the "College of Law" section of the Catalog.

Cancer Epidemiology Center
Contact the Department of Preventive Medicine and Environmental Health in the College of Medicine for information.

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

Cardiovascular Center
See the "College of Medicine" section of the Catalog.

Center for Educational Experimentation, Development, and Evaluation
See the "College of Education" section of the Catalog.

Center for Materials Research
Contact the Division of Materials Engineering in the College of Engineering for information.

Center for Research in Interpersonal Behavior
See "Sociology" in the "College of Liberal Arts" section of the Catalog.

Center for Research on Psychological Disorders of Children
See the "College of Medicine" section of the Catalog.

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.

Diabetes Center
See the "College of Medicine" section of the Catalog.

Health Services Research Center
See "University House" in this section of the Catalog.

Iowa Center for Communication Study
See "Journalism" in the "College of Liberal Arts" section of the Catalog.

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

Statistical Consulting Center
See "Statistics" in the "College of Liberal Arts" section of the Catalog.

Toxicology Center
See the "College of Medicine" section of the Catalog.

Laboratories
Iowa Lakeside Laboratory
See "Iowa Lakeside Laboratory" in the "College of Liberal Arts" and "Continuing Education" sections of the Catalog.

Laboratory for Political Research
See "Political Science" in the "College of Liberal Arts" section of the Catalog.

Radiation Research Laboratory
See "Radiation Research Laboratory" in the "College of Medicine" section of the Catalog.

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

Clinics
Child Development Clinic
Contact the Department of Pediatrics in the College of Medicine for information.

Lipid Research Clinic
Contact the Department of Internal Medicine in the College of Medicine for information.
The Iowa Center for the Arts

located along the west bank of the Iowa River on the University of Iowa campus, the Iowa Center for the Arts is a major cultural resource not only for the University community, but for the people of the state and region. This is the University dream of many generations: to bring the arts together in a single campus setting, near the geographical heart of the University.

The physical center comprises many of the academic units of the Division of Fine Arts in the College of Liberal Arts, together with the Museum of Art, E. C. Mabel Theatre, Cappi Recital Hall, and Hancher Auditorium, the center's newest and largest showcase. In addition to activities housed in these facilities, various educational programs in other parts of the campus reflect the University's strong commitment to artistic creativity.

Financial support from many sources, both public and private, is reflected in the physical structures and 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 ever more important role in the quality and diversity of the center's services to the people of Iowa.

School of Art and Art History

The University of Iowa School of Art and Art History has been a pioneering force in art in America for more than half a century. The original art building dates from 1926. Major additions were added in 1968-69, greatly extending classroom and studio spaces and providing a new wing for sculpture.

A small gallery within the building, used primarily for the display of works by students and visiting artists, is named for artist Eve Drewelow, who in 1924 became the first recipient of the Center of Arts degree in studio art at the University of Iowa.

The school's Corboree Gallery, located in South Hall (the old Music Building), features exhibitions of new and experimental work created at the University of Iowa by major visiting artists. The gallery presents lectures and performances which emphasize new concepts and directions in contemporary art.

Museum of Art

The University of Iowa Museum of Art provides an outstanding example of the enrichment of the arts through generous private support. In the early 1900s, Owen and Leone Elliott of Cedar Rapids offered the University their extensive collection of nineteenth- and twentieth-century paintings, prints, antique silver, and rare jade, provided that a museum could be built to house it, along with the University's existing and future acquisitions of art.

In response to this challenge, more than 2,000 individuals and business firms contributed toward the museum's construction cost. The museum opened in 1926 and quickly earned recognition as one of the nation's finest university museums.

A gift from industrialist Roy Carver of Muscatine made possible the construction of a major addition opened in 1976. With the Carver Wing, the museum has 40,000 square feet of exhibition space in 16 galleries, plus the behind-the-scenes work areas essential to support the activities of a major museum.

Each year thousands of visitors, including school children of all ages, visit the museum to see displays of the permanent collections and traveling exhibitions. The permanent collection of
more than 5,000 works of art include the Elliott Collection, nineteenth- and twentieth-century sculpture, drawings, photography, and African and pre-Columbian art. The Stanley Collection of African sculpture, currently on extended loan to the museum, is a promised gift from Max and Betty Stanley of Muscatine. The addition of this collection gives the museum one of the leading university-based African art collections in the country.

The Print Study Room houses more than 2,000 prints representing major artists. The Lasansky Room houses a collection of prints and drawings created by printer Maurice Lasansky, longtime professor of art at the University.

University Theatre

University Theatre houses the Division of Dramatic Art of the Department of Communication and Theatre Arts. It is the home of the Illinois Theatre Company, the University's permanent theatre company. Major productions each year include such works as Death of a Salesman, Macbeth, and One Man, Two Guvnors.

Theatre Arts building is a short walk from the main campus, and is equipped with a state-of-the-art sound system and lighting equipment.

School of Music

The School of Music at the University of Iowa is one of the leading music programs in the United States, offering undergraduate and graduate degrees in music performance, music education, and musicology.

The School of Music is home to a number of renowned faculty members, including world-renowned pianist and conductor Yefim Bronfman, and internationally acclaimed composer and conductor James Newton Howard.

The University of Iowa School of Music is proud to host a diverse array of events throughout the year, including concerts, recitals, and master classes, as well as frequent collaborations with other departments and institutions across campus.

Two electronic music studios provide a wide range of technical capability for creative audio-musical forms. In Video/Laser II, the school has the most advanced laser deflection system of any university, utilizing laser beams in brilliant colors to produce visual analogues to sound. Outstanding recording facilities include the various performance spaces of the School of Music/Hancher Auditorium complex with a central recording studio in the School of Music.

Hancher Auditorium

Hancher Auditorium, which opened in 1972, is a regional cultural resource of the first magnitude. It seats an audience of 2,864. In its first seven seasons, the auditorium hosted audiences totaling more than a million people.

In addition to performances by the various units of the Iowa Center for the Arts each year, leading artists from throughout the world appear on the Hancher stage—solos, ensembles, theater and dance companies, major orchestras, and many more.

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

For students of the various theater arts, the auditorium has splendid scene and costume shops, nearly 30 sets of rigging for scenery changes, and one of the most sophisticated lighting control and sound systems in the western United States.

Hancher is an on-the-premises concert hall.
The stage itself is an uncommon educational resource. Its proscenium is 70 feet wide. With its adjacent wings, the stage area is 150 feet long, 55 feet deep, and eight stories high. Mobile units of a concert shell may be quickly installed on stage for various concert requirements.

Across the back of the auditorium’s main floor, sound-isolated viewing rooms make it possible for small class groups to observe and discuss performances in progress.

Hancher Auditorium reflects a new dimension in the University’s educational and cultural services to its students and to the people of Iowa.

Arts Center Outreach

Cultural projects and programs which utilize the talents of faculty or student artists and other resources of the Iowa Center for the Arts are available to Iowa communities through the Arts Outreach Program. Designed to reach new audiences and to serve special constituencies (schools, centers for senior citizens and the handicapped, service organizations, special interest groups, etc.), this program is intended to share the University’s cultural resources as widely as possible throughout the state.

Concurrent with the University’s resources, arts outreach projects are tailored to local needs and interests. In addition to programming throughout the state, the Arts Center Outreach office schedules on-campus conferences, workshops, and educational projects.

Dance

The University of Iowa Dance Company is centered in the dance division of the Department of Physical Education and Dance. The company appears in its own productions during the year and participates with other units of the Iowa Center for the Arts in interdepartmental projects and programs. The company is enriched by the frequent campus visits of professional dancers, choreographers, and leading dance companies of this and other countries. The professional visitors come not only to perform but often to provide lecture demonstrations and classes.

Broadcasting and Film

The Television Center and the studios of radio stations WHO-AM/FM are key classrooms and laboratories for students in the broadcasting and film division of the Department of Communication and Theatre Arts. The major community serves as the “on-location” laboratory for students in this division.

The Writing Programs

A longtime program of special distinction in the Department of English, the writers workshops encompass fiction, poetry, translation, and playwriting. The workshops provide opportunities for talented writers to work and learn with established poets, novelists, and playwrights.

The international Writing program brings accomplished writers of many nationalities to the University for extended periods of new writing and translating their works into English and other languages. These writing programs are renowned in many countries, and have won widespread private support from foundations, business corporations, individuals, and the U.S. State Department.

Windhover Press

The skills of making books by hand—stitching handmade paper, hand-drawn illustrations, hand-set type, hand-operated presses, hand-binding—may be learned in the workshop of the Windhover Press in the School of Letters.

The Windhover Press is one of the nation’s small companies of distinguished hand presses. Its limited editions are frequently cited for their excellence by the American Institute of Graphic Arts, whose prestigious companions involve all of the major publishers in the country.
General Services

Children's Reading Clinic

The Children's Reading Clinic in The University of Iowa College of Education trains classroom teachers, supervisors and consultants, school psychologists, and counselors to assess the reading abilities of school-age children, and to recommend and use instructional materials which are suited to their needs and interests.

During the academic year the clinic teaching program includes practicums in Iowa City schools and in an on-campus diagnosis and treatment center. During the summer the clinic is in the Wendeen Johnson Speech and Hearing Clinic, where the staff provides reading instruction for children who attend the Summer Residential Program for therapy in speech, hearing, and reading. Student clinicians do all Children's Reading Clinic teaching under the close supervision of clinic staff members.

International Education and Services

The Office of International Education and Services (OIES) is the focal point for University international education activities. It works in the areas of international studies, international educational exchange, and technical assistance.

The OIES seeks to promote development of and cooperation among the various aspects of international studies—foreign language and area studies, comparative and topical studies, and foreign language departments. It also assists faculty and students seeking grants or fellowships for study or research that has an international perspective.

The OIES seeks to encourage the development of formal linkages between University of Iowa departments and programs and their counterparts in foreign institutions by means of technical cooperation and faculty exchange programs.

The liaison officer for the Midwest Universities Consortium for International Activities (MUCIA) is located in the OIES and serves to involve The University of Iowa faculty in MUCIA activities.

Foreign student advisers in the OIES provide assistance to foreign students, faculty members, and professionals on immigration and other matters relating to international educational exchange. The International Center, a facility operated by the OIES, is open to all University and Iowa City community members who have international interests. Facilities and programs are designed to encourage the interaction between people of all cultures.

Additional OIES activities involving students are described in the Catalog section on "Student Services."

Museum of Natural History

To meet the needs of the general public and the various departments of the University, the Museum of Natural History provides a repository and the proper care for specimens which come to the University either by gift or through the efforts of its own collectors. The museum faculty also designs and executes new exhibits of educational value and offers instruction in the conceptual and technical phases of exhibit preparation and the general operational procedures of small science museums. Habitat exhibits of North American mammals include the bison, antelope, mountains, fox, moose, and beaver. The Lewis Island Cycloramia is a large and well-known bird habitat exhibit comprising a complete representation of a bird island of the Hawaiian group.
Other habitat exhibits include the Bering Sea, Louisiana Swamp, Fall Migration, and Cranes on the South Dakota Prairie. The crane exhibit includes both the sandhill crane and the rare whooping crane as they appear on the prairie during migration.

The major invertebrate phyla are represented in several exhibits and include such familiar groups as the arthropoda, mollusks, echinoderms, and coelenterates.

Ethological exhibits in the museum present materials from many parts of the world, Indian and Eskimo materials, including beadwork and carved ivory received in the late nineteenth century, are exhibited. The ancestry of human through 12 million years of time is portrayed in a display featuring replicas of fossil remains from Africa, Asia, and Europe.

Several displays relate to the geology of Iowa and include typical fossil specimens.

**Old Capitol**

Old Capitol is the central landmark and symbol of the University. It was the capitol of the Territory of Iowa from 1842 until 1846 and the capitol of the State of Iowa from 1846 until 1847, when the government moved to Des Moines and gave the "old" capitol to the University as its first building.

Various University offices and departments have been located in Old Capitol through the years, and it housed the office of the University president continuously from 1880 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 returned to the 1860s and 1880s. Two were restored to the 1820s, in represent the University years. Old Capitol was reopened in 1978 as a "living museum." Guided tours are conducted daily without charge.

**Overseas Study and Travel Abroad**

The Office of Overseas Study and Travel Abroad helps faculty members design study abroad programs, facilitating arrangements for program publicity, transportation, orientation, and logistics.

The office offers individual counseling on all aspects of travel from planning to completion, and provides free materials designed specifically for the University community.

The office maintains an extensive reference collection which includes foreign university catalogs, information on special collections and libraries overseas, lists of faculty and undergraduate and graduate programs at foreign universities, and study abroad programs offered by domestic and foreign institutions of higher learning.

The office assists students in selecting study abroad programs to complement their on-campus academic programs and to assure correct credit arrangements.

**University Relations**

The Office of University Relations seeks to foster understanding of, participation in, and support of University aims and activities through effective two-way communication within the University community and between the University and its key public. The office handles management responsibilities for the Office of Public Information, the Department of Publications and Printing Service, and The University of Iowa Press. In addition, the office of University Relations seeks to maintain an effective information program through use of internal and external media, and provides a liaison between the central administration and appropriate University and governmental groups.

University Relations publishes The University of Iowa Spectator, Faculty and Staff Newsletter (FY), Campus Correspondent, Calendar of Events, and Programme; provides campus tours and other services for University visitors and guests; provides copy and photos for some University publications; and serves as the executive office of the Parents Association.

**Public Information**

The Office of Public Information includes Humanities/Science News Service, Health Center Information and Communication, Men's Sports Information, Women's Sports Relations, Activity Center Relations, and Broadcast News Services. These units supply news, photos, and information to print and electronic media; gather and prepare informative material for special and general interest periodic; help prepare special University publications; answer requests for information; and assist writers, photographers, and broadcasters who visit the campus.

**Publications and Printing Service**

The department is responsible for providing services to meet official printing and publications needs of the University. It also assists in coordination of programs in organizations in planning, editing, and designing publications. Printing Service is the production arm of the department, with a printing plant and bindery. Copy centers located strategically about the campus provide quick, in-house reproduction services. The department also oversees Campus Stores, an on-campus distribution agency which sells manuals, lab notebooks, and other special/installation materials created by the faculty. The department is responsible for University compliance with the printing regulations of Iowa, including provision for obtaining competitive bids on printing not done in the University Printing Service.

**The University of Iowa Press**

The University of Iowa Press was established to publish significant results of scholarly research. The imprint is controlled by the University editorial board, composed of faculty members and students appointed by the vice-president for educational development and research.
Recreational Services

The Division of Recreational Services administers a program of more than 20 intramural sports and recreational activities for all interested University students; offers a wide range of recreational lesson programs in such activities as karate, tennis, golf, yoga, aikido, and gymnastics; and provides informal activities for students, faculty and staff members, their spouses and families. Activities include basketball, badminton, volleyball, soccer, tennis, swimming, handball, paddleball, racquetball, squash, canoeing, golf, archery, weight training, billiards, spaceball, tennis, fencing, and dogging. The Division's Touch the Earth Outdoor Program includes such activities as rafting, parachute jumping, bicycle trips, backpacking, fishing, cross-country skiing, wildlife research, winter camping, kayaking, canoeing, and horseback riding. Bicycles, camping equipment, toboggans, and cross-country skiing equipment are also available for a minimal renting fee.

The University of Iowa Alumni Association

The principal agency through which Iowa students continue their identity with the University after they leave the campus is The University of Iowa Alumni Association. The association was organized in 1867. Its current membership includes University graduates and former students throughout the world. Its continuing objectives are to maintain ties between alumni and the University; to implement programs of service to alumni; to strengthen public recognition of the University as an institution vital to the stability and welfare of the state and the nation; and, through organized alumni effort, to serve the University in strengthening its programs in teaching, research, and public service. The association publishes the Iowa Alumni Review, a bimonthly magazine for association members.

The University of Iowa Foundation

The University of Iowa Foundation was organized in 1956 to help the University obtain the greatest possible educational benefit from private giving. It raises funds for this objective through three major programs: annual giving, capital campaigns, and planned or deferred giving.

The foundation is a private, nonprofit corporation empowered to solicit and receive gifts and bequests, to accept them subject to the conditions imposed on them, and to hold, administer, manage, use, or distribute gifts, bequests, and trusts, all for the benefit of The University of Iowa. The foundation is constantly at work to provide mono funds for student financial aid, faculty development, research, library acquisitions, and programs and projects throughout the University.

University Personnel Service

The University Personnel Service is responsible for meeting the employment needs of individuals and departments for the entire University campus. The office functions in the areas of recruitment, interviewing, screening, testing, placement, and salary and fringe benefit administration for full-time and part-time, permanent and temporary, non-teaching and nonstudent employees of the University. The University Personnel Office also participates in the administration of the Board of Regents Merit System and the Unemployment Compensation Act. It also participates in certain aspects of the academic personnel program, and in payroll record keeping and collecting personal record data for both faculty and staff employees.
The University's Main Library and its 12 departmental libraries contain approximately 2.1 million volumes. About two-thirds of this collection is in the Main Library.

The Art Library contains approximately 51,700 volumes; Binary-Chemistry 59,100; Business Administration, 18,800; Education-Psychology, 117,300; Engineering, 49,350; Gastrology, 28,900; Health Sciences, 160,800; Library Science, 10,200; Mathematics, 51,000; Music, 56,600; Physics, 31,600; and Zoology, 27,300.

The Law Library, which is administered by the College of Law, contains 321,555 volumes.

Special Resources

Main Library facilities include microfilm reading rooms; listening rooms for collections of recorded drama, poetry, and speeches; seminar and conference rooms; a map center; carrels for graduate students; and individual study rooms for faculty members engaged in research.

The Human Relations Area Files consist of full data on a sample of societies throughout the world, and are designed to facilitate comparative studies of social and cultural behavior.

The Leigh Library, brought together by Luther A. Brewer of Cedar Rapids, Iowa, is considered one of the most complete in existence. It contains nearly 2,000 manuscripts and manuscript letters written by Harl or to him by his many famous literary friends, 100 association volumes, and 600 editions of Harl's writings.

The Mark Vanney Memorial Collection of approximately 3,700 volumes is particularly rich in deluxe editions, including many superb bindings made especially for Mrs. Vanney.

The French Revolution Collection includes more than 8,000 political pamphlets, chiefly from the years 1788-1795, supplemented by numerous French newspapers and government publications of the time.

The John Springer Collection on the typography, prints to the University by a long-time Iowa City printer, includes 1,850 volumes of type specimens, books important in printing history, and volumes illustrating the art and progress of printing through the centuries.

The "Ding" Darling Collection comprises originals of nearly six thousand cartoons in which, for more than 40 years, Ding recorded and commented on the economic, political, and diplomatic affairs of the United States. His cartoons are "wholly a pictorial history of this country during the first half of the twentieth century. A subject index to the collection enhances its usefulness for reference and research.

The Ballinger-Lincoln Collection, gathered by Judge James W. Ballinger of Davenport, is one of the best libraries of Lincolniana in the United States. A number of items in it concern John Wilkes Booth and the trial of his fellow conspirators. Another large group contains reminiscences of people who knew Lincoln. Lately, broadsides relating to Iowa and the Civil War period have been added.

The "X" Collection is a gathering of early, rare, or special works on diverse subjects, including books of the fifteenth and sixteenth centuries, early American books, and rare publications, private press books, and selected modern first editions.

The Manuscript Collection includes more than 10,000 individually cataloged letters or manuscript items of English and American authors or historical figures, principally of the nineteenth and twentieth centuries, in addition to 365 inventories of collections of papers, diaries, and correspondence files relating to midwestern economic, political, and agricultural history.
Other special collections include the Harvey Ingham Collection of books dealing with the American Indian; the Levi O. Leonard Collection of manuscripts and documents dealing with railroading in the Midwest; the History of Hydraulics Collection; the Edwin Ford Piper Collection of ballads and folksongs; the Chautauqua Collection, which contains several thousand letters and business documents descriptive of the Chautauqua movement; the Blunden Collection of poetry, biography, criticism, manuscripts, and letters relating to the contemporary English poet, Edmund Blunden; the Iowa Authors Collection, the Map Collection, containing more than 175,000 maps and indexed aerial photographs and nearly 2,000 atlases, gazetteers, and related reference items; and the University Archives.

The John Muir Rare Book Room in the Health Sciences Library houses a collection of approximately 1,500 books on the history of medicine, including a number of incunabula. The nucleus of the collection, which is especially strong in the areas of anatomy and surgery, was donated to the University Libraries by Dr. John Martin, a neurosurgeon from Clarinda, Iowa.
Peoples have many reasons for going to college. Some have specific careers in mind, while others are looking for guidance in seeking careers. Most expect that college will help prepare them for a wide variety of employment, social, and personal developments in their lives.

A liberal arts education is intended to ready students for effective performance in many situations over the course of their lives after graduation. It includes both preparation in specialties and a broad exposure to other areas of learning. Through the wide study of literature and language, mathematics, the physical, biological, and social sciences, and the arts, students may gain a general understanding of the many types of situations and people they will meet after leaving college. Although this education often includes sound preparation for specific jobs, it also nourishes career flexibility by giving students broad bases for responding to changing employment opportunities. As a result, the danger that a graduate may become "locked" into a single unsatisfactory job is reduced.

The kind of flexibility and adaptability mentioned here are built upon an understanding of other cultures and languages, the social and political institutions in American society, communication behavior, and the physical and biological world about us. A liberal arts education includes something called a "general education" because students receive general preparation for the opportunities and problems they will encounter throughout their lives. This approach to education assumes that, because we cannot now foresee all of these opportunities and problems, students are better prepared for the future if they have learned and developed abilities, awareness, sensitivities, and knowledge which will help them generate responses to unexpected events. The College of Liberal Arts attempts to provide this versatility by its combination of major and general educational requirements.

Schools and Divisions

There are seven schools and two divisions in the College of Liberal Arts. The Division of Fine Arts includes the School of Art and Art History, the School of Music, and the Department of Communication and Theatre Arts. The Division of Mathematical Sciences includes the departments of Computer Science, Mathematics, and Statistics. The School of Letters is a federation of the departments of Classics, Asian Languages and Literatures, English, French and Italian, German, Linguistics, Russian, Spanish and Portuguese, and Communication and Theatre Arts; the programs in Afro-American Studies, American Studies, Comparative Literature, and Modern Letters; the International Writing, Translation, and Writing workshops; and the Windover Press. There are also schools of Journalism and Mass Communication, Library Science, Religion, and Social Work.

Liberal Arts Advisory Office

The Liberal Arts Advisory Office functions as an integral part of the Office of the Dean of Liberal Arts. Every undergraduate student enrolled in the college has an academic adviser to help the student with registration and the progressive development of the educational program which will best prepare the student to pursue his or her life goals. Academic advisers are assigned by the Liberal Arts Advisory Office. Students who have declared majors are assigned advisers from their major departments; students who have not declared majors are assigned advisers from the Undergraduate Academic Advising Office. Students in preprofessional programs are assigned.
special advisors from the appropriate professional areas. Students should go to the Liberal Arts Advisory Office to change academic advisors; declare or change majors; and obtain information and advice about graduation requirements, the Bachelor of General Studies and other degree programs, the College Level Examination Program (CLEP), pass-fail, satisfactory-fail, the second-grade-study option, deadlines for various administrative actions (such as dropping or adding courses, canceling registration), probation, dismissal, enrollment, academic discipline, and any other academic matter.

Degrees Offered

The College of Liberal Arts offers the Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.M.), Bachelor of General Studies (B.G.S.), and Bachelor of Liberal Studies (B.L.S.) degrees.

Major Fields

The College of Liberal Arts confers degrees in the following major fields:

- American Studies—B.A.
- Ancient Civilization—B.A.
- Anthropology—B.A.
- Art—B.A., B.F.A.
- Asian Languages and Literature—B.A.
- Asian Studies—B.A.
- Astronomy—B.A., B.S.
- Biochemistry—B.A., B.S.
- Biology—B.A., B.S.
- Botany—B.A.
- Chemistry—B.A., B.S.
- Classics—B.A.
- Communication and Theatre Arts—B.A.
- Communication Studies—B.A.
- Computer Science—B.A., B.S.
- Dance—B.A.
- Dental Hygiene—B.S.
- Early Childhood Education—B.A., B.S.
- Economics—B.A., B.S.

Elementary Education—B.A., B.S.
- English—B.A.
- French—B.A.
- General Science—B.A., B.S.
- Geography—B.A., B.S.
- Geology—B.A., B.S.
- German—B.A.
- Greek—B.A.
- Health Occupations Education—B.S.
- History—B.A.
- Home Economics—B.A., B.S.
- Italian—B.A.
- Journalism and Mass Communications—B.A., B.S.
- Latin—B.A.
- Letters—B.A.
- Linguistics—B.A.
- Literature, Science, and the Arts—B.A.
- Mathematical Sciences—B.A., B.S.
- Microbiology—B.S.
- Music—B.A., B.M.
- Philosophy—B.A.
- Physical Education—B.S., B.S.
- Physics—B.A., B.S.
- Political Science—B.A., B.S.
- Portuguese—B.A.
- Psychology—B.S., B.S.
- Recreation Education—B.S.
- Religion—B.A.
- Russian—B.A.
- Social Studies—B.A.
- Social Work—B.A.
- Sociology—B.A., B.S.
- Speech—B.A.
- Special Education—B.A., B.S.
- Speech and Hearing Science—B.A., B.S.
- Zoology—B.A., B.S.

Interdisciplinary Programs

The program briefly described below are fully described in the section of the Catalog.

Afro-American Studies

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

The program originated in 1969 in courses intended to foster awareness of the role Afro-Americans have taken in the development of the United States, and to promote understanding of the present conditions and concerns of black Americans. Since then, those courses have been organized into a curriculum that includes a program leading to an undergraduate minor in Afro-American Studies, a Master of Arts degree in Afro-American Studies, and concentrations of Afro-American Studies in programs leading to a B.A., M.A., or Ph.D. in American Studies.

Global Studies

The Global Studies Program is a cross-disciplinary study of major world problems. The purpose of the program is to give students an opportunity to examine these problems and their interrelationships, and to focus on one set of problems for more in-depth analysis. The four problem areas are world peace, and security; development; environmental concerns, and global resources and cross-cultural understanding.

Latin American Studies

Students may supplement their undergraduate majors by earning either certification or a minor in the Latin American Studies Program. Focusing on the history, politics, social organization, economy, art, and literature of Latin America, the program draws its faculty from four primary cooperating
departments—Anthropology, History, Political Science, and Spanish and Portuguese—and from several related disciplines. The program is designed to enhance students' qualifications for a wide range of career opportunities in business, communications, government, bilingual-bicultural education, secondary education, community organization, and international agencies. It also provides background for advanced academic or professional degree work.

Literature, Science, and the Arts

The Program in Literature, Science, and the Arts offers a group of team-taught discussion courses on fundamental humanistic topics. Students explore and evaluate important contemporary issues on the basis of their reading in outstanding works. They learn to draw upon books and discussions to define issues and problems and work them through. An L.S.A. major provides a strong background for graduate study in an area of specialization, and for medicine, law, business, and other professions.

Women’s Studies Program

The Women’s Studies Program is a multidisciplinary program in the liberal arts which is engaged in developing a body of knowledge about women in the humanities and social sciences and in helping women contribute to the University community. The term “women’s studies” does not denote segregated education for women, but emphasizes teaching and research about women which is of intrinsic interest to all students. This new academic dimension in education forms a cumulative pattern of learning about women and supplements neglected areas of study. Is the existing curriculum, raises provocative intellectual questions, and widens the quest for truth about the human condition.

Minors

Students graduating from the College of Liberal Arts may earn a minor or minors in any degree-granting department. Every approved program in the college outside of their major department and a notation of the minor will be entered on the student’s permanent record. Requirements for a minor are:

- A minimum of 12 semester hours must be taken in the minor area;
- At least 12 of the 18 must be taken in advanced courses at The University of Iowa;
- No course accepted toward the minor may be taken pass-fail;
- A student must have at least a 2.0 grade-point average on all work attempted in the minor department; and
- The minor is awarded only at the time the student receives the bachelor’s degree.

Students may apply for minors at the same time that they apply for a bachelor’s degree. If eligible, the notation of the minor is placed on the student’s grade report.

If a student, who already has a bachelor’s degree (from The University of Iowa and is still in undergraduate status), complies the requirements for a minor, he or she may apply to the registrar to have the notation regarding the minor placed on the permanent record.

When a student applies for a minor, the application-for-degree form filed with the registrar needs the signature of the major advisor.

The degree-granting programs in early childhood education, elementary education, health occupations education, special education, and dental hygiene, do not offer minors.

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

Some programs in the college which do not offer undergraduate degrees have been granted by the educational policy committee to other minors. Information about program approval is available in departmental offices.

Students who earn a bachelor’s degree in interdepartmental programs, such as general science or others, cannot earn minors in areas falling within the major degree field.

The decision of what is an advanced course is left up to the minor department. Many departments have prepared lists of advanced courses. Students seeking information about courses acceptable for minors should contact the minor departmental office or confer with their major advisor. If departments have not designated any courses as advanced courses, all 100-level courses will be accepted as advanced courses.

The minor may support or relate directly to the student’s minor. In other cases, the minor might allow a student to follow an entirely different and separate interest from his or her major. Students should seek help from their major advisors in planning minor programs.

For further information about the minor program in the College of Liberal Arts, contact the Liberal Arts Advising Office.

Minor in Business Administration

Students in the College of Liberal Arts may seek a minor in business administration. Requirements include probations as well as business courses. The courses listed below satisfy all requirements. Interested students should consult their academic advisor to register for the first seven of these courses before applying for admission to the business program.

- Computer Programming course 3 s.h.
- Course in mathematics numbered 22M:7 or higher 3 s.h.
- Course in statistics numbered 225:B or higher 3 s.h.
- 6E:1:2 Principles of Economics 8 s.h.
- 6A:1 Introduction to Financial Management 3 s.h.
- 5A:2 Introduction to Managerial Accounting 3 s.h.
- 6M:3:1 Introduction to Marketing 3 s.h.
- 8F:15 Introductory Financial Management 3 s.h.
- 6L:81 Administrative Management 3 s.h.
- 6L:47 Introduction to Law 3 s.h.

*Must be taken junior or senior year.

Students complete the remaining courses following their admission to the business minor program in the College of Business Administration. Students must meet the general admission
requirements of the College of Business Administration (see "Program Requirements for Undergraduate Study" in the "College of Business Administration" section of the Catalog) to be considered for admission to the business minor program. Admission to the program is limited, and meeting the minimum standards does not ensure admission.

Minors in Education

Students in the College of Liberal Arts may earn minors in education. For detailed requirements, see the "College of Education" section of the Catalog.

Liberal Arts Minors for Business and Nursing Students

Undergraduate students in the College of Business Administration and College of Nursing at The University of Iowa may earn minors in their colleges by satisfying College of Liberal Arts requirements for minors.

Foreign Studies Certificate

The college's Foreign Studies Certificate program is tailored for undergraduate students who seek to broaden their knowledge of societies other than their own. The program is a supplement to and not a substitute for a major. The chairs of the various language departments serve as advisers to students in preparing for the certificate. After selecting an area or country of interest, students wishing to earn the certificate will be guided by the appropriate chair in choosing a group of courses designed to provide a basic understanding of the area or country. Courses may include work in geography, history, anthropology, art, literature, political science, or other fields offering international studies.

Programs leading to the certificate will include at least 18 semester hours in coursework related to the chosen country or area. In addition, students must fulfill the foreign language requirement for the B.A. in a language appropriate to the chosen country or area. A student who successfully completes a Foreign Studies Certificate program designed by the appropriate departmental chair receives the Foreign Studies Certificate with his or her degree.

Interested students should consult the chair of the appropriate department:

Asian Languages and Literature (India, China, or Japan):
Classical (Ancient Greek or Rome):
French and Italian (France or Italy):
German (Germany or Austria):
Russian (Russia or Eastern Europe):
Spanish and Portuguese (Spain, Portugal, or Latin America):

Academic Career Clusters

The college's Academic Career Clusters Program is designed to help students select majors and/or minors or to build individualized degree programs consistent with their general career goals. All academic advisers of the College Source Book containing sample clusters and plans of study in areas such as corporate communication, publishing, arts management, international affairs, environmental professions, personnel administration, and so on. Each cluster contains lists of courses from throughout the University, organized in terms of competencies required for career areas. Students and advisers can use the cluster designs to develop plans of study within the context of a variety of academic degree programs.

Specializations within Programs

Almost every degree-granting unit in the college offers internal specializations. Some of these are formal divisions or options within departments. For example, broadcasting is offered in the Department of Communication and Theatre Arts, actuarial science is offered in the Department of Mathematics, and fashion merchandising is offered in the Department of Home Economics. The School of Art and Art History and the School of Music have many different tracks leading to bachelor's degrees: studio emphasis, art history emphasis, and art education; music education, music therapy, composition/theory major, and applied music.

Other specializations can be developed with combinations of courses taken from several areas—for example, a specialization in public relations and advertising with courses taken in the Department of Communication and Theatre Arts, the Program in Communication Studies, and the School of Journalism and Mass Communication; and a specialization in management with courses taken in the various social science departments.

For more information on specializations within and between programs, see the program descriptions in this Catalog; the Cluster Source Book; and advisers in the appropriate departments.

Honors Program

The Honors Program is a college-wide plan for exceptionally promising students. Honors students are assigned to special sections in general education courses. Those whose major departments offer honors curricula have opportunities to enhance their studies in honors seminars, independent research, and other special activities, and to earn the baccalaureate degree "with honors." Entering freshmen whose records indicate they would benefit from the Honors Program are invited to participate; however, the program is open to all interested and qualified students.

Preprofessional (Joint) Programs

Joint programs leading toward graduation from the College of Liberal Arts may be used with The University of Iowa College of Medicine, The University of Iowa College of Dentistry, any accredited medical or dental college in the United States which offers advanced degrees, and The University of Iowa College of Engineering.
To be eligible to use a joint program with the above colleges toward graduation from The University of Iowa, a student must have completed all of the following prior to going to a "incidental" college: earned at least 94 semester hours; satisfied skills, core, and foreign language requirements; met the requirements for the major; and satisfied the residence requirement of the college.

After the student completes the first year of medical or dental college, the College of Liberal Arts will, upon presentation of a transcript, award a student 30 semester hours of ungraded elective credit which may be applied toward a degree.

To use a joint program with any college except the University of Iowa, a student, during his or her last semester in residence at the University, should apply to the graduation analysis section of the Office of the Registrar for permission to use this joint degree program. If the student meets the requirements listed above and will be attending an accredited medical or dental school, the registrar will instruct the student how to proceed toward applying for a University of Iowa degree.

With The University of Iowa College of Engineering, students may use all the College of Liberal Arts requirements, plus those of a major department, and then complete degree requirements in a major in the College of Engineering. This is a five-year program (three in liberal arts and two in engineering). The student receives two degrees at the time he or she completes the engineering program.

Admission Requirements

To qualify for admission to the College of Liberal Arts, the applicant must meet the college requirements outlined below, and any special requirements for the program of his or her choice.

Entering Freshmen

An applicant seeking admission as an entering freshman must have the high school from which he or she graduated provide a certificate of high school credits, including a complete statement of high school record, class rank, scores on standardized tests, and certification of graduation. An applicant may be tentatively admitted after he or she has completed the junior year in high school, but admission will not be final until receipt of the final transcript and certification of high school graduation.

A graduate of an approved Iowa high school who has the proper subject-matter background, is in the upper one-half of his or her graduating class, and meets specific curricular requirements, will generally be admitted upon certification of graduation. An applicant who is not in the upper one-half of his or her graduating class may be required to take special examinations, and, after a review of his or her entire record and at the discretion of the admissions officer, may be accepted unconditionally, admitted on probation, required to enroll for a trial period during a preceding summer session, or denied admission.

A graduate of an accredited high school in another state will be required to meet higher standards than the minimum requirements for a graduate of an Iowa high school. The options for admission by probation or trial enrollment may not be open to these students.

A graduate of a nonapproved high school must submit all data required above, and must take examinations which demonstrate his or her general competence to do successful college work.

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

Undergraduate 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 Grades given by Educational Institute published by the American Association of Collegiate Registrars and Admissions Officers will be followed for schools not regionally accredited.

Each applicant must submit an official transcript bearing the original seal and signature of the official in charge of records from each college or university the student has previously attended. The applicant must also submit a high school transcript, scores on standardized tests, and any other records or letters of the College of Liberal Arts may require to support his or her application for admission.

A transfer applicant is expected to have maintained a C average (2.0 in a four-point system) for all college work attempted, and must be not be under suspension from the last college attended. Transfer applicants who are not residents of Iowa are expected to have maintained a 2.50 average. An applicant who does not meet this standard may be permitted to take entrance examinations. An applicant who successfully completes the examinations may be admitted on probation.

In general, transfer applicants under academic suspension from the last college attended will not be considered for admission during the period of suspension, or, if suspended for an indefinite period, will not be considered until six months have passed since the last date of attendance. When eligible for consideration, the applicant will be considered on the basis of his or her performance on the entrance examinations.

A transfer applicant under disciplinary suspension will not be considered for admission until a clearance and a statement of the reason for suspension are filed from the previous college.

When it becomes proper to consider an application from a student under suspension, the college must take into account the fact of the previous suspension. An applicant granted admission under these circumstances will in each case be admitted on probation, and his or her admission will be subject to cancellation.

The College of Liberal Arts may refuse to recognize credit from a nonaccredited college, or may admit the applicant on a provisional basis and provide a means for the validation of some or all of the credit. The validation period shall not be
Undergraduate study may be expected to meet the minimum requirements outlined for inscute transfer students. Foreign transfer students will have proficiency in English evaluated in the same manner as entering freshmen. Those who are initially evaluated as proficient will fulfill the uniform undergraduate rhetoric requirements. If the student is not proficient, enrollment in ESL courses is required until proficiency is demonstrated. Like foreign applicants, immigrants (permanent aliens) from typically non-English-speaking backgrounds may be required to take the TOEFL. Other suitable measures of English proficiency may be required to meet college requirements for attendance.

Nondegree Candidates
Under special circumstances, students may be admitted to the college as nondegree candidates. Such admissions may be for career reasons or for enrollment in the Bachelor of Science in Business Administration. Students admitted in this category cannot be enrolled in graduation from the College of Liberal Arts.

Requirements for Degrees
Credit Requirements for Graduation
Graduates from any College of Liberal Arts baccalaureate program requires a minimum of 124 semester hours of college credit, of which the last 30 must be earned in residence in the College. A minimum of 18 semester hours of credit with a grade of C (passed according to classification at the time of admission) will be permitted in addition to credits earned by examination. Transfer students admitted to the University with more than 16 semester hours of grades are not eligible to take any more courses pass-fail here. (See following section for more details about the usage for pass-fail grades.)

No more than 30 semester hours of credit earned in correspondence courses may be applied toward college requirements for baccalaureate graduation.

Semester hours for courses completed with nonpass marks do not count toward the total required for graduation, but do count in the computation of the grade-point average.

After a student has earned 62 semester hours of college credit from all sources, no more credit can be accepted by transfer from a junior college toward meeting the 124 semester hours needed for graduation from the College of Liberal Arts.

Course Requirements
Except for the Bachelor of General Studies and Bachelor of Liberal Studies degrees, the basic program for baccalaureate graduation from the College of Liberal Arts consists of the general requirements, the student's area of concentration or "major," and electives.

General requirements include basic skills (rhetoric, mathematics, and physical education); historical-cultural, literature, natural science, and "intel" science cores; and foreign language.

The student's major department determines requirements for the student's major.

The student chooses elective courses with the assistance of his or her academic advisor.

Typically, the student takes about one-fourth of his or her coursework in each of the three areas, focusing on the general requirements the first two years and on the area of concentration during the junior and senior years.

Students admitted from accredited two-year colleges who hold the A.A. or A.S. degree at the time of the first enrollment at The University of Iowa will be considered to have met all the college course requirements except the foreign language requirement. A minimum of 30 semester hours of credit must be earned in transfer for transfer is required for the acceptance of the A.A. or A.S. degree.
Rhetoric Skills
The College of Liberal Arts requires all entering undergraduate students to enroll in rhetoric coursework each semester until they achieve a satisfactory level of competence in oral and written communication; proficiency in investigating, analyzing, evaluating, and responding to the ideas, beliefs, and attitudes of other writers and speakers; and proficiency in the responsible use of various sources of information and ideas.

Students are originally assigned to rhetoric courses on the basis of American College Test scores. Most entering freshmen are assigned either to 10-1-2 Rhetoric, a two-semester, 8-semester-hour sequence, or to 10-3 Rhetoric, a one-semester, four-credit course.

Students initially assigned to and registered for 10-3 Rhetoric, 10-4 Rhetoric, or 36C-25 Principles of Speech Communication may attempt to satisfy all or part of the rhetoric requirement, and earn 2 or 4 semester hours of credit, by taking the writing and/or speech tests offered during the first week of the semester. Rhetoric classes begin with student performances which serve as placement indicators. Students in 10-1 who demonstrate above average reading, speed and comprehension and above average writing skill may be advised to switch to 10-3, for example.

Students whose early work indicates a need for individualized instruction beyond their classroom may enroll for noncredit work in the reading and/or writing labs offered by the Rhetoric Program. Some students may be advised to switch to 10-8, a one-semester, two-credit course of individualized instruction in reading, and/or to 10-6, a one-semester, two-credit course of individualized instruction in writing. No more than 6 semester hours of noncredit may be counted toward baccalaureate requirements.

Transfer students may, meet the rhetoric requirement with 6 semester hours of transfer credit in composition and 2 in speech. Students who partially satisfy the requirement with transfer credit may be assigned to 10-2-4, 36C-25. Students admitted to the University with 4 or more semester hours of transfer credit are excused from the rhetoric requirement.

(For rhetoric course descriptions, see "Rhetoric Program" in this section of the Catalog; for a description of 36C-25 Principles of Speech Communication, see "Communication and Theatre Arts.")

Mathematics Skills
The general requirement in mathematics can be met by at least two one-half years of high school mathematics, or a minimum score of 23 on the mathematics section of the American College Test, or completion of the University course 22M:1 Basic Mathematical Techniques, or a mathematics, statistics, or computer science course tested in the Division of Mathematical Sciences.

Transfer students may meet this requirement with transfer credit in mathematics, statistics, or computer science.

Physical Education Skills
This requirement may be met with four 1-semester-hour physical education skills courses, or by satisfactory performance in any of the comprehensive physical educational skills tests given at announced times each semester. The student may receive no to 4 semester hours of ungraded credit for successful completion of the tests.

Freshmen who take the test but fail it, must register for physical education skills for at least the semester before attempting the test again. Those who have not passed the test before the beginning of the sophomore year must register for physical education skills coursework at that time, those who wish to, may take the sophomore course for no credit. No more than 4 semester hours of credit in physical education skills may be counted toward a baccalaureate degree.

Students who have passed their twenty-third birthday prior to their first registration in the University are excused from the physical education skills requirement.

Students who present evidence of having completed a basic training program in some branch of military service may be excused from the requirement.

Transfer students may meet the requirement with 4 semester hours of transfer credit in physical education.

Transfer students admitted to the University with more than 40 semester hours of transfer credit are excused from the requirement. Transfer students transferring less than 4 semester hours of physical education credit and a total of less than 40 semester hours of credit must complete the 4-semester-hour physical education requirement at The University of Iowa.

The instructional program in physical education skills provides for a wide variety of activities. The program also gives the student an opportunity to correct physical defects which impede to therapeutic exercises.

Courses with which the student can meet the requirement are:

10-24 Physical Education Skills 1 sh.
Physical education in basic activities such as: cross-country, soccer, field hockey, track, basketball, tennis, and swimming. Geared toward the physically unprepared student, without credit towards graduation. See catalog description of course for activity choices.
10-28 Physical Techniques Course 4 sh.

10-32 Physical Education Skills 1 sh.
Description same as 10-24.
10-32 Physical Education Skills 1 sh.
Description same as 10-24.
10-22 Physical Education Skills 1 sh.
Description same as 10-24.
10-22 Physical Education Skills 1 sh.
Description same as 10-24.

Core Requirements
There are four core areas: historical-cultural studies, literature, natural science, and social science. 45 students may satisfy the core requirements by earning 40 semester hours of credit in core courses offered in that area, or in departmental courses approved for core purposes.

These requirements may be met in part or totally by satisfactory performance in approved tests from the College-Level Examination Program (CLEP). With the approval of his or her major department, a student may be excused from the core requirement in the area of his or her major.

Except in literature, core courses may be taken as electives. No core courses or departmental courses seem to must
Transfer students may meet this core requirement with 8 semester hours of transfer credit in core-equivalent courses in astronomy, biochemistry, botany, chemistry, geology, mathematics, microbiology, phyics, and zoology, or with a combination of transfer and UI natural science core courses totaling 8 semester hours.

1123 Nature Studies

1125 General Chemistry Laboratory 2 s.h.
4:14 Principles of Chemistry I 3 s.h.
4:16 Elementary Chemistry Laboratory I 2 s.h.

General Science

(Only for students majoring in elementary, special, or early childhood education)

Students with no college science take:

97:56-58 Science Foundations 8 s.h.
22M:80 Theory of Arithmetic 3 s.h.

Students with 4 or more semester hours of college science take:

97:104 Science Foundations II or
22M:82 Theory of Arithmetic 3 s.h.

Geology

125 Introduction to Geology 4 s.h.

(Math may not be taken in combination with 11:23)

Mathematics

22M:10 Fundamentals of College Mathematics I 4 s.h.
or
22M:11 Fundamentals of College Mathematics II 4 s.h.

Physics and Astronomy

24:11 College Physics 4 s.h.
or
17:17 introductory Physics I 4 s.h.
or
24:12 College Physics 4 s.h.
or
18:18 introductory Physics II 4 s.h.

9:10 Basic Physics (may not be combined with any other physics core option)

29:50 Modern Astronomy 4 s.h.
29:81-82 General Astronomy 8 s.h.
29:102 General Astronomy 4 s.h.

Zoology

37:3 Principles of Animal Biology 5 s.h.

Social Science Core

The social science core requirement may be met with 8 or more semester hours of credit earned in any combination of courses listed below. For course descriptions, including prerequisites, see the appropriate departmental section of the Catalog.

The social science core option for transfer students is 8 semester hours of transfer credit in core-equivalent courses in anthropology, economics, geography, political science, psychology, and/or sociology, or a combination of transfer and UI social science core courses totaling 8 semester hours.

Anthropology

113:3 Introduction to the Study of Culture and Society 4 s.h.

113:10 Anthropology and Contemporary World Problems 4 s.h.

Economics

48:2 Principles of Economics 4 s.h.

48:2 Principles of Economics 4 s.h.

Geography

41:1 Introduction to Human Geography 4 s.h.

41:2 Natural Environment and Man 4 s.h.

14:11 Introduction to Social Geography 4 s.h.

41:19 Natural Environmental Issues 4 s.h.

40:30 Introduction to Economic Geography 3 s.h.

49:26 World Cities 3 s.h.

Linguistics

103:3 Language and Society 4 s.h.

Political Science

20:1 Introduction to American Politics 4 s.h.

20:2 Introduction to Politics 4 s.h.
or
20:11 The American Political System 4 s.h.

20:30 Introduction to Political Thought and Political Action 4 s.h.

20:40 Introduction to Comparative Politics 4 s.h.

20:50 Introduction to Political Behavior 4 s.h.

20:60 Introduction to World Politics 4 s.h.

Psychology

31:1 General Psychology 4 s.h.
or
31:3 General Psychology 4 s.h.

Sociology

34:1 Introduction to Sociology: Principles 4 s.h.
or
34:2 Introduction to Sociology: Problems 4 s.h.
Foreign Language Requirements

The Bachelor of Arts degree requires at least four semesters of college-level study in any of the foreign languages taught in the University. The requirement may also be satisfied by completion in four years of high school study in one language. Completion of a combination of high school and college study in one language which would be the equivalent of four semesters of study on the college level, or satisfactory performance in an achievement examination measuring proficiency equivalent to that usually attained after four semesters of college study in one language.

The Bachelor of Fine Arts, Bachelor of Music, and Bachelor of Science degrees require at least two semesters of college-level study in any one of the foreign languages taught in the University. The requirement may also be satisfied by completion of two years of high school study in one language, completion of a combination of high school and college study in one language which would be the equivalent of two semesters of study on the college level, or satisfactory performance in an achievement examination measuring proficiency equivalent to that usually attained after two semesters of college study in one foreign language.

Students taking in-earn may satisfy the foreign language requirement for the B.A degree by taking a sequence of courses culminating in 0:12 Intermediate French or 0:28 Second-Year Composition and Conversation, or a combination of 0:27 Second-Year Composition and Conversation and 0:26 French Composition First-Level. 0:26 alone is not sufficient for the fourth-semester requirement. Other combinations are possible. Consult the Department of French.

For elementary Chinese or Japanese courses, 6 semester hours per course, for a total of 12 semester hours will meet the foreign language requirements for the B.A. degree. One semester (6 semester hours) of these courses will meet the foreign language requirement for the B.P.A., B.M., or B.S. degree.

No foreign language is required for the Bachelor of General Studies or the Bachelor of Liberal Studies degree.

No foreign language courses may be taken pass-fail if they are to be used toward satisfying the foreign language requirement of the college.

Foreign Language Requirement for Foreign Students

Students admitted to The University of Iowa for foreign students may satisfy the foreign language requirement for graduation from the College of Liberal Arts with the B.A., B.S., B.M., and B.F.A. degrees as indicated below.

As a guiding principle, students should be bilingual. If it is clear that the student is proficient in one language (quitting a native language) other than English, the student can use English to meet the foreign language requirement. If it is not clear what a student's other language is, the Admissions Office will confer with the Liberal Arts Advisory Office.

At the time of admission of foreign students, the Admissions Office can indicate on the Admission Statement whether the foreign language requirement is satisfied and in which of the following ways:

By completing in secondary school, or at another college, courses in the study of English (speaking, writing, reading, etc.) under the same proviso that regular students may use it meeting the foreign language requirement; or

By scoring 650 or higher on the TOEFL.

If the requirement is still to be satisfied, the Admissions Office will so indicate.

When foreign students who did not need the foreign language requirement at the time of admission are ready to graduate, the graduation analysis section of the Registrar's Office will accept any of the following as meeting the requirement:

Successful completion of at least 12 semester hours of appropriate courses in "English as a foreign language" (EFL) taught by the University's own language instruction department;

Successful completion of either the 101-102 Rhetoric sequence or 103, 109, or 110 Rhetoric with grades of C or better.

Demonstrated proficiency in the use of the English language for the EFL program on credit will be awarded on the basis of these evaluations.

Successful completion of at least 30 semester hours of coursework at the University with a grade-point average of 2.0 or better.

Foreign students usually have their English proficiency evaluated by the EFL program upon first arrival on campus, and may be required to take specific EFL courses before they are eligible to enroll in rhetoric.

Bachelor of General Studies

The Bachelor of General Studies degree is designed to provide students with maximum flexibility in planning their educational programs. Candidates for this degree should have clear educational goals with specific courses and areas of study already in mind. To earn this degree, a student does not have to have satisfied the general education requirements of the college (i.e., skills, cores, and foreign language), accept that students held for the rhetoric requirement must enroll for a rhetoric course.

Within the freedom of the B.G.S. degree, students may assemble groups of courses related to a single topic or they may select courses from a number of disciplines. Individuals may put together one or more clusters of courses to provide just the background they desire.

All B.G.S. students should follow the requirements for the B.A. or B.S. degree in planning their programs, and avoid divergence from those requirements only when it seems in their best interests to do so, working out an individualized "area of concentration." The student should examine the requirements in the major most closely related to his or her field of interest.

If a student who has been pursuing a B.G.S. degree decides to earn a B.A. or B.S. degree instead, the student must then meet all of the necessary skills, cores, and foreign language requirements for the B.A. or B.S. degree.

Specific requirements for the B.G.S. degree are as follows:


Teaching Certification with the B.S.G. Degree

A B.G.S. student may earn teaching certification in early childhood, elementary, secondary, or special education in the following manner:

Meet all the requirements of the major department (this usually involves meeting major course requirements in some field, such as elementary education, English, social studies education, etc.), and

Meet certification requirements in the selected certification program (this involves methods courses and practice teaching).

A B.S.G. student seeking certification to teach may calculate the coursework of education and psychology courses to avoid exceeding the B.G.S. maximum allowance of 40 semester hours in one department.

Bachelor of Liberal Studies

Offered by each of the three Iowa Regents universities (The University of Iowa, Iowa State University, and the University of Northern Iowa), the B.L.S. program is designed to serve adults who cannot enroll in the college as full-time, on-campus students. The program has no residence requirement. Work done in community and private colleges in Iowa and in accredited out-of-state colleges may be applied toward the degree, as may applicable courses taken from any of the three Iowa Regents universities. Types of courses available from the Regents universities include correspondence and independent study courses; radio, television, and newspaper courses; Saturday and evening courses; extension courses including those with new distance-learning formats; and regular on-campus courses. Students may also take proficiency examinations.

To be eligible for admission to the program, the student must have earned either an Associate in Arts (A.A.) or Associate in Science (A.S.) degree from an accredited institution, or 60 semester hours of collegiate work accredited for credit toward graduation. The student must satisfy the college's basic skills and core course requirements. holders of the A.A. or A.S. degree will have already met these requirements. Of the 124 semester hours of credit required for the degree, at least 45 must be earned in four-year colleges, in courses defined as upper-level where the credits were earned (in the College of Liberal Arts, courses numbered 100 and above); 45 must be completed in courses offered by the Iowa Regents universities; and 30 must be earned after admission to the B.L.S. program in the specific Regents university which will grant the degree.

The B.L.S. candidate must meet the general education requirements of the Regents university from which the candidate expects to receive the degree, and, in addition, must earn at least 12 semester hours (or 18 quarter hours) of credit in each of two of these distribution areas:

 Humanities
 Communications and arts
 Natural sciences and mathematical disciplines
 Social sciences
 Professional fields, as approved by the degree-granting institution

Of these 36 semester hours, 24 must be in upper-level courses, and of these 24, at least 8 must be in each of the three selected distribution areas. Credits applied to the general education requirements may not be used to meet the distribution area requirements.

Graduation requires a minimum grade-point average of 2.0 in all coursework applied toward the degree, in all coursework completed after admission to the program, and in all upper-level coursework.

While no B.L.S. is awarded by the College of Liberal Arts, the program is administered by the Division of Continuing Education.

Combined Degree Programs

In combined degree programs with other colleges in The University of Iowa, such as medicine, dentistry, and engineering, the student must fulfill all specific
requirements for the bachelor’s degree, including the residence requirement of the College of Liberal Arts, immediately preceding transfer to the professional college. No more than 30 semester hours earned in the professional college, after the student transfers from College of Liberal Arts, may be counted as electives toward the College of Liberal Arts degree.

Two or More Bachelor’s Degrees
Students who have already received a bachelor’s degree and wish to qualify for an additional bachelor’s degree must meet requirements for the second degree and complete at least 36 additional hours of study in residence in the College of Liberal Arts beyond the first degree.

Double Majors
Students may meet the major requirement in more than one department, and if both departments award the same degree, the student may earn a bachelor’s degree with two majors; for example, B.A. in history and English; B.B. in psychology and sociology. No double majors can be earned unless both are departments of the College of Liberal Arts.

Scholarship Requirements for Graduation
The general requirements for graduation include the element of quality as well as the quantity of work completed. A student satisfies the qualification of graduation requirements of the college by earning a minimum grade-point average of 2.0 on (1) all college-level work attempted and work attempted at The University of Iowa; (2) all work attempted in the major field; and (4) all work attempted in the major field at The University of Iowa.

A student who does not meet requirement (1) but who does have a cumulative grade-point average of at least 1.9 on all college work attempted and on all work attempted at The University of Iowa, and has a 2.0 average in the major, both cumulative and at The University of Iowa, may satisfy requirement (1) by earning sufficient grade points to equal or exceed a figure obtained by multiplying by two the number of hours required for graduation at the time of entrance.

Grade-Point Average
The cumulative grade-point average is computed by (1) multiplying the hours of credit in each course by the appropriate grade points; (2) totaling the grade points earned to date; and (3) dividing the sum by the number of hours undertaken, excluding courses in which grades of W or P are given. Grades of P are included in hours attempted and are used in computing the grade-point average.

Collegiate Policies

Deadlines

Adds
Courses may be added during the first three weeks of the semester or first one and one-half weeks of the summer session with approval of the adviser and instructor.

Drops
Courses may be dropped during the first ten weeks of the semester or first five weeks of the summer session with the approval of the adviser and instructor.

Special Courses
Courses that meet on a different schedule or start or end at times other than the beginning and end of the semester, and are not listed in the Schedule of Courses, may be added with necessary signatures at any time during the first one-fifth of the duration of the course. Similar proportional deadlines will operate during the usual eight-week summer session and for other special session courses. The dean’s approval will be needed for all adds after the third week and for all drops that occur after the tenth week.

Pass-Fail and Audit
Pass-fail registrations or revokes of pass-fail registration and changes to audit or revoking audit may be made during the first three weeks of the semester for first one and one-half weeks of the summer session with approval of the adviser and instructor.

Late Registration
With the approval of the adviser and instructor, students may register late during the first three weeks of the semester or first one and one-half weeks of the summer session.

Cancellation
Students may cancel their registration at any time during the session up to 4:30 P.M. of the last day of classes.

Grading System
A: 4 grade points
B: 3 grade points
C: 2 grade points
D: 1 grade point
F: no grade points
P: pass, no grade points
S: satisfactory pass, no grade points
R: registered, no credit
I: incomplete
J: no report
W: withdrawn

Grade of Incomplete
A grade of I may be reported only if the unfinished part of the student’s work is in a course other than in research, thesis, or independent study, is small, the work is unfinished for reasons acceptable to the instructor, and the student is standing in the course is satisfactory.

Courses may not be repeated to remove incompletes. Incomplete grades must be removed by completing the unfinished part of the work. The work must be completed and submitted to the course instructor. The incomplete may be dropped and replaced by a grade of P any time prior to the close of final exam week of the next session in which the student registers, except that students with incompletes from the spring semester are exempt from completing the course during the succeeding summer session.
No Report

The "no report" designation appearing on a student's permanent record must be changed to a valid grade according to the same rules that apply to "incompletes." Failure to remove the O by the specified date will result in an F being assigned for each incomplete.

The Mark of W

Undergraduate students in the College of Liberal Arts will be assigned a mark of W for any course in any college dropped after the third week. Undergraduates in other colleges will receive a W for dropping any course in the College of Liberal Arts after the third week, including courses numbered with the College of Education prefix 7 and General Science Program prefix 49. Similar proportional deadlines will operate during the usual eight-week summer session and for other special session courses.

Regression

Regression occurs if a student takes a lower-level course (which is a prerequisite) after having satisfactorily completed a more advanced course in the same subject. Whether regression has occurred is determined by the Registrar at the time of graduation and if it has occurred the student must earn extra hours to replace those earned by regression.

Pass-Fail

The option of taking courses pass-fail is available to all students in the College of Liberal Arts under the following conditions:

1. The consent of the advisor and the instructor must be obtained. In cases where multiple-section courses are involved, the department should have a uniform standard policy.

2. The mark of pass (P) may be used in lieu of grades A, B, C, and D for all courses in the College of Liberal Arts and in all other colleges of the University unless otherwise limited.

(Satisfactory-Fail Description for College of Business Administration.)

Pass-fail may be used only for remedial, physical education skills, 22M-1 Basic Mathematical Techniques, and electives. Courses taken to satisfy the foreign language requirement and the core requirements may not be taken on a pass-fail basis. Not more than 16 semester hours of P grades from all colleges will be accepted toward the bachelor's degree for any student. Transfer students who bring in less than 50 semester hours may earn a maximum of 10 semester hours of P grades. Those who bring in more than 56 semester hours are limited to 8 semester hours of P grades. (See comment under "Credit Requirements for Graduation." Limiting the total hours of P grades.)

Work in the major department is not available on a pass-fail basis. No courses bearing major departmental number may be taken pass-fail. Courses required for the major in cognate or related areas may be taken on a pass-fail basis, if available, at the discretion of the major department.

A student may register for only two pass-fail courses per semester and/or summer session. If a student enrolls for two physical education skills, technical, or elective courses in the same semester and wishes to take both of them pass-fail, a pass-fail form must be submitted for each course.

A student is not registered for pass-fail unless he or she turns in a properly filled out and signed pass-fail form after the beginning of classes and before the end of the third week of classes (first one and one-half weeks of a summer session). Any change from pass-fail to grade status or grade status to pass-fail must be made by submitting a proper pass-fail form to the Registrar before the end of the third week of classes (first one and one-half weeks of summer session).

The grade of P under the pass-fail usage will be used in the computation of a student's grade-point average.

Satisfactory-Fail

The option of taking courses on a satisfactory-fail basis is available to all students in the College of Liberal Arts under the following conditions:

When approved by the department and the dean of the college, the grade of satisfactory (S) may be used in courses in which the judgment of the department, the instructional purposes of the course will be best served by granting all students on a satisfactory-fail basis.

Not more than 16 semester hours of S grades will be accepted toward the bachelor's degree of any student. S grades may be earned in the major. No horny will be needed to register for a satisfactory-fail course. All students in both S grades will receive either an S or an F.

The grade of F under the satisfactory-fail usage will be used in the computation of the student's grade-point average.

Auditing Courses

Students in the College of Liberal Arts may register to audit courses by marking their registration form for zero credit (audit) during registration with the special permission signature of the instructor and the advisor. To add a course for audit (zero credit) after the start of the semester, the student must register for zero credit on a change of registration form. Any change from credit to zero or audit to audit credit basis must be made within the first three weeks of a semester (one and one-half weeks during the summer session), using a change of registration form with the necessary signatures.

The mark of R will be assigned to those registered for the course for zero credit if the student's attendance and performance are satisfactory. If unsatisfactory, the mark of W will be assigned. Courses offered for zero credit only will be graded on the R/W basis. Courses offered for zero credit as well as for credit hours, when taken for zero credit, will use the R/W grade basis. Courses completed with a mark of R will not meet any college requirements, and carry no credit toward
Advanced Placement

Under the Advanced Placement Program of the College Entrance Examination Board, a high school senior may take comprehensive achievement examinations in a variety of subjects. The College of Liberal Arts grants college credit and, where appropriate, advanced placement or credit to students who achieve satisfactory standards in these examinations. For information, write to the College Entrance Examination Board, 475 Riverside Drive, New York, N.Y. 10065.

Second-Grade-Only Option

For courses taken at The University of Iowa, a student may repeat that course at the University unless obvious repetition is involved, and have only the grade and credit of the second registration used in calculating the University of Iowa cumulative and total cumulative grade-point average.

This provision may be applied to a maximum of 16 semester hours of work. A student who wishes to utilize the provisions of this rule should:

Register in the usual manner for the course he or she desires to repeat or add it during the regular period for adding courses (the first three weeks of the semester or one and one-half weeks of a summer session).

Apply to the Liberal Arts Advisory Office to check his or her eligibility and complete the proper form. Current procedures of both grades in instances where a student repeats a course will be continued unless the student completes the form.

Under the provisions of this option, the Office of the Registrar will mark the permanent record to show that a particular course has been repeated. Both grades will remain on the permanent record, but only the second one will be used in calculating the grade-point average and hours earned. The use of the second-grade-only option does not guarantee the opportunity to repeat a specific course; for example, the course may no longer be offered within the necessary time period the student has available, or different actions concerning grades may be involvedso.

If the student takes the course for a grade the first time, he or she must take the course for a grade the second time. If the student took the course pass-fail for the first time, he or she may take it pass-fail or for a grade the second time.

Classification

Freshman: less than 28 semester hours of credit earned
Sophomore: 28 through 55 semester hours earned
Junior: 56 through 89 semester hours earned
Senior: more than 88 semester hours earned

Official Transcripts

Official transcripts of a student's record are available at the Office of the Registrar.

Application for Degree

Each student who wishes to be considered for graduation must file an application for a degree with the Office of the Registrar before the deadline date during the session in which the degree is to be conferred.

If a student does not graduate on the date indicated in the application, he or she must file another application for a degree for the next applicable session. Students do not need to be re-registered to apply for a degree.

Graduation Analysis

Students may obtain a written graduation analysis upon application at the Office of the Registrar. The analysis may be requested at any time after the completion of the sophomore year. Each student is limited to only one analysis.

Class Attendance

The individual faculty member or course chair determines the policy regarding class attendance in his or her course except that students are to be permitted to "make up" examinations or other required work missed due to illness or participation in University-sponsored activities which necessitate absence from class. Students are required to
observe the regulations as announced for the course. The individual instructor may assign extra work, lower grades, or in frequent cases cancel the student's registration for the course if absences are excessive.

Students are expected to attend classes regularly. It is suggested that instructors who reasonably adequate attendance records, especially in courses in which fresmen were sent. When an instructor considers that a student has been excessively absent, that, when such absence endangers satisfactory academic progress, the instructor may call or send a written request to the Liberal Arts Advisory Office for investigation and action.

Excused Absences

For permission to be absent from class to participate in any regularly scheduled University event, members of athletic teams, the marching band, and other recognized University groups are expected to present to each instructor prior to each absence a written statement signed by a responsible official specifying exactly the dates and times it is necessary to miss class.

Students who have been absent for medical or health reasons are expected to present evidence that they have been ill. Regular excuses for this purpose are available in each departmental office and the Liberal Arts Advisory Office. Students should not be asked to obtain excuses from the Student Health Service.

Mid-Semester Reports

Faculty members are expected to report mid-term averages of grades and attendance. whose work is below C. Mid-semester reports should be sent to the Office of the Registrar on forms provided for that purpose. The Liberal Arts Advisory Office distributes the reports to advisers and to individual students or the housing units in which they reside.

Probation and Dismissal

Students who fail to attain the following minimum cumulative grade-point averages (UI and overall) for their class are placed (or continued) on scholastic probation:

- Freshmen (less than 20 semester hours): 1.60
- Sophomores (20 to 65 semester hours): 1.50
- Juniors (65 to 90 semester hour): 1.75
- Seniors (90 or more semester hours): 1.90

Students on probation whose cumulative (UI and overall) grade-point averages equal or exceed the grade-point averages listed in the paragraph above for the four classifications will be restored to good standing. Students will be removed from probation only at the end of a semester or session.

Students who fail to make the grade-point averages as listed in the paragraph above will be dropped from the college for poor scholarship as follows: those who are admitted on probation, at the close of one semester or session; those who are admitted in good standing and are placed on probation at the close of the first semester of their enrollment, after one semester on probation; all others after two semesters on probation. However, very poor work in any semester may result in dismissal at the close of that semester or session.

Under special and unusual conditions, students may be granted an additional semester on probation. Petitions should be addressed to the director of the Liberal Arts Advisory Office. Students who are dropped for poor scholarship at the close of the spring semester will, at their request, have their cases reviewed if they enroll in the summer session at The University of Iowa and achieve good standing at the close of the session.

A student dropped from the college for poor scholarship may petition the Liberal Arts Advisory Office for permission to reenter after an interval of one year. The petition must present evidence that changes have occurred in the status of the student which indicate improved chances of success in college work. A student granted permission to reenter under the provisions of this paragraph will be reported on “strict probation” and dropped for the second time for poor scholarship, may not register for at least five years. After five years, the student may petition the Liberal Arts Advisory Office for permission to reenter.

A record of each student's scholastic performance is kept in the Office of the Registrar and in the Liberal Arts Advisory Office. Students placed on probation, continued on probation, or dismissed from the college are notified in writing by the Liberal Arts Advisory Office.

Recognition for Academic Achievement

The college awards degrees "with highest distinction" to students in the highest 2 percent of the graduating class, "with high distinction" to students in the next highest 3 percent, and "with distinction" to students in the next highest 4 percent. Ranking is based on students' grade-point averages for all college-level study undertaken prior to their final registration.

The college also awards degrees "with honors" to students who have satisfied the requirements for an honors major, receive departmental recommendation, and are approved by the college's Honors Council and dean.

To be eligible for either form of recognition, the student must take his or her final 60 semester hours of study in residence in the college, and must have completed at least 45 semester hours of study in the college before his or her final registration.

Dean's List

Liberal arts students achieving grade-point averages of 3.6 or above during a given semester on 12 or more semester hours of graded work, with no "C" or "D" still standing on the current or past semester's record, are recognized by inclusion on the Dean's List for that semester.
Aerospace Military Studies

Students are expected to evaluate critically what they read and what they say. This student-oriented approach encourages inquiry, logical thinking, effective communication, imagination, and sound judgment.

The program is open to graduate as well as undergraduate students. To be despatched as a cadet, the student must register for the AFROTC course sequence.

A student in the AFROTC program takes the 231/11-12 sequence the first year, 23A:14-115 Management and Leadership the second year, 23A:12-213 National Security Forces in Contemporary American Society the fourth year, and 23A:96 Leadership Laboratory all four years. Throughout each year, three- and four- day orientation visits to air force bases supplement classroom instruction.

Two- and Three-Year Programs

Although the AFROTC curriculum normally spans four years, it can be completed in three years by substituting the first two years' courses into one year. The program also can be completed in two years if the student attends six weeks of summer field training at an air force base before beginning the last two years of the regular curriculum. Students interested in the two-year program should contact the Department of Aerospace Military Studies early in the spring semester prior to attendance at air field training.

Field Training

Prior to commissioning, all cadets that attend a field training session offered at air force bases across the country.

Generally, this training takes place prior to the student's arrival the third year of the program.

Field training for four-year cadets is four weeks in length and includes courses in field orientation, survival training, aircraft orientation, physical training, air force organization and function, career orientation, small arms familiarization, and human relations. The six-week field training for students selecting the two-year AFROTC program includes sixty hours of classroom academics.

Two-week periods on active duty working in the student's future career area is attended at the Airborne "jump" school are voluntary options also available to selected students.

Advanced Placement

Service veterans can get full credit toward commissioning (full graduation) for the first two years of AFROTC and are not required to attend field training prior to entering the program. They must, however, complete the training prior to commissioning.

Flight Instruction Program

During the year prior to commissioning, students selected for pilot training will receive 26 hours of flying training from the Iowa City Flying Service.

Financial Assistance

Scholarships which provide tuition, books, laboratory fees, and a $1,000 per month, tax-free subsistence allowance are available to cadets. Agreements for four-year scholarships are submitted directly to National Air Force Headquarters. Agreements for 3 1/2-, 3, 2 1/2-, and 2-year scholarships are submitted through the Department of Aerospace Military Studies at the University.

All cadets in the last two years of AFROTC receive $100 monthly as a tax-free subsistence allowance. Students attending field training are paid while there and receive travel expenses. Uniforms and books for classes taught by military faculty are furnished, and a $300 uniform allowance is provided for commissioned students.

Educational Delay

Cadets may request an educational delay to postpone entry to active duty...
Special Activities
The Department of Aerospace Military Studies sponsors several activities which contribute to cadre and University life.

The Arnold Air Society is a national professional honor society which engages in University and community service activities.

The Cadel Corps sponsors social activities throughout the year, including informal parties, a formal dinner, a military ball, and an awards ceremony which honors outstanding cadets for their accomplishments.

Courses

2302-11 The Air Force Today 1 hour
Introduction to all facets of Air Force life. Includes organization, missions, and growth of the Air Force, modern use of offensive and defensive forces, improvement of special purpose forces.

2303-11 The War Game 1 hour
Introduction to all facets of Air Force life. Includes organization, missions, and growth of the Air Force, modern use of offensive and defensive forces, improvement of special purpose forces.

2304-11 The Development of Air Power 1 hour
Traces development of air power from the Civil War to Vietnam. Includes development of air power, influence of technology, role of air power in military and humanitarian operations.

2305-11 The Development of Air Power Continuation of 2304. 1 hour
Traces development of air power from the Civil War to Vietnam. Includes development of air power, influence of technology, role of air power in military and humanitarian operations.

2306-01 Aerospace Military Studies Flight Instruction 2 hours
Prepares students to pass FAA private pilot's written exam. Includes FAA regulations, flight computer, navigation, meteorology, and flight log. Course does not include actual flying hours.

2307-01 Leadership Laboratory 6 hours
Opportunity for cadets to experiment with leadership styles, techniques, and attitudes in group settings. Emphasis on communication and decision making, allows cadets meaningful experiences with increasing authority and responsibility. May be repeated for credit.

2308-01 Leadership Lab Continuation of 2307. 6 hours
Opportunity for cadets to experiment with leadership styles, techniques, and attitudes in group settings. Emphasis on communication and decision making, allows cadets meaningful experiences with increasing authority and responsibility. May be repeated for credit.

2309-11 National Security Force in Contemporary American Society 3 hours
A study of the role of the armed forces as an integral component of contemporary American society, in terms of military doctrines, U.S. defense policy, international environment, and military justice.

2310-11 National Security Force in Contemporary American Society Continuation of 2309. 3 hours
A study of the role of the armed forces as an integral component of contemporary American society, in terms of military doctrines, U.S. defense policy, international environment, and military justice.

2311-11 Management and Leadership 3 hours
Theory and application of basic management concepts, with emphasis on Air Force operations. Includes communication, human behavior, management processes, and ethics. Includes decision-making strategies and tactics, value clarification, managing change.

2312-11 Management and Leadership Continuation of 2311. 3 hours
Theory and application of basic management concepts, with emphasis on Air Force operations. Includes communication, human behavior, management processes, and ethics. Includes decision-making strategies and tactics, value clarification, managing change.

Afro-American Studies

Program chair: Daniel T. Turner
Professor: James H. Turner (English/African-American Studies)
Assistant Professor: Peter Noguchi
(English/International Writing Program/Afro-American Studies)
Assistant Professor: Marie Walden (History/Afro-American Studies)
Assistant Professor: Arthur Parks (Anthropology/Afro-American Studies)

Degree offered: B.A., M.A., and Ph.D. in Afro-American Studies

The Afro-American Studies Program focuses on the study of people of African ancestry in the North American colonies and the United States of America from the seventeenth century to the present. To provide a comprehensive view of that subject, the program also offers courses examining the African heritage and the present relationships of African-Americans to Africans in other lands. Because a thorough understanding of Afro-American culture cannot be achieved through study restricted to the perspective of a single discipline, all students in the program are required to pursue courses in both humanities and social sciences. Although the program of present emphasis history and literature, the Afro-American studies steering committee engages in a continuous effort to expand program perspectives by developing courses which will help to the knowledge drawn from many disciplines in the humanities and social sciences.

The program originated in 1969 in courses intended to foster awareness of the role Afro-Americans have taken in the development of the United States, and to promote understanding of the present conditions and concerns of Black Americans. Since then, these courses have been integrated into a curriculum that includes a program leading to an undergraduate minor in Afro-American studies, a Master of Arts degree in Afro-American studies, and concentrations in Afro-American studies in programs leading to a B.A., M.A., or Ph.D. in American studies. It is also possible for students seeking a Ph.D. degree in English or history to organize a minor in Afro-American literature or Afro-American history into a special field or cognate area.

Although most of the students in the Ph.D. program are preparing to work in colleges and universities as teachers and administrators, the B.A. and M.A. programs provide valuable background for many other students seeking careers in community work, public school teaching, religion, government, and political science. In short, the Afro-American Studies Program offers training important to any individual whose career will require understanding and knowledge of Black Americans.

Undergraduate Study

The Afro-American Studies Program offers a minor to undergraduate students. The semester hours required for the minor conform to the number specified for all minors in the College of Liberal Arts. In consultation with his/her advisor, the student selects 16 semester hours in 100-level, designated Afro-American Studies courses. Lists of such courses are available in the office of Afro-American Studies and in the offices of most departments.

Although the Afro-American Studies Program does not offer a major leading to a degree in Afro-American Studies, students interested in the field may concentrate on Afro-American studies in a program leading to the B.A. degree in American studies. Such a concentration would include 45.66 Literature of the African Diaspora, 45.67 Introduction to Afro-American Society, 45.68 Introduction to Afro-American Culture, and five electives from courses numbered 45.10 through 45.19. Also recommended as background for more advanced courses in Afro-American literature and history are 45.13 and 45.17 Afro-American Literature I-II and two of the following: 45.15 Afro-American History: 1860-1890, 45.16 Afro-American History: 1890-1914, and
The Master of Arts Program

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

Curriculum Requirements

The Master of Arts program in Afro-American studies comprises 34 post-baccalaureate semester hours, normally completed in three semesters. Requirements include 45:311 Introduction to Research in Afro-American Culture, 45:312 Advanced Research in Afro-American Culture, and 12 semester-hours of elective courses in Afro-American studies.

Most students will be required to earn 6 semester hours in literature/history by taking 45:116-117 Afro-American Literature I-II, or two of the following: 45:185 Afro-American History 1850-1920; 45:186 Afro-American History 1920-1914, and/or 45:186 Afro-American History 1914-Present. Students who have earned undergraduate or graduate credit for a year-long survey of either African 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 45:116-117 Afro-American Literature I-II and two of the following: 45:116 Afro-American History 1850-1920; 45:116 Afro-American History 1850-1914, or 45:116 Afro-American History 1914-Present, with only 6 hours of credit allowed toward the M.A. degree. A student who has completed a philosophy, 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 student's advisor.

Because the doctorate is not offered in Afro-American studies and the Afro-American studies steering committee wishes to encourage doctoral study for those who have the ability, interest, and resources, it recommends that the other 6 semester hours required in the Master of Arts program be used to explore doctoral education in disciplines outside of Afro-American studies. Among possible fields of study are American studies, anthropology, education, English, geography, history, and sociology. Students are encouraged to select at least one hour of the courses in their curriculum from those numbered above 200.

Language/Tool Requirements

No foreign language or tool is required for the Master of Arts program in Afro-American studies, but individuals fulfilling the possibility of doctoral study in another field will be encouraged to attempt to complete one tool/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 will be prepared and evaluated by a committee of faculty members who teach courses in the Afro-American Studies Program. A component of the comprehensive examination will be based on a reading list in Afro-American studies prepared and approved by the Afro-American studies steering committee.

Thesis/Project Requirements

A thesis is not required for a Master of Arts degree in Afro-American studies. If a student elects to write a thesis, the thesis must explore a topic of Afro-American culture and/or experience and must utilize research from more than one discipline. The maximum credit for such a thesis is 4 semester hours, and election of a thesis eliminates the requirement of 45:312 Advanced Research in Afro-American Culture.

A student who does not elect to prepare a thesis is required to develop, in consultation with an advisor, a project related to Afro-American culture and/or experience. When completed, this project must be presented to and defended before an appropriate class in Afro-American studies.

Admission Requirements

In addition to the general requirements of the Graduate College, unconditional graduate admission into the Afro-American 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 history, literature, and/or history courses, and a minimum grade-point average of 2.7 in previous college courses in Afro-American studies. A student may be asked to take, without credit towards the master's degree, courses needed to remedy any deficiencies in undergraduate preparation.

An applicant for graduation will be expected to provide three letters of recommendation from former professors, and a sample of his or her scholarly written work.

Recommendations for admission will be made by the Afro-American Studies steering committee of the Afro-American studies steering committee.

Afro-American Studies Concentration within an M.A. Program in American Studies

Generally a student seeking a concentration in Afro-American studies in American studies is preparing for a career as a research scholar or a college/university teacher, and proposes to undertake doctoral work in American studies. Of the 30 post-baccalaureate semester hours required for the degree, 12 to 24 normally are taken in Afro-American studies. Since the Afro-American Studies Program is
interdisciplinary, students taking 24
hours are required to complete 45:211
Introduction to Research in Afro-
American Culture, 45:118-117 Afro-
American Literature I and II, and two of
the following: 45:185 Afro-American History
1650-1830, 45:186 Afro-American History
1830-1914, and 45:185 Afro-
American History 1914-Present, except
when they have taken equivalent
courses at the undergraduate level.

For other requirements, see the program
for a Master of Arts in American studies,
described in the following departmental
sections of the Catalog.

Afro-American Studies
Concentration within a
Ph.D. Program in
American Studies

Generally, a student seeking a Ph.D. in
American studies with a concentration in
Afro-American studies is preparing to be
a teacher or research scholar at the
college or university level. Of the
minimum 72 post-baccalaureate
semester hours required for the degree,
least 30 semester hours (not
including the thesis) must be in courses
in Afro-American studies, including
45:211 Introduction to Research in Afro-
American Culture; 45:118-117 Afro-
American Literature I and II and two of
the following: 45:185 Afro-American History
1650-1830, 45:186 Afro-American History
1830-1914, and 45:185 Afro-
American History 1914-Present, except
when the student has completed equivalent
equivalent year-long surveys in Afro-
American literature and History before
enrolling in the graduate program at The
University of Iowa.

The interdisciplinary concentration in
Afro-American humanities and social
sciences requires students to explore
both areas. The thesis must be
written on research from more than one
field, while focusing on an aspect of Afro-American
culture or experience. For additional
requirements, please see the
description of the requirements for the
doctoral program in American studies in the
following departmental section of the
Catalog.

Cognate Areas or Special Fields

It is possible for students to take
concentrations of Afro-American courses
as cognate areas or special fields in
Ph.D. programs in history, English, and
other disciplines. For further details,
consult with an advisor in Afro-American
studies.

Co-curricular Activities
Related to Afro-
American Studies

Black Kaleidoscope

Each year the Afro-American Studies
Program sponsors an event to promote
knowledge and consciousness of Afro-American
culture and to encourage the participation of
Black students in the College. The Kaleidoscope,
a production of the Institute of Afro-
American Culture and History, is
presented by the University’s Black Culture
groups.

Institute in Afro-American
Culture

Since 1989, the University of Iowa has
served as host for an Institute in Afro-
American Studies for college and university
teachers. The institutes, which bring renowned
artists and lecturers to the campus, have
focused on such topics 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 in a
three-semester-hour course which is
offered at the same time as the Institute
and the current year’s topic.

Black Action Theater

Academically sponsored through the
Afro-American Studies Program, Black
Action Theater affords participants
instruction and experience in theatrical
productions of plays by Black authors.

Afro-American Cultural Center

The Afro-American Studies Program
encourages participation in the facilities
of the Afro-American Cultural Center.
The center serves as both a museum
and library of educational and cultural
artifacts and exhibits of Black culture. Thus,
it provides cultural enrichment for
black people of the Iowa City community
and a cultural meeting place for black
students. It also attempts to promote a
knowledge of Black culture which will
improve interracial understanding among
members of the University community.

Black Genesis Troupe

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

Significant Courses
Related to Afro-
American Studies

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

Business Administration

4252 Employment Relations and Public
Policy

Economics

6E:137 Problems in Urban
Economics

Education

7F:104 Education in a Developing
Countries

7F:130 Educational Sociology

7F:382 Seminar: Value-Problem in the
Administration of American
Education

7F:158 Socialization of the School-Age
Child

7U:133 The Culturally Different in
Educational Settings

5 a.h.
American Studies Program

Program Chair: Albert E. Stone

Instructors: professors Murray E. McDowell (History/Anthropology), Albert E. Stone (American Studies/Education), Karen T. Turner (University of Oregon, History/Anthropology)

Assistant Professor: John McDonald (American Studies/Education), Frederick Woods (University of Oregon, American Studies/Education)

Assistant Professor: Richard F. Herron (American Studies), Stephen J. Weatherby (University of Oregon, American Studies/History)

Jane A. Weeds (University of Oregon, American Studies/Education)

Instructor: Alyshia V. Voss (University of Oregon, American Studies/Education)

American Studies draws additional cooperation from the following faculty: History/Anthropology, Art and Art History, Communication and Theater Arts, Economics, Sociology, Geology, Geography, History, Journalism and Media Communication, Law, Linguistics, Music, Philosophy, Political Science, Psychology, Religion, Women's Studies, and American Studies.

Degrees offered: B.A., M.A., Ph.D.

In its coursework and for its majors, the American Studies Program offers an interdisciplinary introduction to American culture, past and present. The aim of the program is to train students and critics of culture who are broadly familiar with the dynamics of cultural experience. Students may combine cognate departments’ courses in American experience with the interdisciplinary courses and seminars of the American Studies Program to explore such aspects of life in the United States as perceived by historians, political scientists, sociologists, and others.

Bachelor of Arts

While the B.A. degree in American studies stresses broad training in cultural analysis and communication, rather than specific professional or vocational training, it provides preparation for a career in business, education, government, journalism, or social service; for advanced studies in the humanities, the social sciences, theology, or business; or for professional studies in law or medicine.

With his or her advisor’s assistance and approval, the student majoring in American studies develops an individual plan of study combining courses from cognate departments and programs with integrative American Studies Program courses which relate to a common period, topic, theme, or problem in American cultural experience. The major normally consists of 12 courses totaling 36 semester hours and including four courses (12 semester hours) in American and/or Afro-American studies, two courses (6 semester hours) in American history, and six courses (18 semester hours) in cognate departments and/or American studies.

The courses in American and/or Afro-American studies usually include:

451 American Values
450 Turning Points in American Culture

Any two of the following:

452 American Issues
452 Women in American Culture
454 Family and Sex Roles in American Life
455 Media Studies
458 Regional Studies

454 Sex, Race, and Ethnicity

459 American Music

4580 Introduction to American Society

4581 Introduction to Afro-American Culture

4510 Readings in American Studies

4512 American Studies

4540 American Studies

4544 Advanced Study in American Studies

4546 American Studies

4548 American Studies

4549 American Studies

4550 American Studies

4552 Childhood and Youth in American Culture

4555 Aging in America

4558 Visual Arts and American Culture

4581 American Institutions: The Business Corporation

4583 American Communities: the Coralville Strip

4584 Autobiography and American Culture

4585 Popular Culture

The major usually includes two of the following American history courses:

4586 Colophon for History Majors

4581 American History

4582 American History

Many historical-cultural, literature, and social science core courses provide relevant preparation for the American Studies major; 11.9 American Lives is especially recommended.
Doctor of Philosophy

The Ph.D. program in American studies requires a minimum of 71 semester hours of coursework, preparing the candidate in five areas: American studies seminars in interdisciplinary approaches to American culture; substantial coursework in a major field or fields; equivalent work in a second minor field or topic; courses in a minor field or topic; and tools, skills, or comparative culture study.

Although permitted considerable flexibility in planning a program, the American studies candidate must meet certain basic requirements. One is that all students directly engage in coursework and research and the cultural diversity of American life and experience. Some coursework is expected in such areas as Afro-American studies, women's studies, native American culture, or Chicano culture; this will be specifically explored on the candidate's oral exam. A second requirement is that each program will include substantial study of one period of American cultural history as defined to reflect the student's specific interests.

The candidate normally takes 45:200 Theory and Practice in American Studies 4 s.h.
45:201 History, Literature, and American Popular Culture 3 s.h.
Two other courses or seminars in American studies
Four courses in each of two fields or areas of American studies, either in a traditional discipline or on a topic, period, or problem approached from several different disciplines or methodological perspectives
Satisfactory performance on a comprehensive examination on coursework and basic concepts

The M.A. may also be taken with thesis, in which case 30 semester hours of coursework is the required minimum.
Consult department chair for details.

A joint program leading to the M.A. degree in American studies and the J.D. degree from the College of Law provides a broad cultural context for the study and practice of law. Similar joint programs may be arranged in other professional fields, including social work and journalism.

Internships

Qualified graduate students in American studies can arrange internships with the National Council of State, the Division of Historical Preservation, The University of Iowa Museum of Art, Living History Farms, the Herbert Hoover National Historic Site, and the Putnam Museum, Davenport. A candidate conducting research during such on-the-job training may receive academic credit.
Courses

Primarily for Undergraduates

451 American Indians 3.0
Introduction to American studies via representative works, artists, and cultural values in historical and contemporary perspectives.

452 American Indians 3.0
Topics and problems in American studies and women's studies.

453 Women in American Culture 3.0
Women and the family, femininity in American society and culture.

454 Native Studies 3.0
Studies in film, television, cartoons, the raw frontier.

456 Regional Studies 3.0
The American West.

457 American Music 3.0
Jazz, blues, or rock 'n' roll.

457A Lifestyles and the Future of Man 3.0
In-depth survey of a single theme or period in American culture, using a variety of materials and an interdisciplinary perspective; course topics include the 1800s, the interior and reality.

458 Women's Project 4.0
Independent research and writing on an interdisciplinary topic.

For Undergraduates and Graduates

4-108 Readings in American Studies 4.0

451 Literature and Culture of America Before 1860 4.0
This course explores the development of American culture through works of poetry, fiction, and non-fiction, and the influence of various artists on American culture. Students will be expected to complete two projects throughout the course. Students will also be evaluated on their participation in class discussions and their ability to submit assignments on time. Required reading: "American Romanticism" by Allen St. John. Course readings will be assigned in class. Students will be required to complete a final exam worth 40% of the course grade. The final exam will take place on the last day of class. The exam will be open-book and will allow the use of class notes and textbook readings. The exam will cover all major themes and concepts discussed in class, along with the readings assigned throughout the course.

452 Aesthetics and the History of Ideas 3.0
An overview of the philosophical, political, and social development of American culture from the 16th to the 19th century.

453 The Development of American Culture 3.0
This course is designed to provide students with an understanding of the development of American culture from its earliest beginnings to the present day. Students will be expected to complete assignments throughout the course, and to participate in class discussions and debates. The course will cover major aspects of American culture, including literature, art, music, and politics. Course readings will be assigned in class. Students will be required to complete a final exam worth 40% of the course grade. The final exam will take place on the last day of class. The exam will be open-book and will allow the use of class notes and textbook readings. The exam will cover all major themes and concepts discussed in class, along with the readings assigned throughout the course.

454 American and International Studies 3.0
An introduction to American studies and women's studies.

455 American Studies 3.0
Introduction to American studies and women's studies.

456 Regional Studies 3.0
The American West.

457 American Music 3.0
Jazz, blues, or rock 'n' roll.

457A Lifestyles and the Future of Man 3.0
In-depth survey of a single theme or period in American culture, using a variety of materials and an interdisciplinary perspective; course topics include the 1800s, the interior and reality.

458 Women's Project 4.0
Independent research and writing on an interdisciplinary topic.

459 American Indians 3.0
Introduction to American studies via representative works, artists, and cultural values in historical and contemporary perspectives.

460 Native American Culture 3.0
Women and the family, femininity in American society and culture.

464 Native Studies 3.0
Studies in film, television, cartoons, the raw frontier.

466 Regional Studies 3.0
The American West.

467 American Music 3.0
Jazz, blues, or rock 'n' roll.

467A Lifestyles and the Future of Man 3.0
In-depth survey of a single theme or period in American culture, using a variety of materials and an interdisciplinary perspective; course topics include the 1800s, the interior and reality.

468 Women's Project 4.0
Independent research and writing on an interdisciplinary topic.

470 American Indians 3.0
Introduction to American studies via representative works, artists, and cultural values in historical and contemporary perspectives.

471 Native American Culture 3.0
Women and the family, femininity in American society and culture.

474 Native Studies 3.0
Studies in film, television, cartoons, the raw frontier.

476 Regional Studies 3.0
The American West.

477 American Music 3.0
Jazz, blues, or rock 'n' roll.

477A Lifestyles and the Future of Man 3.0
In-depth survey of a single theme or period in American culture, using a variety of materials and an interdisciplinary perspective; course topics include the 1800s, the interior and reality.

478 Women's Project 4.0
Independent research and writing on an interdisciplinary topic.

480 American Indians 3.0
Introduction to American studies via representative works, artists, and cultural values in historical and contemporary perspectives.

481 Native American Culture 3.0
Women and the family, femininity in American society and culture.

484 Native Studies 3.0
Studies in film, television, cartoons, the raw frontier.

486 Regional Studies 3.0
The American West.

487 American Music 3.0
Jazz, blues, or rock 'n' roll.

487A Lifestyles and the Future of Man 3.0
In-depth survey of a single theme or period in American culture, using a variety of materials and an interdisciplinary perspective; course topics include the 1800s, the interior and reality.

488 Women's Project 4.0
Independent research and writing on an interdisciplinary topic.

490 American Indians 3.0
Introduction to American studies via representative works, artists, and cultural values in historical and contemporary perspectives.

491 Native American Culture 3.0
Women and the family, femininity in American society and culture.

494 Native Studies 3.0
Studies in film, television, cartoons, the raw frontier.

496 Regional Studies 3.0
The American West.

497 American Music 3.0
Jazz, blues, or rock 'n' roll.

497A Lifestyles and the Future of Man 3.0
In-depth survey of a single theme or period in American culture, using a variety of materials and an interdisciplinary perspective; course topics include the 1800s, the interior and reality.

498 Women's Project 4.0
Independent research and writing on an interdisciplinary topic.

For Undergraduates and Graduates

4.108 Readings in American Studies 4.0

451 Literature and Culture of America Before 1860 4.0
This course explores the development of American culture through works of poetry, fiction, and non-fiction, and the influence of various artists on American culture. Students will be expected to complete two projects throughout the course, and to participate in class discussions and debates. The course will cover major aspects of American culture, including literature, art, music, and politics. Course readings will be assigned in class. Students will be required to complete a final exam worth 40% of the course grade. The final exam will take place on the last day of class. The exam will be open-book and will allow the use of class notes and textbook readings. The exam will cover all major themes and concepts discussed in class, along with the readings assigned throughout the course.

452 Aesthetics and the History of Ideas 3.0
An overview of the philosophical, political, and social development of American culture from the 16th to the 19th century.

453 The Development of American Culture 3.0
This course is designed to provide students with an understanding of the development of American culture from its earliest beginnings to the present day. Students will be expected to complete assignments throughout the course, and to participate in class discussions and debates. The course will cover major aspects of American culture, including literature, art, music, and politics. Course readings will be assigned in class. Students will be required to complete a final exam worth 40% of the course grade. The final exam will take place on the last day of class. The exam will be open-book and will allow the use of class notes and textbook readings. The exam will cover all major themes and concepts discussed in class, along with the readings assigned throughout the course.

454 American and International Studies 3.0
An introduction to American studies and women's studies.

455 American Studies 3.0
Introduction to American studies and women's studies.

456 Regional Studies 3.0
The American West.

457 American Music 3.0
Jazz, blues, or rock 'n' roll.

457A Lifestyles and the Future of Man 3.0
In-depth survey of a single theme or period in American culture, using a variety of materials and an interdisciplinary perspective; course topics include the 1800s, the interior and reality.

458 Women's Project 4.0
Independent research and writing on an interdisciplinary topic.
overall and 3.0 in anthropology. In addition to the regular requirements for a major in anthropology, honors students must complete the department's honors seminar and honors research courses.

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

Master of Arts
The M.A. program is general in nature, designed to prepare the student 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 precludes consideration for admission to the Ph.D. program.

The number of semester hours of credit required for the M.A. with thesis may vary from 30 to 36, depending upon the student's previous anthropological training. The nonthesis program requires at least 36 semester hours of graduate work. A 30-hour M.A. degree without thesis is available in conjunction with a minor concentration in museology. The following are the distribution requirements at the M.A. level.

Either:
112:140 Social Anthropology and 112:240 Seminar: Social Anthropology or 112:201 Seminar: Anthropological Theory

These three:

In addition to the above:
One course in social institutions; One course in linguistics (including courses in the Department of Linguistics); and One course in archeology.

No more than 9 semester hours of courses outside of anthropology and no more than 3 semester hours of independent study may be applied toward the M.A. degree requirements in anthropology.

Students with previous training in anthropology, whatever their undergraduate major, may petition for permission to waive any part of the above distribution requirements.

Anthropology/
Museology Joint M.A.
Program
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 option 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 both scholarly research and teaching. The Ph.D. degree represents a balance between general competence in all the subfields of anthropology obtained at the M.A. level and professional specialization in one of the specializations of a student at The University of Iowa currently may select include archeology, linguistic anthropology, and sociocultural anthropology.

Training in specialization will be guided by a Ph.D. committee composed of members of the faculty competent in the particular areas and topics chosen by the student. The only limitations in program selection are based on the faculty's expertise in given areas or the feasibility of arranging for training and guidance.

These are the requirements:
At least 72 semester hours of graduate coursework; Demonstration of a reading knowledge of one foreign language; Mastery of a relevant research skill (for example, fluency in a foreign language or proficiency in a branch of mathematics, logic, computer programming, geology, or paleontology); Ethnographic or archeological specialization in a major geographic area (for example, North America, Mesoamerica, Oceania, Southeast Asia), 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 either as major or minor areas in socio-cultural or linguistic anthropology include: kinship or social organization, ethnohistory, language and culture, religion, cultural ecology, and urban anthropology. Examples of possible major topical areas for students in archeology include settlement pattern archaeology, environmental archaeology, geochronology, paleontology, and radiocarbon dating.

The comprehensive examination ordinarily will be taken when the student's coursework is completed or nearly completed; after the research skills requirements have been satisfied, and before he or she begins fieldwork.

All doctoral candidates are required to carry out original anthropological research. Ordinarily, students conduct fieldwork as the basis for their dissertations; occasionally, however, a research proposal may be carried out using only documents, collections, or other source materials.

All doctoral candidates are required to be adequately trained in techniques of gathering primary data in archaeological or ethnographic field research.
Graduate Admission

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

Any student with an M.A. with thesis may apply for admission to the Ph.D. program. A student admitted with an M.A. in anthropology from another institution may proceed directly to a specialized Ph.D. program. Admission to the Ph.D. program is limited to students who wish to conduct research in an area of interest and competence represented among the departmental faculty.

Applicants for admission to the graduate program must meet the general admission requirements of the Graduate College (see "Graduate College") and will be required to submit a completed University application form; transcripts of all previous undergraduate and graduate work; three letters of recommendation from individuals competent to judge the candidate's potential for graduate study; scores from the aptitude portion of the Graduate Record Examination; and at least one typed/written example of previous work (for example, a term paper or an original experiment). An applicant with an M.A. degree from another university must submit a copy of his or her master's thesis, an applicant who earned an M.A. without thesis or whose thesis is not yet complete must submit typed/written copies of three papers completed in graduate school. It is desirable that the applicant have at least a 3.0 grade-point average. However, applicants with lower grade-point averages may be admitted with conditions, such as requirements of Ph.D. program, to indicate potential for graduate work.

Graduate Minor in Anthropology

A graduate student from another department of the University may Minor in Anthropology. The number of credit hours and the selection of courses which constitute the minor should be determined in consultation with members of the faculty of the Department of Anthropology, and with appropriate members of the student's major department.

Assistantships

A limited number of teaching and research assistantships are available. Application for an award should be made directly to the chair, Department of Anthropology.

Facilities

The Department of Anthropology has access to the Iowa Archaeological Collections through the Office of the State Archaeologist. Prof. Thomas H. Clary maintains a field laboratory in Mexico. The University is a charter member of the Human Area Relations Project, an extensively annotated set of source materials on the peoples of the world—their environments, behavioral patterns, social lives, and cultures. The HARP and other library resources give anthropology students access to source materials on more than 400 different cultures.

Faculty

Members of the anthropology faculty have studied and lived in the Pacific islands, the Orient, the Caribbean, Mexico/Sentral America, and the Subarctic. Department faculty have recently conducted field research in Mexico, Belize, Guatemala, Micronesia, Thailand, the Canadian Subarctic, Peru, St. Lucia, and Iowa. Recent research by department faculty includes precontact trade networks and the role of hydraulic cultivation systems in the emergence of civilization in the Valley of Mexico, patterns of political and economic development of emerging nations, comparative ethnographic studies of hunting and gathering groups, archaeological investigations of Indian and historical sites in Iowa, alcohol use and abuse in Oceania, agricultural and economic decision making among rural peoples in northern Thailand, and Mayan linguistics in Guatemala.

Courses

For Undergraduates Only

193 Introduction to the State of Culture and Society 4 s.h.
195 Archaeology and Contemporary World 4 s.h.
196 Examination selected world problems from an anthropological perspective, comparing and contrasting current issues with those treated by diverse human groups in recent times and the distant past. May be taken in partial fulfillment of the College of Liberal Arts and Sciences core requirements.
391 Introduction to Anthropology and Physical Anthropology 4 s.h.
392 Survey of anthropology with emphasis on prehistory. Focus on man's physical prehistory and cultural diversity.
393 Language and Peaceful Behavior 4 s.h.
491 Nature and Limits of Social Order 4 s.h.
492 Fundamentals of Semiotics 4 s.h.
493 Introduction to the Heights of Premodern Society 3 s.h.
494 Methods of Approaching Anthropological Problems 3 s.h.
591 African Family as an Ethnographic Problem 3 s.h.
592 Evolution of Agriculture 3 s.h.
593 History of the Old World 4 s.h.
594 Essay in Archaeology 2 s.h.
595 Historical Archaeology 2 s.h.
596 History of the New World 4 s.h.
597 North American Archaeology 3 s.h.
598 Prehistoric Archaeology 3 s.h.
599 Special Topics in Anthropology 2 s.h.
791 Thesis: The Long Tradition 3 s.h.
792 Directed Reading 2 s.h.
793 Individual Study 2 s.h.
794 Practicum in Anthropology 3 s.h.
795 Hunter Seminar: Archaeology 3 s.h.
796 Hunter Seminar: Ethnography 3 s.h.
797 Hunter Seminar: Cultural Anthropology 3 s.h.
798 Hunter Seminar: Social Anthropology 3 s.h.
799 Hunter Seminar: Cross-Cultural Anthropology 3 s.h.
891 Field Work 3 s.h.
892 Field Work 3 s.h.
893 Field Work 3 s.h.
894 Field Work 3 s.h.
895 Field Work 3 s.h.
896 Field Work 3 s.h.
897 Field Work 3 s.h.
Archaeology

113-111: Modern History
3, 5

Principles and methods of Middle and Late Paleolithic and Mesolithic cultures. Emphasis on zooarchaeology and lithic technology. Pre-instructor: 113-115,
115-116.

113-112: Archaeology
3, 5

Study of prehistoric man and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-113: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Prerequisites: 113-114, 113-115.

113-114: Prehistoric and Protohistoric America
3, 5

History of prehistoric America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-115: Prehistoric and Protohistoric America
3, 5

History of prehistoric America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-116: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-117: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-118: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-119: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-120: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-121: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-122: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-123: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-124: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-125: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-126: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.

113-127: Prehistoric America
3, 5

Study of the development of man in North America, the Americas, and the development of culture and technology. Special emphasis on the fundamental principles and techniques of archaeology. Pre-instructor: 113-115.
As far as possible, the design of academic programs is arranged to meet the individual student's needs. It permits the development of specific as well as general programs in studio arts and history. The major requirements of the undergraduate program are broad and flexible; specialization is discouraged. The art history major requires at least an introduction to studio work. The studio major requires development of a foundation in art history and in at least six areas of studio art. The aim of the joint curriculum is to give students a basic understanding of art and aesthetics; it does not focus on particular short-term styles.

**Bachelor of Arts**

The B.A. candidate in art or art history must earn at least 74 semester hours of credit in non-art courses, but may apply no more than 68 non-art hours of credit toward the total of 124 hours of credit required for the degree. The candidate must meet the College of Liberal Arts' historical-cultural core requirement with 11:37 Form and Theory in the Visual Arts, and either 11:38 Art in the Western World or 11:42 Art in East and West. Cross-listed courses originating in the School of Art and Art History may not be counted toward fulfilling the general liberal arts core and hour requirements.

**Studio Emphasis**

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

- **Intermediate art history** (12 s.h.)
- **1A: 1-2 Collagism** (2 s.h.)
- **1A: 3 Basic Drawing** (2 s.h.)
- **1A: 4 Basic Design** (2 s.h.)

Any two of the following courses:

- **10:80 Ceramics I** (2 s.h.)
- **10:84 Introduction to Metalworking and Jewelry** (2 s.h.)
- **1J38 Multimedia I** (2 s.h.)
- **1N:15 Undergraduate Sculpture I** (2 s.h.)

Any two additional studio courses from among:

- **Dawn**
- **Drawing**

- **Painting**
- **Photography**
- **Printmaking**
- **Textiles** (if cross-listed with an art number)

Electives to bring the total number of credits in art to a minimum of 38 semester hours.

No more than 30 semester hours of credit in art courses the school lists will be counted toward the total of 124 hours of credit 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 beyond the basic studio courses and including at least two different studio areas.

Undergraduate transfer students majoring in studio must, at their first registration, show 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 9-12 semester hours of studio courses, as advised, and 15 semester hours of intermediate and advanced art history.

Electives must raise the total of art courses to a minimum of 38 semester hours and may raise the total to a maximum of 50 semester hours. Art courses taken beyond this level do not count toward the B.A. degree.

Non-art credits must include two or more 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 their 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 studio or art history emphasis, satisfying the requirements described above, and, in addition to the general requirements for teacher certification (see the "College of Education" section of the Catalog), must satisfy these specific requirements:

- **1E:186 Concepts in Art Education** (3 s.h.)
- **1E:188 Art Education Studio** (3 s.h.)
- **7E:143 Methods: Art** (3 s.h.)
- **7E:185 Advanced Methods: Art** (3 s.h.)
- **7E:187 Seminar: Curriculum and Student Teaching** (1-3 s.h.)

The following courses are electives:

- **7E:187 Aesthetic Education** (2 s.h.)
- **7E:187 Aesthetic Education** (2 s.h.)
- **7E:230 Art Education and the Museum** (3 s.h.)

**Bachelor of Fine Arts (studio only)**

Prospective B.F.A. students must apply to enter the program following completion of at least one semester of work in the major studio area, but before completion of 30 semester hours in art.

The B.F.A. requires 62 semester hours of credit in School of Art and Art History courses. In addition to the general education and major requirements listed above for the B.A. degree with studio emphasis, the B.F.A. candidate must complete three courses in major studio beyond the fundamental course, and must complete at least two of the second semester courses of the same studio area.

**Master of Arts in Art History**

An M.A. student in art history is expected to acquire a broad general knowledge of art history as an academic and humanistic discipline; become familiar with major periods and
monuments of world art; and gain proficiency in techniques of research within selected areas.

Specific requirements include:

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

A minimum of 30 semester hours of graduate-level coursework, with a grade-point average of 3.0 or higher; and

At least a one-semester intermediate (100/level) course completed with at least a 3.0 grade in each of five of the following areas of art history:

- Ancient (to 300 A.D.)
- Medieval (300-1300)
- Renaissance to Baroque (1300-1750)
- Nineteenth Century to Modern
- Oriental

Prize and Pre-Columbian

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

- 200-294 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 14-21 s.h.
- Studio 0-8 s.h.
- Courses outside the school 0-9 s.h.

Students with little or no undergraduate studio training are required to take two courses in different studio fields; students with substantial undergraduate studio training will be exempted from the graduate studio requirements. A student preparing to teach in both the art history and studio areas will hire 12 to 18 semester hours of studio coursework, with a minimum of 9 semester hours in each subject, in addition to the undergraduate requirement for a studio major, and will also satisfy the drawing requirement. Studio courses may be taken on a satisfactory/unsatisfactory basis.

M.A. candidates with undergraduate majors in art history are encouraged to take courses outside the school.

Within the first 20 semester hours of graduate work, the M.A. candidate will be expected to demonstrate the ability to read art historical writings in an appropriate foreign language, normally German or French, though other languages, including oriental languages, may be acceptable. This requirement may be satisfied by the Graduate School Foreign Language Test (GSFLT), examination by the appropriate University of Iowa language department, satisfactory completion of the final semester of a Ph.L. language reading course, or satisfactory completion at least a 3.0 grade-point average of the fourth semester of a college or university language course.

Qualification for the M.A. degree requires a comprehensive written and oral examination, broadly covering the entire field of art history.

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

Master of Arts in Studio

The school offers a studio M.A. major in painting, drawing, sculpture, prints, design, photography, ceramics, metalworking and jewelry, or multimedia.

The degree requires:

- The B.A. or B.F.A. in an equivalent to that offered at The University of Iowa;
- At least 12 semester hours in major studio, a total of at least 21 semester hours in studio courses, 9 semester hours of studio hours courses outside art and art history; and
- Studio and written theses.

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

A student preparing to teach in both the studio and art history areas may offer an art history minor of 15 semester hours, including 200-294 Seminar: Methodology of Art History and Criticism, and one other seminar. These hours are in addition to the University's undergraduate requirement for an art minor major, and in combination with the undergraduate hours must satisfy the distribution requirement for art history.

Master of Arts in Art Education

Requirements for the M.A. in art education are:

- The B.A. or B.F.A. in an equivalent to that offered at The University of Iowa;
- Teaching certification in art;
- Either 12 semester hours of graduate credit in studio art and 6 in art history, or 6 in studio art and 12 in art history;
- A minimum of 18 semester hours of graduate credit; and
- A written thesis or a comprehensive examination in both education and a related field; and
- A written thesis on a subject in art education or art history, or a studio thesis, accompanied by a brief statement of the student's technical, aesthetic, and/or psychological approach.

Master of Fine Arts (studio only)

The school offers the M.F.A. degree with a major in painting, drawing, sculpture, prints, design, photography, ceramics, metalworking and jewelry, or multimedia. The M.F.A. candidate must have an M.A. degree in an equivalent to that offered at The University of Iowa, and have a minimum of 60 semester hours of graduate work, including at least 15 semester hours in a major studio subject, at least 6 semester hours in a minor studio field, 9 semester hours in art history and theory of art, and 8 semester hours in courses outside the school. Thesis credits earned in an M.A. program are not applicable toward the M.F.A. credit requirement.
Doctor of Philosophy (art history only)

Course requirements beyond the M.A. program outlined above are:
Two art history seminars (with two different instructors) 4-6 s.h.
Additional art history courses 18-28 s.h.
Courses outside the school 0-12 s.h.

Students holding the M.A. from another institution must take the school's M.A. comprehensive examination within the first two regularly scheduled examination dates following admission.

Within the first 15 semester hours of graduate work beyond the M.A., the doctoral student must demonstrate ability to read art historical writings in two appropriate foreign languages. For majors in European art, one language will normally be German; for majors in Oriental art, Sanskrit, Chinese, or Japanese may be acceptable. The procedure for satisfying the Ph.D. language requirement is as explained in the description of M.A. in art history program.

The student must take a comprehensive examination in one major field (6 semester hours) and two minor fields (3 semester 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 a discipline or disciplines outside the school, for example, religion, history, or philosophy.

The student must prepare a written dissertation constituting an original scholarly contribution to the field. The school will allow up to 6 semester hours of credit toward the art history course requirements for dissertation preparation. The student must formally present the dissertation topic for faculty approval. The student is given a final oral examination on the dissertation.

Graduate Admission: Studio

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

Painting, ceramics, design, metalworking or jewelry, or multimedia majors must submit slides and/or photographs of their work in their major fields; only applicants who are in residence at the University may submit original work in these areas. Drawing majors must submit original drawings (include figure drawings). Printmaking majors must submit from 6 to 20 original prints and drawings. Photography majors must submit a selection of original photographs. Sculpture majors should send 10 black and white photos—slides, if color is important—of their work. Studio applicants must also submit examples of their work in other areas, and must submit three letters of recommendation.

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 in art education must submit both 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 applications is June 15 for the fall semester, November 15 for the spring semester, or April 15 for summer registration.

Assistantships and Scholarships

Assistantships paying approximately $4,000 per academic year for 20 hours of departmental duties weekly are awarded to graduates on a competitive basis. Half-scale assistantships are also available. The award of an assistantship entitles the recipient to in-state tuition rate. Scholarships paying partial or full tuition and entailing no departmental duties require at least a 3.0 cumulative grade-point average. These financial aids are generally awarded to students who have been in residence for at least one semester, so that faculty members have had an opportunity to observe their performance and potential.

Facilities

School facilities include an art library containing 52,000 volumes; a visual materials library containing 190,000 slides and 80,000 photographs; an intaglio printshop; facsimile and equipment for large-scale iron and bronze casting processes, 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 workshop for woodworking, metalworking, and industrial design; electroforming equipment; and video equipment. While not a School of Art and Art History faculty, the University's Center for New Performing Arts involves the school's faculty members and students in most of its activities. The Rockefeller Foundation established the center to encourage collaboration among such areas as art, dance, writing, film, music, and theater.

Courses

Art History

Primarily for Undergraduates

130 Introduction to African, Oceanic, and Pre-Columbian Art 3 s.h.
Traditional arts of the tribal cultures of Black Africa and the Pacific, and of the Americas before the European conquest.
Studio courses numbered through 99 are primarily for undergraduates and may not be repeated for credit except where indicated. Studio courses numbered 100 through 199 may be repeated for credit except where specified.

110:01 Principles in Design I—Form and Structure
110:02 Principles in Design I—Form and Structure
110:03 Principles in Design I—Form and Structure
110:04 Principles in Design I—Form and Structure

Course Requirements

A. Studio course may be repeated for credit except where indicated.

B. Studio course may be repeated for credit except where indicated.

C. Studio course may be repeated for credit except where indicated.

D. Studio course may be repeated for credit except where indicated.

E. Studio course may be repeated for credit except where indicated.

F. Studio course may be repeated for credit except where indicated.

G. Studio course may be repeated for credit except where indicated.

H. Studio course may be repeated for credit except where indicated.

I. Studio course may be repeated for credit except where indicated.

J. Studio course may be repeated for credit except where indicated.

K. Studio course may be repeated for credit except where indicated.

L. Studio course may be repeated for credit except where indicated.

M. Studio course may be repeated for credit except where indicated.

N. Studio course may be repeated for credit except where indicated.

O. Studio course may be repeated for credit except where indicated.

P. Studio course may be repeated for credit except where indicated.

Q. Studio course may be repeated for credit except where indicated.

R. Studio course may be repeated for credit except where indicated.

S. Studio course may be repeated for credit except where indicated.

T. Studio course may be repeated for credit except where indicated.

U. Studio course may be repeated for credit except where indicated.

V. Studio course may be repeated for credit except where indicated.

W. Studio course may be repeated for credit except where specified.
1291 Individual Instruction in Multimedia
Prerequisite: consent of instructor.

1292 Individual Instruction in Photography
Prerequisite: consent of instructor.

1293 Individual Instruction in Printmaking
Prerequisite: consent of instructor.

1294 Individual Instruction in Sculpture
Prerequisite: consent of instructor.

1295 Lecture-Seminar
Prerequisites: 1290 and 1291.

1296 Individual Instruction in Typography
Prerequisite: consent of instructor.

1301 Individual Instruction in Visual Arts
Prerequisite: consent of instructor.

1401 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1402 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1403 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1404 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1405 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1406 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1407 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1408 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1409 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1410 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1411 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1412 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1413 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1414 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1415 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1416 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1417 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1418 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1419 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1420 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1421 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1422 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1423 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1424 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1425 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1426 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1427 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1428 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1429 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1430 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1431 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1432 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1433 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1434 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1435 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1436 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1437 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1438 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1439 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1440 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1441 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1442 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1443 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1444 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1445 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1446 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1447 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1448 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1449 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1450 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1451 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1452 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1453 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1454 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1455 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1456 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1457 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1458 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1459 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1460 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1461 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1462 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1463 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1464 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1465 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1466 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1467 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1468 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1469 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1470 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1471 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1472 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1473 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1474 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1475 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1476 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1477 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1478 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1479 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1480 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1481 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1482 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1483 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1484 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1485 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1486 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1487 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1488 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1489 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1490 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1491 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1492 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1493 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1494 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1495 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1496 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1497 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1498 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1499 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1500 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1501 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1502 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1503 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1504 Individual Instruction in Art Education
Prerequisite: consent of instructor.

1505 Individual Instruction in Art Education
Prerequisite: consent of instructor.
Asian Languages and Literature

Department chair: Joseph Fox

Faculty: primers by Dorothea Drachman from professor emeritus J.P. Mal, Beatrice Cohn, Brendan Poblocki, Maureen Robertson

Undergraduate Programs

The department offers two programs leading to the Bachelor of Arts degree, one primarily for those interested in studying the culture and civilization of traditional and modern Asia, and the other intended for those who wish to concentrate on developing competence in one of the Asian languages offered. Graduates of either program may find careers in government, banking, and commerce in America and Asia. The programs also provide an excellent background for advanced study in literature, history, art, religion, political science, geography, anthropology, or sociology. The department urges its undergraduate majors to study in Asia as early as possible, and every effort is made to facilitate transfer of credit with universities in Asia.

Undergraduate majors are exempted from the literature core requirement and the historical-cultural core requirement of the College of Liberal Arts; the foreign language requirement is met by study of an Asian language.

The Program in Asian Studies

This multidisciplinary program is designed to introduce students to East and South Asian cultures, their modern and traditional, and to contemporary political and social problems in Asia. Asian historians join language and literature faculty in teaching the courses. Each student selects a single area (for example, China, Japan, or South Asia) upon which to concentrate for the study of language. Courses for the major:

39:55-59 Civilizations of Asia 4 a.h.
39:19-20 Asian Humanities 3 a.h.
For students of Chinese studies:
39:8-9 First-Year Chinese 12 a.h.
39:10-11 Second-Year Chinese 12 a.h.
For students of Japanese studies:
39:7-8 First-Year Japanese 12 a.h.
39:8-9 First-Year Japanese 12 a.h.
For students of South Asian studies:
39:21-22 First-Year Sanskrit 8 a.h.
39:18-19 Asia: Half the World 3 a.h.
Additional courses relating to Asia 6 a.h.

Major in Asian Languages and Literature

Courses in history and literature provide an understanding of the cultural background for language study. Courses requirements for the major:

39:8-8 Civilizations of Asia 4 a.h.
39:18-20 Asian Humanities 3 a.h.
For students of Chinese:
39:8-8 First-Year Chinese 12 a.h.
39:8-9 First-Year Chinese 12 a.h.
39:10-11 Second-Year Chinese 12 a.h.
For students of Japanese:
39:8-9 First-Year Japanese 12 a.h.
39:105-106 Third-Year Japanese 12 a.h.
For students of Sanskrit:
39:21-22 First-Year Sanskrit 8 a.h.
Two semesters of:
39:188 Readings in Sanskrit Texts 3 a.h.

Students with previous knowledge of Chinese, Japanese, or Sanskrit will be tested before registration, and will be placed in the appropriate course at an advanced level.
Honors

Students with junior status who maintain a 3.25 grade-point average or above are encouraged to enroll in the Honors Program. With the permission of the departmental chair and a faculty sponsor selected from among Asian specialists in any department, the student will register for 39:191 Honors Tutorial and 39:195 Senior Honors Thesis. To receive a B.A. with honors, the student must complete an acceptable thesis based on original research in an appropriate area of Asian studies.

Master of Arts in Asian Civilization

Graduate study in Asian civilization is designed to prepare students for careers in high school teaching, government service, or commerce, where a knowledge of an Asian language and a culture would be helpful. It also provides excellent preparation for advanced study on the doctoral level. All students are required to write an M.A. thesis in English using Chinese, Japanese, or Indian language sources. The thesis may count for 4 semester hours of the 30 required. All students must maintain a 3.0 grade-point average.

Students will be required to demonstrate language competence by passing a departmental examination at the conclusion of the program. Language competence for students of Chinese and Japanese will be at the level of the current year's second-year, modern and first-year classical language; for students of modern South Asia, at the level of the completion of third-year Sanskrit; for students of modern South Asia, at the level of second-year Sanskrit.

In addition, students will be examined on the history of China, Japan, or South Asia, and in two appropriate areas from among Chinese, Japanese, or South Asian history, literature, art, or religion; Chinese linguistics, or philosophy; Japanese anthropology, linguistics, or politics; or South Asian social sciences. The department can accommodate native speakers of Chinese or Japanese who wish to work toward professional competence in Asian civilization. A curriculum for such a student would exclude any modern language work, and would include 20 semester hours of content courses on Asia, as well as 4 semester hours for the M.A. thesis. All candidates are expected to fulfill the general requirements of the Graduate College.

Graduate Admission

Applicants for admission must meet the general admission requirements of the Graduate College, except that a minimum grade-point average of 3.75 is required for conditional admission, 3.0 for regular admission. In addition, applicants must submit a specimen of their writing—such as a term paper, term paper, or graduate thesis—to the Department of Asian Languages and Literature. All applications for graduate awards for the following academic year are due by March 15. Applications for admission without support will be accepted until July 15 for the fall semester on December 15 for the spring semester. The candidate is advised to take the Graduate Record Examination at an early date, since an admission decision cannot be made until scores are received.

Library Facilities

Since 1980 the University library has been purchasing all books on Asia issued by major publishers in Western languages. The library's reference collection in the Chinese and Japanese languages is more than adequate for basic research; it includes approximately 38,000 books, periodicals, and microforms. It is particularly strong in literature, history, art, and philosophy, and it is constantly being augmented by purchases of books and periodicals necessary for research on contemporary society. The library regularly acquires publications from India in Sanskrit and English.

Courses

Undergraduate Language

39:1 Chinese for the B.A. 4 sh.
Introduction to spoken Mandarin, with some emphasis on basic culture patterns through folk tales, music, and literary genres.
Introduction to spoken Japanese, with emphasis on everyday use for traveling and living in Japan, including introduction to Japanese culture and civilization.
39:2 Chinese for the B.A. 4 sh.
Further study of spoken Mandarin with more emphasis on the written language. Continuation of 39:1, which is prerequisite.
Continued emphasis on spoken practical spoken Japanese, with a major introduction to the writing system. Continuation of 39:2, which is prerequisite.
39:4 First-Year Chinese 4 sh.
The course teaches the sound system of Mandarin Chinese, basic grammatical patterns, reading and writing Chinese characters; includes the Pinyin alphabet, and pronunciation. Either fall semester or 39:5, which is prerequisite.
39:5 First-Year Chinese 4 sh.
Intermediate introduction to modern Japanese. Satisfies the B.A. foreign language requirement. Either fall semester or 39:4, which is prerequisite.
39:6 First-Year Chinese 4 sh.
Intermediate introduction to modern Japanese. Satisfies the B.A. foreign language requirement. Either spring semester or 39:5, which is prerequisite.
39:10 Second-Year Chinese 4 sh.
Continues the auditory-oral approach of first-year Chinese. Emphasis is on the vocabulary and sentence structure of modern Chinese through newspaper articles, short stories, and short plays. Either fall semester or 39:9, which is prerequisite.
Continues the auditory-oral approach of first-year Chinese. Emphasis is on the vocabulary and sentence structure of modern Chinese through newspaper articles, short stories, and short plays. Either spring semester or 39:10, which is prerequisite.
Continues the auditory-oral approach of first-year Japanese. Emphasis is on the vocabulary and sentence structure of modern Japanese through newspaper articles, short stories, and short plays. Either fall semester or 39:13, which is prerequisite.
Continues the auditory-oral approach of first-year Japanese. Emphasis is on the vocabulary and sentence structure of modern Japanese through newspaper articles, short stories, and short plays. Either spring semester or 39:12, which is prerequisite.
Three-hour course in basic Japanese, emphasizing reading and writing skills. May be taken in any order.
39:15 Second-Year Sanskrit 4 sh.
Thousand-year classical Sanskrit texts, including the Mahabharata, the Vedas, and the Vedangas. Prerequisite: 39:12 or permission of instructor.
39:16 Second-Year Sanskrit 4 sh.
A study of Sanskrit and other religions-philosophical texts. Pre-requisite: 39:15 or permission of instructor.
39:18 First-Year Chinese 4 sh.
Reading of advanced modern Chinese texts with further practice in speaking and writing. Either fall
Language Courses for Graduate Students

28-160 Classical Japanese
Introduction to classical Japanese of the late Nara period. States will be primarily from Choson-k万, with emphasis on the development of the kana writing system and the morphological analysis and usage. (Offered in Japanese. Prerequisite: ND 215.)

28-161 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-162 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-163 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-164 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-165 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-166 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-167 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-168 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-169 Classical Japanese
Further study of classical Japanese literature. (Offered in Japanese. Prerequisite: ND 216.)

28-160 Three-Year Japanese
Introduction to Three-year Japanese, with further practice in speaking and writing. Offered in Japanese. (Offered in Japanese. Prerequisite: ND 216.)

28-162 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

28-163 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

28-164 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

28-165 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

28-166 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

28-167 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

28-168 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

28-169 Three-Year Japanese
Continuation of course 28-160. (Offered in Japanese. Prerequisite: ND 216.)

Literature Courses in English

28-160 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-161 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-162 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-163 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-164 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-165 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-166 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-167 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-168 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

28-169 Japanese Literature
The literatures of ancient India in translation, poetry and prose. (Offered in English. Prerequisite: ND 215.)

Civilization Courses—Introduction in English

28-160 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-161 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-162 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-163 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-164 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-165 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-166 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-167 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-168 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)

28-169 Chinese Civilization
Introduction to Chinese civilization, emphasizing heating, literature, history, philosophy, art, medicine, and current issues. (Offered in English. Prerequisite: ND 215.)
Bachelor of Science

The Bachelor of Science program in biochemistry prepares the student, upon graduation, to work as a biochemist in certain positions requiring no further formal training. It is also an excellent background for graduate study in biochemistry and related sciences, or professional degree work in the health sciences.

In addition to the College of Liberal Arts general requirements, the Bachelor of Science degree in biochemistry requires:

22M:15-16 Calculus I, II 8 s.h.
28:17-18 Introductory Physics I, II 8 s.h.
37:3 Principles of Animal Biology 5 s.h.
21:1 Introduction to Botany 4 s.h.
61:157 General Microbiology 4 s.h.
61:147 Survey of Immunology 3 s.h.

Other biological area:
4:13 Principles of Chemistry I 3 s.h.
4:14 Principles of Chemistry II 3 s.h.
4:15(20) Elementary Chemistry Laboratory I 2 s.h.
4:12-12 Organic Chemistry I, II 6 s.h.
4:13 Physical Chemistry I 3 s.h.
4:132 Physical Chemistry II 3 s.h.
4:135 Physical Biochemistry 4 s.h.
4:14 Intermediate Chemistry Laboratory I 2 s.h.

99:100 Seminar: Undergraduate 0-1 s.h.
99:150 The Chemistry of Biological Materials 3 s.h.
99:150 Experimental Biochemistry 4 s.h.
99:150 Biochemistry of Informational Macromolecules 3 s.h.
99:156 Research: Independent Study (may be taken for honors) at least 6 s.h.

Advanced science electives at least 15 s.h.

Bachelor of Arts

In addition to the College of Liberal Arts general education requirements, the Bachelor of Arts degree in biochemistry requires:

22M:15 Mathematics for the Biological Sciences 4 s.h.
22M:16 Calculus for the Biological Sciences 4 s.h.
29:11-12 College physics 8 s.h.
37:3 Principles of Animal Biology 5 s.h.
21:1 Introduction to Botany 4 s.h.
61:157 General Microbiology 4 s.h.

Other biological area:
4:13 Principles of Chemistry I 3 s.h.
4:14 Principles of Chemistry II 3 s.h.
4:16 Elementary Chemistry Laboratory I 2 s.h.
4:12-12 Organic Chemistry I, II 6 s.h.
4:130 Physical Chemistry for the Life Sciences 3 s.h.
99:100 Seminar: Undergraduate 0-1 s.h.
99:150 The Chemistry of Biological Materials 3 s.h.
99:150 Experimental Biochemistry 4 s.h.
99:150 Biochemistry of Informational Macromolecules 3 s.h.
99:156 Research: Independent Study (may be taken for honors) at least 6 s.h.

Honors Program

Qualified students may earn an honors degree by doing special work in 99:140 Experiential Biochemistry and 99:156 Biochemistry: Independent Study. The student presents the results of his or her research in a report written in the form of a journal article and in an oral report in 99:100 Seminar: Undergraduate.

Teacher Certification

Biochemistry students planning to qualify for teacher certification should include 75:100 Introduction to Secondary School Teaching, 75:151 Science
Methods: Individual Instruction in Science, and 75-152 Science Methods III: Resources and Teaching Strategies among the College of Education courses taken to meet certification requirements.

Other Combined Programs
It is possible, especially in the B.A. program, to include courses from other disciplines, such as pre-law, psychology, or journalism permitting individualization of the curriculum as preparation for one of the growing variety of vocations in which biochemistry is having an impact.

It is also possible for a B.A. student in biochemistry to complete the specified course requirements in three years and satisfy the requirements for remaining advanced science electives during the first year of dental or medical school.

Graduate Programs, Facilities, Faculty, Courses
See "Biochemistry" in the College of Medicine section of the Catalog for descriptions of the department's graduate programs and facilities, and for fellowship roster and course offerings.

Biology
Coordinator: Joseph Fleming
Degree Offered: B.A., B.S.

The major in biology is designed to further students understanding and appreciation of living organisms. In order to prepare students for careers in which a detailed understanding of aspects of organisms is essential.

These careers include teaching, laboratory and field research, and testing, clinical work, counseling, and administration in agricultural, environmental, and health sciences as well as numerous specialized and interdisciplinairy areas. Potential employers include educational institutions, foundations, government agencies, publishers, industrial firms, hospitals, zoos, and museums.

Completion of an undergraduate major in biology generally prepares the student for work at a technical level, or for teaching secondary school (which also require certification). It also prepares the student for entry into graduate or professional school in areas of biological science, medicine, and other health professions, agriculture, environment, and conservation programs, and related areas.

Graduate or professional education is generally required for teaching positions in higher education, for independent clinical work, and for the direction of laboratory and field research.

The Undergraduate Program
The science requirements are identical for the Bachelor of Arts and Bachelor of Science degrees with a major in biology. They total 34 semester hours, as follows:

2:1 Introduction to Botany 4 s.h.
37:12 Principles of Animal Biology 4 s.h.
*2:129 Fundamental Genetics 3 s.h.
or
*37:128 Fundamental Genetics 3 s.h.
or
*37:129 Fundamental Genetics Laboratory 2 s.h.
or
*37:128 Fundamental Genetics Laboratory 2 s.h.
*2:131 Evolution 4 s.h.
or
*37:131 Evolution 4 s.h.
37:105 Cell Physiology 4 s.h.
Electives in botany microbiology, zoology, or geology 4 s.h.
Paleontology 12 s.h.
The twelve elective hours must be in courses numbered 100 or above, excluding 37:100 Plants and Human Affairs, 37:125 A Planet in Crisis, and similar courses directed primarily at nonscience students; and including no more than three semester hours in botany and zoology honors courses, and 2:133 Special Topics and 37:190 Introduction to Research.

Requirements for the major in biology also include these courses in other disciplines:

4:13-14 Principles of Chemistry 10 s.h.
4:16 Elementary Chemistry Laboratory I 2 s.h.
4:121 Organic Chemistry I 3 s.h.
99:120 The Chemistry of Biological Materials 3 s.h.
29:11-12 College Physics 8 s.h.
29:17-18 Introductory Physics I-II 8 s.h.
22M:26 Calculus I 4 s.h.
or
25M:26 Calculus for the Biological Sciences 3 s.h.
or
22M:35 Engineering Calculus I 4 s.h.
89:10 Expository Writing 3 s.h.

Biology students planning to apply for admission to The University of Iowa College of Medicine must also take 4:14 Intermediate Chemistry Laboratory I and 89:140 Experimental Biochemistry. Those applying to other medical schools may also be required to take 4:122 Organic Chemistry II.

Biology students planning to teach in high schools should consult with advisers in the College of Education concerning psychology, education, and American education courses required for teaching certification.

Minor
A minor in biology is available for students majoring in other subjects. The biology minor requires 18 semester hours of credit in botany, microbiology, zoology, or geology (palaeontology), courses taken at The University of Iowa, and including at least 12 semester hours in 100-level courses, excluding those designed primarily for nonscience students. Biology courses taken at other institutions or taken on a pass-fail basis will not apply toward requirements for the minor in biology.

Honors
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 coursework in the departments of Botany and Zoology, including at least 2 semester hours in 2:198 Honors Laboratory Research or 37:198 Honors Laboratory Research.
Graduate Programs

The departments of Botany and Zoology offer Master of Science degree programs in biology; for descriptions, see "Botany" and "Zoology" in this section of the Catalog.

Botany

Department chair: Jeffrey T. Schaal

Degree offered: M.A., M.S., Ph.D. B.A., B.S., M.S. in biology, junior and senior with the Department of Zoology

Botany is a science contributing to our understanding of plants, their significance as a part of earth's living beings, their agriculture, reproduction, diversity, evolution, behavior, and relation to human affairs. Training of professional botanists for teaching and research positions in colleges, universities, governmental agencies, and industrial firms is available. Students majoring in botany are often preparing to enter careers in fields related to the plant sciences, such as agriculture, forestry, horticulture, plant breeding, microbiology, the chemistry of natural products, ecology, medicine, environmental law, pharmacy, and zoology.

Bachelor of Arts

In addition to the general requirements of the College of Liberal Arts, students majoring in botany are required to take:

2:1 Introduction to Botany 4 s.h.

One course from each of these five groups (20 semester hours total):

Genetics
2:104 Cytogenetics 3 s.h.
2:106 Fundamentals of Genetics 3-4 s.h.
2:160 Genetics and Biogeoglossy of Cell Organelles
Phylogeny and Cell Biology
2:108 Plant Physiology 4 s.h.
2:110 Plant Anatomy 4 s.h.
2:114 Structure and Physiology of Plant Cells
Biology of Vascular Plants
2:11 Plant Diversity 4 s.h.
2:13 Biology of the Local Flora 4 s.h.
2:13 Plant Anatomy 4 s.h.
2:180 Endocrinology 4 s.h.
2:121 Quaterynary Palynology 2 s.h.

Biology of Non-Vascular Plants
2:170 Physiology 4 s.h.
2:105 Bryology 4 s.h.
2:107 Mycology 4 s.h.

Taxonomy, Ecology, and Evolution
2:101 Plant Taxonomy 4 s.h.
2:111 Plant Ecology 4 s.h.
2:116 Plant Animal Interactions 3 s.h.
2:131 Evolution 4 s.h.

Two 100-level courses in botany or cognate fields (zoology, biochemistry, microbiology) 5 s.h.

Chemistry (inorganic, organic/biochemistry) 10 s.h.
22M:15 Mathematics for the Biological Sciences
22M:20 Elementary Functions or equivalent
Recommenced: 22M:25 Calculus I 4 s.h.
29:11:12 College Physics I 3 s.h.
13:1 Principles of Physical Geology 3 s.h.
12:4 Principles of Historical Geology 2 s.h.
61:157 General Microbiology 4 s.h.
61:120 The Chemistry of Biological Materials 3 s.h.

Entrants majoring in botany are advised to obtain a strong background in courses in zoology.

Students preparing to teach in secondary schools should consult the "College of Education" section in the Catalog regarding requirements for teacher certification.

The Honors Program

An undergraduate program leading to graduation with honors provides opportunities for participation in independent research projects guided by professional staff members. Prerequisites for admission to the program are senior standing and cumulative grade-point averages of 3.0 overall and 3.5 in botany. In addition to the regular requirements for the B.A. degree, honors students must complete 3 semester hours of research during the senior year, maintain the grade-point averages required for admission to the program, and pass an honors examination at the end of the senior year.

Biology Major

Students interested in majoring in biology now have this alternative available to them. See "Botany" in this section of the Catalog.

Graduate Programs

An advanced degree enhances career opportunities in botany. The department offers advanced degrees in many subdisciplines. Graduate training frequently involves interdisciplinary study, the creation of new areas of research, and the use of genetics and eclogy. It requires some coursework in cognate departments. Each graduate student is therefore assigned a faculty advisor to help him or her set training goals and plan the course requirements necessary to meet them. Candidates for advanced degrees are required to perform some service as teaching or research assistants.

Master of Science in Botany

The department offers the degree with emphasis in anatomy, botiology, cell biology, ecology, genetics, development and morphogenesis, mycology, paleontology, physiological, zoology, or taxonomy. The degree requires at least 30 semester hours of graduate study, including 6 semester hours in 2225.
Research Botany. Preparation of a thesis is optional. Each student must:

Submit a program of study to be approved by a guidance committee; Complete at least 16 semester hours of graduate coursework in Botany, as prescribed by the guidance committee, and including no more than 6 semester hours of 200-level Botany; Achieve a grade-point average of 3.0 on all courses, other than 200-level, attempted up to the time of the final examination; and Take a written and oral examination covering coursework and research experience.

Master of Science in Biology

A student who has been regularly admitted to a graduate program in either the Department of Botany or the Department of Zoology may elect a course of study leading to the Master of Science Degree in biology. The degree requires at least 34 hours of graduate study without thesis, or 30 hours with thesis. Candidates for the degree without thesis must earn 4-5 semester hours of credit in research. Candidates for the degree with thesis must earn 6-8 semester hours of credit in research. Students may earn research credit by taking 200-level Research Botany, 37:199 Introduction to Research, and/or 37:303 Independent Study in Zoology. Each student must submit a program of study to be approved by the department in which the student is enrolled. The program must include at least 24 semester hours of graduate courses in each of the two departments, exclusive of research, and may include 6-10 semester hours taken in supportive areas including biochemistry, microbiology, geology, and mathematics.

The student must achieve a 3.0 grade-point average in all courses other than research attempted at the time of the final examination, and pass a written comprehensive final examination covering the graduate program. For thesis candidates, there is also an oral examination, based mainly on the work reported in the thesis.

Doctor of Philosophy

The doctoral student may specialize in any of the areas of emphasis listed for the master's degree in botany. The general requirements for the doctorate are the standard requirements established by the Graduate College. Upon admission to the Ph.D. program, a student must:

Submit a program of study toward the degree for approval by a guidance committee;
Take a qualifying comprehensive examination, at a time agreed to with the guidance committee, testing the student's progress in understanding concepts and ideas in various divisions of botany, with some correlation in fields closely associated with the research specialty;
Submit a thesis to the Ph.D. final examination committee at least two weeks prior to the planned date of the final examination; and
Take the final examination, consisting of an oral defense of methods, results, interpretations, and conclusions presented in the thesis.

Graduate Admission

All prospective graduate students should be thoroughly familiar with the requirements of the Graduate College. Applicants should submit Graduate Record Examination (GRE) Aptitude Test scores with their applications, if possible. If the entering student has little or no training in botany or biology, some introductory coursework will be required in accordance with the academic needs of the individual. In addition, mathematics at the level of analytic geometry and a year of organic chemistry are usually required of entering students. Courses prescribed by the student's guidance committee should be made up during the first year of residence; these courses may be taken for reduced graduate credit.

Students entering with a B.A. or B.S. degree from an accredited college or university should submit:
Scores on the GRE verbal and quantitative tests adding up to at least 1100.
A transcript showing a grade-point average on all courses attempted equal to 3.0; and
Letters of recommendation from at least three of their professors.

Students entering with an M.S. degree should submit:
Scores on the GRE verbal and quantitative tests adding up to 1200.
A transcript showing a grade-point average equal to 3.4 on all courses attempted at the graduate level; and
Letters of recommendation from at least three of their professors.

The numerical requirements listed above are not absolute. For example, a high level or academic achievement may compensate for a GRE score somewhat below the standard.

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 greenhouses and special culture rooms with controlled environments. A plant physiology laboratory is available, with associated greenhouses. A number of research laboratories are equipped with standard and more sophisticated apparatus for research in growth regulation, photosynthesis, paleobotany, molecular genetics, cytogenetics, ecophysiology, pollination biology, morphogenesis, and cell biology. There are two transmission electron microscopes in a special laboratory. Students and staff may use the Scanning Electron Microscope Laboratory in the Zoology Building. An instrument for research and general study holds more than two hundred thousand specimens. These standard specimens include extensive collections of seed plants and ferns from Iowa and the Midwest, special research...
Chemistry

Department Chair: Linda Dean


Bachelor of Arts

Present and projected demand for chemists with the B.S. degree is excellent in research and for 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:

4-15-1 Principles of Chemistry I-II
17 Elementary Chemistry Laboratory I-II
4.50 Chemistry Orientation
4-15-2 Organic Chemistry I-II
4-15-3 Analytical Chemistry I-II
4-15-4 Physical Chemistry I-II
4-14 Intermediate Chemistry Laboratory I-II
4 Advanced Inorganic Chemistry
4-14 Intermediate Laboratory I
4 Advanced Undergraduate Research
4 Essential Calculus I-II
4 Essential Elementary Calculus I-II
4 Advanced Calculus I-II
4 Advanced Calculus I-II
4 Intermediate Physics I-II
4 Advanced Physics I-II

Advanced courses in chemistry, biology, mathematics, physics, or other scientific areas are recommended.

Teaching Certification

The chemistry courses required for the B.S. or B.A. degree satisfy the major requirements for teaching in secondary schools. Chemistry courses through organic chemistry satisfy the requirements for a teaching minor in chemistry (see the "College of Education" section of the Catalog).
Language Requirement for Graduate Students

The department requires graduate students majoring in organic chemistry to demonstrate reading competence in German.

Teaching Requirement for Graduate Students

The department requires all graduate students in chemistry to teach as part of their training.

Graduate Admission

An applicant for graduate admission should have a bachelor's degree in chemistry with a grade-point average above 3.0. Most of the graduate students who are admitted receive financial support, and application terms may be obtained by writing to the Department of Chemistry. Most assistantships and other appointments for the following academic year are filled by April 1, but there are occasional openings at the beginning of the second semester.

Facilities

The department is housed in a five-story building containing two auditoria, 5 lecture rooms, 21 undergraduate laboratories, 43 graduate research laboratories, a computer laboratory, and a number of special-purpose instruction rooms. Modern scientific equipment is available for research.

The department's excellent library facilities are available to all students. The library contains standard reference works and complete volumes of chemical and chemical engineering journals, and subscribes to over 500 current scientific journals.

Courses

Primary for Undergraduates

Students planning to take more than one year of chemistry should take 4-13, 4-14, and 4-18. Students requiring only one year of chemistry may take 4-7, 4-8, and 4-9. Students requiring eight semester hours of organic chemistry should take 4-121, 4-122, and 4-141.

Doctor of Philosophy

A program of study for the Ph.D. degree in the areas listed for the M.S. degree includes the courses required for the M.S. degree, and courses in the major field of interest. The student must present a thesis covering the research.

Students who have demonstrated the required competence in the four areas of chemistry and who have maintained a minimum grade-point average of 3.0 are admitted to the oral examination upon presentation and preliminary approval of their research proposal.

A final oral examination is required of all candidates for the Ph.D. degree. The student must successfully defend Ph.D. thesis and a manuscript of the publishable portion of the thesis before an examining committee.

Interdisciplinary Programs

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

A student majoring in Greek must take a minimum of 20 semester hours of major credit, of which 24 semester hours must be in Greek language courses. The courses and their equivalents are required:

- 14:1-2 Elementary Greek 8 s.h.
- 14:11-12 Second-Year Greek 8 s.h.
- 14:121-122 Homer and Iliad 8 s.h.
- 14:161 Greece and Pericles 3 s.h.
- 14:162 Fifth-Century Athens 3 s.h.
- 14:171 Elementary Greek Composition 3 s.h.

Major in Latin

A student majoring in Latin must take a minimum of 24 semester hours of major credit, of which 24 semester hours must be in Latin language courses. The courses and their equivalents are required:

- 20:1-2 Elementary Latin 8 s.h.
- 20:16 Latin Review 4 s.h.
- 20:16-17 Intermediate Latin I-II 8 s.h.
- 20:81 Age of Cicero 3 s.h.
- 20:82 Age of Augustus 3 s.h.
- 20:171 Elementary Latin Composition 3 s.h.

Two Latin language courses, 100-level or above 6 s.h.

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, of which 30 semester hours must be in Greek and Latin language courses. The courses or their equivalents are required:

- 14:1-2 Elementary Greek 8 s.h.
- 14:11-12 Second-Year Greek 8 s.h.
- 20:1-2 Elementary Latin 8 s.h.
- 20:16-17 Intermediate Latin I-II 8 s.h.
- 14:121-122 Homer and Iliad 8 s.h.
- 20:81 Age of Cicero and 20:82 Age of Augustus 3 s.h.
- 14:171 Elementary Greek Composition 3 s.h.
- 20:171 Elementary Latin Composition 3 s.h.

Core Requirements

Undergraduates who major in Greek, Latin, classics, or ancient civilization are expected to complete 4 semester hours of the College of Liberal Arts literature core requirement, but must complete 11:1 The Interpretation of Literature. For students majoring in ancient civilization, core requirements in the historical-cultural sequence are limited to 4 semester hours.

Honors

For exceptional seniors who attain a 3.5 grade-point average or their first three years of classics courses, two courses are offered in honor reading, one each semester of the senior year, for 3 semester hours of credit each semester. The readings and discussions are on either an ancient author or a field in ancient history or literature chosen by the student and the instructor. During the first semester the student presents an essay every other week at the end of the second semester the student presents a long paper which is examined by at least three members of the department.

Language for Nonmajors

Students wishing to satisfy the College of Liberal Arts foreign language requirement for the B.A. degree by studying Greek should take 14:1-2 Elementary Greek and 14:11-12 Second-Year Greek. Students who wish to meet the requirement by studying Latin may elect 20:1-2 Elementary Latin or 20:16 Latin Review, and 20:16-17 Intermediate Latin I-II.

Graduate Program

For the general requirements of the Graduate College, including the comprehensive examinations, see the "Graduate College" section of the Catalog.

Graduate students in Classics may include in their programs no more than 8 semester hours of courses numbered 101-199.
Master of Arts

The department offers the M.A. degree in Latin, Greek, or classics. The candidate must meet the following requirements:

Ability to read and write Greek and Latin, as tested by qualifying examinations

The reading of considerable portions of Greek and Latin literature as outlined on a reading list prepared by the student and his or her advisor and approved by the department

A tested reading knowledge of German and French

Passing written examinations on ancient history, Greek and Latin literature, and a special field or author, together with a one-hour general oral examination

Writing and defending a dissertation embodying original research or interpretation of a classical subject

Required courses are:

Special Facilities

Extensive collections of classical texts and periodicals in the University library and the art library facilitate research in the major areas of Greek and Roman civilization.

The department has a valuable collection of slides on classical subjects, and a small library.

Associated with the department, the classical museum contains a valuable collection of coins, vases, and facsimiles in bronze from Mycenae, Pompeii, and Herculaneum.

The University is a supporting institution of the American School of Classical Studies at Athens, the American Academy in Rome, and the Vatican Society, thereby making their facilities available to its faculty and graduates.

The University is also a contributing member of an international group that is sponsoring the uncovering and publication of information about the ancient mosaics of Turkey. Annually a team from the University goes to Turkey to work on this project.

Courses

Greek

For Undergraduates Only

14.230 Advanced Greek Composition 3 s.h.

14.231 Greek Prerequisite 3 s.h.

14.232 Greek Prose Composition 3 s.h.

14.233 Classical Greek Prose Composition 3 s.h.

14.234 Greek Prose Composition 3 s.h.

14.235 Greek Prose Composition 3 s.h.

14.236 Greek Prose Composition 3 s.h.

14.237 Greek Prose Composition 3 s.h.

14.238 Greek Prose Composition 3 s.h.

14.239 Greek Prose Composition 3 s.h.

14.240 Greek Prose Composition 3 s.h.

14.241 Greek Prose Composition 3 s.h.

14.242 Greek Prose Composition 3 s.h.

14.243 Greek Prose Composition 3 s.h.

14.244 Greek Prose Composition 3 s.h.

14.245 Greek Prose Composition 3 s.h.

14.246 Greek Prose Composition 3 s.h.

14.247 Greek Prose Composition 3 s.h.

14.248 Greek Prose Composition 3 s.h.

14.249 Greek Prose Composition 3 s.h.

14.250 Greek Prose Composition 3 s.h.

14.251 Greek Prose Composition 3 s.h.

14.252 Greek Prose Composition 3 s.h.

14.253 Greek Prose Composition 3 s.h.

14.254 Greek Prose Composition 3 s.h.

14.255 Greek Prose Composition 3 s.h.

14.256 Greek Prose Composition 3 s.h.

14.257 Greek Prose Composition 3 s.h.

14.258 Greek Prose Composition 3 s.h.

14.259 Greek Prose Composition 3 s.h.

14.260 Greek Prose Composition 3 s.h.

14.261 Greek Prose Composition 3 s.h.

14.262 Greek Prose Composition 3 s.h.

14.263 Greek Prose Composition 3 s.h.

14.264 Greek Prose Composition 3 s.h.

14.265 Greek Prose Composition 3 s.h.

14.266 Greek Prose Composition 3 s.h.

14.267 Greek Prose Composition 3 s.h.

14.268 Greek Prose Composition 3 s.h.

14.269 Greek Prose Composition 3 s.h.

14.270 Greek Prose Composition 3 s.h.

14.271 Greek Prose Composition 3 s.h.

14.272 Greek Prose Composition 3 s.h.

14.273 Greek Prose Composition 3 s.h.

14.274 Greek Prose Composition 3 s.h.

14.275 Greek Prose Composition 3 s.h.

14.276 Greek Prose Composition 3 s.h.

14.277 Greek Prose Composition 3 s.h.

14.278 Greek Prose Composition 3 s.h.

14.279 Greek Prose Composition 3 s.h.

14.280 Greek Prose Composition 3 s.h.

14.281 Greek Prose Composition 3 s.h.

14.282 Greek Prose Composition 3 s.h.

14.283 Greek Prose Composition 3 s.h.

14.284 Greek Prose Composition 3 s.h.

14.285 Greek Prose Composition 3 s.h.

14.286 Greek Prose Composition 3 s.h.

14.287 Greek Prose Composition 3 s.h.

14.288 Greek Prose Composition 3 s.h.

14.289 Greek Prose Composition 3 s.h.

14.290 Greek Prose Composition 3 s.h.

14.291 Greek Prose Composition 3 s.h.

14.292 Greek Prose Composition 3 s.h.

14.293 Greek Prose Composition 3 s.h.

14.294 Greek Prose Composition 3 s.h.

14.295 Greek Prose Composition 3 s.h.

14.296 Greek Prose Composition 3 s.h.

14.297 Greek Prose Composition 3 s.h.

14.298 Greek Prose Composition 3 s.h.

14.299 Greek Prose Composition 3 s.h.

14.300 Greek Prose Composition 3 s.h.

14.301 Greek Prose Composition 3 s.h.

14.302 Greek Prose Composition 3 s.h.

14.303 Greek Prose Composition 3 s.h.

14.304 Greek Prose Composition 3 s.h.

14.305 Greek Prose Composition 3 s.h.

14.306 Greek Prose Composition 3 s.h.

14.307 Greek Prose Composition 3 s.h.

14.308 Greek Prose Composition 3 s.h.

14.309 Greek Prose Composition 3 s.h.

14.310 Greek Prose Composition 3 s.h.

14.311 Greek Prose Composition 3 s.h.

14.312 Greek Prose Composition 3 s.h.

14.313 Greek Prose Composition 3 s.h.

14.314 Greek Prose Composition 3 s.h.

14.315 Greek Prose Composition 3 s.h.

14.316 Greek Prose Composition 3 s.h.

14.317 Greek Prose Composition 3 s.h.

14.318 Greek Prose Composition 3 s.h.

14.319 Greek Prose Composition 3 s.h.

14.320 Greek Prose Composition 3 s.h.

14.321 Greek Prose Composition 3 s.h.

14.322 Greek Prose Composition 3 s.h.

14.323 Greek Prose Composition 3 s.h.

14.324 Greek Prose Composition 3 s.h.

14.325 Greek Prose Composition 3 s.h.

14.326 Greek Prose Composition 3 s.h.

14.327 Greek Prose Composition 3 s.h.

14.328 Greek Prose Composition 3 s.h.

14.329 Greek Prose Composition 3 s.h.

14.330 Greek Prose Composition 3 s.h.

14.331 Greek Prose Composition 3 s.h.

14.332 Greek Prose Composition 3 s.h.

14.333 Greek Prose Composition 3 s.h.

14.334 Greek Prose Composition 3 s.h.

14.335 Greek Prose Composition 3 s.h.

14.336 Greek Prose Composition 3 s.h.

14.337 Greek Prose Composition 3 s.h.

14.338 Greek Prose Composition 3 s.h.

14.339 Greek Prose Composition 3 s.h.

14.340 Greek Prose Composition 3 s.h.

14.341 Greek Prose Composition 3 s.h.

14.342 Greek Prose Composition 3 s.h.

14.343 Greek Prose Composition 3 s.h.

14.344 Greek Prose Composition 3 s.h.

14.345 Greek Prose Composition 3 s.h.

14.346 Greek Prose Composition 3 s.h.

14.347 Greek Prose Composition 3 s.h.

14.348 Greek Prose Composition 3 s.h.

14.349 Greek Prose Composition 3 s.h.

14.350 Greek Prose Composition 3 s.h.

14.351 Greek Prose Composition 3 s.h.

14.352 Greek Prose Composition 3 s.h.
Communication and Theatre Arts:

General Departmental Degree Requirements

Bachelor of Arts

Regardless of area of specialization, a student seeking a Bachelor of Arts degree in the department must earn:

A minimum of 24 semester hours in the department, including at least one course in the arts, one course in the humanities and one course in the social sciences.

A minimum of eight semester hours of production/performance courses; and

A minimum of eight semester hours of nonproduction/nonperformance courses in the department.

A student may specialize in communication, theatre arts, broadcasting and film, or communication education. The additional requirements for these majors are cited in the division sections.

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 some combination of divisions. The M.A. degree with an emphasis in communication is an interdivisional degree.

Departmental requirements for the Master of Arts degree are:

A minimum of 30 semester hours, including 30/300 Introduction to Research or its equivalent;

A research thesis or, for the nonthesis degree, a graduate seminar involving 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.

The application deadline for the fall semester or summer season is in February 1 preceding, for maximum probability of admission. The minimal cumulative undergraduate grade-point average required for admission in good standing is 2.75.

Master of Fine Arts in Dramatic Art

See “Theatre Arts” section.

Educational Specialist (for Junior College Teaching)

Departmental requirements for the Educational Specialist degree are:

A minimum of 60 semester hours, including 30/300 Introduction to Research; a course in the teaching of communication; an approved seminar; and at least 16 semester hours completed in the College of Education’s graduate program in higher education;

Successful completion of a research report;

A semester’s internship in an assigned teaching position;

Satisfactory performance on a nine-hour written examination covering areas of learning agreed upon by the student and his or her graduate committee; and

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 72 hours of graduate credit, exclusive of research tools and dissertation.

Communication and Theatre Arts/LIBERAL ARTS
A minimum of 10 hours of dissertation credit;

36:900 Introduction to Research or its equivalent, at least two courses in theopin taken within the department, as determined by the student, the advisor, and graduate committee in consultation with the student.

Successful completion of a qualifying examination and demonstrated competence in the student's major research areas;

A substantial scholarly dissertation;

A 3.0 minimum cumulative grade-point average for all courses in the plan of study.

The application deadline for the fall semester or summer session is February 1 preceding, for maximum probability of admission. Admission decisions are based upon a composite consideration of the applicant's undergraduate achievement, letters of reference, and other evidence of scholarly potential or graduate Record Examination (GRE). Aptitude Test results and examples of one's scholarly work are desired for the latter purposes.

Interdivisional Courses

Communication Education

Professor in charge: Douglas Trentham

The communication teaching major requires a minimum of 33 semester hours of coursework in the Department of Communication and Theatre Arts. Students should include the following in their plan of study:

36:951 Voice Improvement for Speakers and Actors 1.5 h.

36:97 Oral Interpretation of Literature 1.5 h.

36:951 Public Speaking in Communicative Situations 1.5 h.

36:149 Research in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Public Speaking in Communicative Situations 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.

36:149 Projects in Communication and Theatre Arts 3 h.
Communication Research

Professor is change: John W. Zeraw Degree offered: M.A., Ph.D.

The program in communication research leads either to the M.A. or the Ph.D. degree. Programs designed for individual students provide background and experience in experimental research on interpersonal communication, group communication, and the mass media. Candidates are expected to work in related social sciences in addition to the general requirements of the Department of Communication and Theatre Arts, and to select appropriate courses from those listed below.

In general, Ph.D. candidates in this program must complete the statistics requirement in the Department of Psychology or in the College of Education, and take 26:612 or 26:613.

Philosophical Problems of the Social Sciences in the Department of Psychology. Work in advanced statistics and computer science may be used to fulfill the research tool requirements of this department.

Opportunities vary for research in addition to that required for the thesis or dissertation projects are available in the department's communication research laboratories. Several original studies in preparation for dissertation and later research are required of doctoral candidates.

Courses

35:320 Social Psychology Theory

35:631 Senior: Communication Theory

35:632 Senior: Communication Theory

35:633 Senior: Communication Theory

35:634 Senior: Communication Theory

Rhetorical Studies

Professor in charge: Bruce R. Gross

The program in rhetorical studies leads either to the M.A. or the Ph.D. degree. It is built upon foundational courses in the history of rhetorical practices, the criticism of rhetorical discourse, and theoretical relationships between rhetorical activism and other dimensions of society. This foundation course in history and criticism are offered on the 100-level, and are listed under "Communication" (see above). More specialized precesses (300-level) and seminars (600-level) allow students to develop particular expertise in various approaches to rhetoric and communication.

The Master of Arts Program

The areas of the M.A. program in rhetorical studies is upon basic knowledge of rhetorical history, criticism, and theory. That goal normally is met by work both within the division and in 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 requirements for the M.A. in rhetorical studies include:

35:600 Introduction to Rhetoric

At least 15 hours of courses in rhetorical studies, including a seminar;

At least 6 hours of courses in other divisions of this or related departments; and

A comprehensive examination across three areas of study determined by students and their committees.
The Doctor of Philosophy Program

The program leading to the Ph.D. degree in rhetorical studies is designed to give candidates a mature grasp of the various specialties and perspectives embraced in this division and to develop research competencies essential to a life of productive scholarship.

Work in related departments—often, in political science, history, sociology, English, comparative literature, American studies, philosophy, and journalism—complements rhetorical studies' course offerings. For basic requirements, see the introductory sections of this department's description.

Courses

369.301 Classical Rhetoric

Thesauri and philosophies of discourse in the ancient world. Same as ENGL 323.

369.302 Research and Language Theory

Critical examination of recent theories of language, from semantics, pragmatics, and other disciplines, with an emphasis on their relationship to rhetoric. Same as ENGL 325.

369.303 Rhetoric and Philosophy

Commensurate philosophical approaches to argument and rhetoric. Same as ENGL 326.

369.304 Rhetoric and Social Theory

Survey of arguments concerning the effects of rhetoric/human discourse on social behavior, with emphasis on the development of sociolinguistic theories of social and historical change.

369.305 Studies in Political Communication

Analyzes and critiques approaches to political rhetoric and the role of rhetoric in explaining the operation of oral and written political communication.

369.307 Readings and Research

Case studies of the function of symbols in communication change, topics vary. Prerequisite: 369.304 or permission of instructor.

369.301 Seminar: Rhetoric and Public Discourse

Guided investigations of selected topics and phases, subject varies by semester.

369.302 Seminar: Argument

Studies in the philosophy of argument, with special attention to the work of recent writers in this field, topics, methodology, and rhetoric.

369.303 Seminar: Speech Acts

Studies in the analysis of speech acts, with special attention to the work of Austin and Searle.

369.305 Seminar: Communication, Culture, and the Popular Arts

Examination of relations in which cultural norms and communicative forms shape the popular arts of any given speech.

369.306 Seminar: Semiotic Analysis

Examinations of major semiotic theories and the significance of their concepts in the analysis of communication and communicative artifacts.

369.307 Seminar: Communication and Design

Guided investigations of theories of innovation and design, and their utility in accounting for patterns of human communication.

Broadcasting and Film

Professors in charge: Duane Andree, Robert Peper

Bachelor of Arts

This program is intended for students interested in mass communication as the focus of a general liberal arts education or in broadcasting and film careers. The program assumes that anyone pursuing a career in film or broadcasting must not only acquire technical expertise, but also ground that expertise in an understanding of the media and their place in society. Conversely, it assumes that no one can understand the history, theory, and criticism of the mass media totally apart from the experience and knowledge of production.

Students emphasizing production will learn how to write, plan, shoot or record, edit, and present film, radio, or television programs. In addition, they will gain a background in the history of the media so that they understand the reasons for the industry's present state. A grounding in media theory and criticism will teach the student to differentiate between good and mediocre programming, to appreciate what goes into creating a successful work, and to understand the impact that creative and business decisions may have on audience members and on the society at large.

For non-production students, theories of aethetics, society, and communication all come together in our discipline, making it an excellent place to study people and their institutions, aspirations, and creations.

In short, the broadcasting and film major is one in which vocationally concerned students and general liberal arts students interact constantly and profitably.

Graduate Programs

The Master of Arts degree emphasizes research in critical, theoretical, historical, and policy issues relating to broadcasting and film. M.A. candidates in film can emphasize production in a plan of study balancing the artistic and scholarly aspects of the field. The Ph.D. programs in both broadcasting and film are individually tailored by each candidate and an advisory committee to develop competence in research and criticism.

Facilities

The broadcasting and film division is housed in the University's Television Center. The center, known on campus as Old Armory, houses fine broadcasting and film production facilities devoted exclusively to instruction. A large television studio/sound stage is equipped with modern television equipment, including color cameras. Students have the opportunity to use a variety of types of video and audio recording equipment in both studio and field production settings, along with video and audio editing facilities.

The University's two radio stations, WUBS (AM) and KSUI (FM), offer facilities for radio production classes and independent study.

A large format film editor is also available for students in broadcasting and film courses. Students can gain experience with a variety of cameras, sound and lighting equipment, editing equipment (including fiber optic editing machines), and all film courses except the introductory one are taught with 16 mm equipment. The University maintains both a complete film processing laboratory and a sound mixing studio.

The University library contains an outstanding collection of film and broadcasting materials.

Requirements for a major in the division include 388:35 Introduction to Broadcasting and Film Production, a minimum of 9 hours of advanced production, a minimum of 9 hours of non-production courses (of which at least 6 must be 100-level courses or above), and one course each from the divisions...
of Theatre Arts and Communication. A total of 24 hours is required.

Courses

239:13 Media Arts and New Media
Introduction to the History and Theory of the Media Arts and Communication on Radio, Television, and the Motion Picture. Same as 480:81.

239:20 Introduction to Broadcasting and Film Production
For the Bachelor with an emphasis in broadcast, the course is project-oriented, with a short video production, short news film, and audio production requirements. Includes basic principles and practices of film production. Same as 480:82.

239:20 Introduction to Film Analysis
Methodologies of analyzing various types of films. Class projects may include the analysis of a movie or a short film or video, depending on the instructor. The course introduces students to basic film terminology, narrative structures, genre, and motion pictures and television. Same as 480:83.

239:30 American Broadcasting
Involves the history, structure, and development of the electronic media in the United States.

239:31 Survey of Film
Survey of the motion picture industry's history, theory, and criticism, including study of representative films of the late 20th century. Same as 460:30.

239:32 Film and Society
The role of the motion picture in contemporary society, content analysis of issues of censorship and treatment of social evils.

239:34 Digital Film
Introduces methods of analyzing various kinds of films, including digital, documentary, and experimental; includes frequent short digital film assignments. Students learn to discuss films, scripts, and film criticism. Same as 480:84.

239:75 Broadcasting and Sports
Relationship of sports and broadcasting, sports programming and production, audience, coverage, regulatory standards and issues. Same as 480:75.

239:100 Mass Media and Race Society
Focus is on mass media's role in the construction and perpetuation of racism. Students learn about mass media's role in the perpetuation of racism and the role of media in social change. Same as 480:100.

239:101 Televising Production I
Preparation and development of television programs, including scriptwriting, editing, and production techniques. Includes production experience. Prerequisite: 239:150.

239:111 Televising Production II
Preparation and development of television programs, including scriptwriting, editing, and production techniques. Includes production experience. Prerequisite: 239:110.

239:116 Televising Production I
An intensive 16mm motion picture course designed to film structure and technique, cameras, editing equipment, and necessary skills for projects and film production. Prerequisite: 239:115 or consent of instructor.

239:117 Televising Production II
Advanced production practices; non-visual media, editing, sound and lighting, and special techniques. Prerequisite: 239:116 or consent of instructor.

239:118 Film Workshop
Intensive individual work for students who have already demonstrated talent in 239:115. Prerequisite: consent of instructor.

239:118 Television Field Production I
Introduction to electronic field production, with emphasis on electronic news gathering and news gathering production. Career planning and production is emphasized. Prerequisites: 239:110 or 239:115, and consent of instructor.

239:119 Producing Drama for the Screen
For advanced production students. Students and instructor decide on production, with emphasis on professional production. Students learn about professional production and the production process. Prerequisite: 239:118 or consent of instructor.

239:121 How to Direct a Widescreen Film
For advanced students and select students interested in directing films. Includes the art of film of visual, conceptual, performance, and graphic aesthetics explored.

239:123 Teaching Broadcast and Mass Media
Planning, organizing, and marketing courses for mass media: Understanding the strategies in secondary schools, and an overview of the planning and teaching process. Students learn about planning and teaching process. Prerequisite: 239:122.

239:133 Multicultural Communication
Involves study of diverse cultures and the effects of communication in a multicultural society. Students learn about the multiple dimensions of communication and how they interact with each other. Prerequisite: 239:123.

239:143 Technology of Film
Technical basics: lighting, chemistry, film stocks, camera angles, sound recording, editing, and practical production. Prerequisite: 239:120.

239:146 Televising Production in Europe
The role of the media in the shaping of society, culture, and political values. Section which emphasizes some of the functions and functions of programs, in selected countries of the developing world.

239:150 Televising Production and Film
Exercises in scriptwriting, pre-production, and shooting. Preparation of a treatment and storyboard for a television or film project. Taught by faculty and guest professionals. Prerequisite: 239:115.

239:155 Televising Production and Film
Exercises in scriptwriting, pre-production, and shooting. Preparation of a treatment and storyboard for a television or film project. Taught by faculty and guest professionals. Prerequisite: 239:115.

239:160 The Critic's Viewpoint
Examination of broadcast media from the perspective of critics. Students will be introduced to the variety of ways in which critics interpret media content and the implications of these interpretations on society and the media. Prerequisite: 239:450.

239:161 History of Broadcasting
History of the development of the electronic media in the United States.

239:162 American Broadcasters
Study of the role of broadcasting in American society, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:163 International and Global Communications
Study of the role of international and global communications in the world economy, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:164 Media and Public Policy
Study of the role of media and public policy in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:165 Media and Public Relations
Study of the role of media and public relations in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:166 Media and Public Issues
Study of the role of media and public issues in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:167 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:168 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:169 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:170 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:171 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:172 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:173 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:174 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:175 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:176 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:177 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:178 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.

239:179 Mass Communication and Society
Study of the role of mass communication and society in the development of international and global communications, focusing on the relationship between broadcasting and other social institutions, such as politics, economics, and culture.
360.143 Film and Ideology 3 s.h.
Study of films and theories illustrating relationship between production of images, commodities or audiences, and social or historical conditions, with attention to formal types of films, for example, those about women or minorities or poverty.

360.145 The American Film 3 s.h.
Introduction to the history, genres and directors who made up the "Hollywood complex."

360.146 Seminar Film History 3 s.h.
History of film in French culture: theories on French culture, analysis of films, and discussion of various approaches to film studies, seminar with lectures, discussion of a film.

360.140 National Cinema 3 s.h.
History of national cinemas (for example British, French, Italian, Eastern European, etc.).

360.150 Film Criticism 3 s.h.
Study of the processes, presuppositions, and styles of film criticism. Major theoretical positions studied in various contexts of cinema, with theoretical dimensions reflected in written in works of the students.

360.151 Film Theory 3 s.h.
Introduction to major theoretical positions: Carnal, Andrews and others. Explores the relationship of text to other media, such as music, literature, photography, and architecture.

360.152 The State and Film 3 s.h.
Surveys American cinema from 1895 to 1975, focusing on issues when the image of the nation is most visible, and the impact image has on society.

360.155 Literature and the Film 3 s.h.
Same as 411:480, 106.170.

360.156 Film and Classical Art Forms 3 s.h.
Same as 411:480, 106.170.

360.200 Film Style and Genre 3 s.h.
Examination of the meaning of various genres: genre and its development, major themes, national characteristics, and the impact of genre on audience.

360.201 Introduction to New Wave and Author-Style Film 3 s.h.
Study of famous auteurs and their films in the New Wave,

360.210 Film Narrative 3 s.h.
Focus on the role of the director in shaping the film, investigating the director's style and the impact on the audience.

360.215 Research Methods in Mass Communication 3 s.h.
Different approaches to understanding mass communication processes, emphasis on statistical tools, research methods, media ecology, focusing on social and cultural aspects of technology, shifts in audience, individual research projects.

360.221 Influence on Film Production 3 s.h.
Examination of the role of the director in shaping the film, from the point of view of the organization, the patterns of distribution, individual research projects.

360.235 Social Impact of Mass Communication 3 s.h.
Current theories and research on the function and impact of mass communication for individuals and society, emphasizing the role of the media in the formation of potentially toxic social structures.

360.237 Mass Communication Process and Effects 3 s.h.
Examination of research and theory which helps us understand the functions that mass communication serves to individuals and societies, the impact it has on the individual, and the role of the media in shaping that process.

360.240 Seminar: American Film and American Culture 3 s.h.
Study of American cinema as it reflects, shapes, or in some way comments on American culture. Same as 45:600.

360.245 Seminar: Film Analysis 3 s.h.
Emphasis on Great Britain, Sweden, Russia, Austria, etc.

360.250 Seminar: Film Theory 3 s.h.
Study of film theory.

360.260 Seminar: Film History 3 s.h.
Study of film history.

360.270 Seminar: Broadcasting 3 s.h.
Study of broadcasting theory, current issues, and future trends.

360.275 Seminar: Mass Communication Research 3 s.h.
Critical analysis of studies and survey on current issues of mass communication, including communication and political processes, audience behavior, and methods for studying mass communication processes.

Theatre Arts

Professor in charge: Roy Hunter
Degree offered: B.A., M.A., M.F.A., Ph.D.

Bachelor of Arts

Minimum requirements are:
11:51-52 Drama in Western Culture (Same as 367:51-52)

And a minimum of 27 additional semester hours, including:
367:1 Acting I 3 s.h.

367:31 Costume Practicum 3 s.h.

367:32 Stagecraft Practicum 3 s.h.

367:53-54 Survey of Theatre History 3 s.h.

367:80 Play Script Analysis for Undergraduates 3 s.h.

One of the following:
367:32 Costume Design I 3 s.h.

367:34 Scene Design I 3 s.h.

367:36 Lighting Design I 3 s.h.

One course each from the divisions of Communication and of Broadcasting and Film.

Students may specialize in one or more theatre productions areas.

Doctor of Philosophy

The PhD. program in theatre is designed to emphasize research and scholarly activity in the areas of general education or production.

Facilities

The division's commitment to an extensive and varied production program is reflected in its use of four quite different theatres. Studio II is a large, flexible space in which class projects, highly experimental productions, and student theatre productions are performed with limited scenery before small audiences. The Old Army Theatre is a 200-seat house with a large thrust stage. New scripts are produced in a controlled lecture-recital setting. MacLean Hall. The E.G. Mable Theatre is an excellently equipped proscenium theatre.
which offers seating for almost 600 patrons.

The division also stages productions in Hunter Auditorium. Seating 2,660, this facility is used by the numerous professional touring shows which perform in Iowa City, and boasts the latest and most sophisticated stage machinery available.

To support its continuous production schedule and to provide its students with an appropriate range of experiences, the division maintains several shops for the building, maintenance, and storage of its scenery, costumes, and properties. Using the three scene shops, students can learn to work in metal and plastics as well as canvas and wood. In lighting and sound, students are exposed to a range of equipment from the "retro" resistance lighting control and the two-channel sound systems of the Old Armory Theatre to the fully computerized lighting controls and the five-channel sound system used in Hunter Auditorium.

Courses

**For Undergraduates**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Acting I</td>
</tr>
<tr>
<td>102</td>
<td>Acting II</td>
</tr>
<tr>
<td>103</td>
<td>Acting III</td>
</tr>
<tr>
<td>104</td>
<td>Acting IV</td>
</tr>
<tr>
<td>105</td>
<td>Acting V</td>
</tr>
<tr>
<td>106</td>
<td>Acting VI</td>
</tr>
<tr>
<td>107</td>
<td>Acting VII</td>
</tr>
<tr>
<td>108</td>
<td>Acting VIII</td>
</tr>
<tr>
<td>109</td>
<td>Acting IX</td>
</tr>
<tr>
<td>110</td>
<td>Acting X</td>
</tr>
<tr>
<td>111</td>
<td>Acting XI</td>
</tr>
<tr>
<td>112</td>
<td>Acting XII</td>
</tr>
<tr>
<td>113</td>
<td>Acting XIII</td>
</tr>
<tr>
<td>114</td>
<td>Acting XIV</td>
</tr>
<tr>
<td>115</td>
<td>Acting XV</td>
</tr>
<tr>
<td>116</td>
<td>Acting XVI</td>
</tr>
<tr>
<td>117</td>
<td>Acting XVII</td>
</tr>
<tr>
<td>118</td>
<td>Acting XVIII</td>
</tr>
<tr>
<td>119</td>
<td>Acting XIX</td>
</tr>
<tr>
<td>120</td>
<td>Acting XX</td>
</tr>
<tr>
<td>121</td>
<td>Acting XXI</td>
</tr>
<tr>
<td>122</td>
<td>Acting XXII</td>
</tr>
<tr>
<td>123</td>
<td>Acting XXIII</td>
</tr>
<tr>
<td>124</td>
<td>Acting XXIV</td>
</tr>
<tr>
<td>125</td>
<td>Acting XXV</td>
</tr>
<tr>
<td>126</td>
<td>Acting XXVI</td>
</tr>
<tr>
<td>127</td>
<td>Acting XXVII</td>
</tr>
<tr>
<td>128</td>
<td>Acting XXVIII</td>
</tr>
<tr>
<td>129</td>
<td>Acting XXIX</td>
</tr>
<tr>
<td>130</td>
<td>Acting XXX</td>
</tr>
<tr>
<td>131</td>
<td>Acting XXXI</td>
</tr>
<tr>
<td>132</td>
<td>Acting XXXII</td>
</tr>
<tr>
<td>133</td>
<td>Acting XXXIII</td>
</tr>
<tr>
<td>134</td>
<td>Acting XXXIV</td>
</tr>
<tr>
<td>135</td>
<td>Acting XXXV</td>
</tr>
<tr>
<td>136</td>
<td>Acting XXXVI</td>
</tr>
<tr>
<td>137</td>
<td>Acting XXXVII</td>
</tr>
<tr>
<td>138</td>
<td>Acting XXXVIII</td>
</tr>
<tr>
<td>139</td>
<td>Acting XXXIX</td>
</tr>
</tbody>
</table>
| 140 | Acting XXX 

**For Undergraduates and Graduates**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Experiential Art Laboratory</td>
</tr>
<tr>
<td>202</td>
<td>Individual Assignments in Various Aspects of Dramatic Production</td>
</tr>
<tr>
<td>203</td>
<td>Acting I</td>
</tr>
<tr>
<td>204</td>
<td>Acting II</td>
</tr>
<tr>
<td>205</td>
<td>Acting III</td>
</tr>
<tr>
<td>206</td>
<td>Acting IV</td>
</tr>
<tr>
<td>207</td>
<td>Acting V</td>
</tr>
<tr>
<td>208</td>
<td>Acting VI</td>
</tr>
<tr>
<td>209</td>
<td>Acting VII</td>
</tr>
<tr>
<td>210</td>
<td>Acting VIII</td>
</tr>
<tr>
<td>211</td>
<td>Acting IX</td>
</tr>
<tr>
<td>212</td>
<td>Acting X</td>
</tr>
<tr>
<td>213</td>
<td>Acting XI</td>
</tr>
<tr>
<td>214</td>
<td>Acting XII</td>
</tr>
<tr>
<td>215</td>
<td>Acting XIII</td>
</tr>
<tr>
<td>216</td>
<td>Acting XIV</td>
</tr>
<tr>
<td>217</td>
<td>Acting XV</td>
</tr>
<tr>
<td>218</td>
<td>Acting XVI</td>
</tr>
<tr>
<td>219</td>
<td>Acting XVII</td>
</tr>
<tr>
<td>220</td>
<td>Acting XVIII</td>
</tr>
<tr>
<td>221</td>
<td>Acting XIX</td>
</tr>
<tr>
<td>222</td>
<td>Acting XX</td>
</tr>
<tr>
<td>223</td>
<td>Acting XXI</td>
</tr>
<tr>
<td>224</td>
<td>Acting XXII</td>
</tr>
<tr>
<td>225</td>
<td>Acting XXIII</td>
</tr>
<tr>
<td>226</td>
<td>Acting XXIV</td>
</tr>
<tr>
<td>227</td>
<td>Acting XXV</td>
</tr>
<tr>
<td>228</td>
<td>Acting XXVI</td>
</tr>
<tr>
<td>229</td>
<td>Acting XXVII</td>
</tr>
<tr>
<td>230</td>
<td>Acting XXVIII</td>
</tr>
<tr>
<td>231</td>
<td>Acting XXIX</td>
</tr>
<tr>
<td>232</td>
<td>Acting XXX</td>
</tr>
<tr>
<td>233</td>
<td>Acting XXXI</td>
</tr>
<tr>
<td>234</td>
<td>Acting XXXII</td>
</tr>
<tr>
<td>235</td>
<td>Acting XXXIII</td>
</tr>
<tr>
<td>236</td>
<td>Acting XXXIV</td>
</tr>
<tr>
<td>237</td>
<td>Acting XXXV</td>
</tr>
<tr>
<td>238</td>
<td>Acting XXXVI</td>
</tr>
<tr>
<td>239</td>
<td>Acting XXXVII</td>
</tr>
<tr>
<td>240</td>
<td>Acting XXXVIII</td>
</tr>
<tr>
<td>241</td>
<td>Acting XXXIX</td>
</tr>
<tr>
<td>242</td>
<td>Acting XXX</td>
</tr>
</tbody>
</table>
credit to be planned in consultation with an advisor in order to emphasize multidisciplinary approaches to communication. Four courses are required for all majors.

122:101 Introduction to Linguistics 3 s.h.
122:80 Communication and Contemporary Culture 3 s.h.
122:81 Mass Media and Mass Society 3 s.h.
122:82 Communication Theory: Everyday Life 3 s.h.
122:100 Cultural and Historical Foundations of Communication 3 s.h.
122:103 Social Scientific Foundations of Communication 3 s.h.
122:89 Senior Seminar 1-3 s.h.

Courses

122:80 Communication and Contemporary Culture
Same as 363:91 122:90 3 s.h.
122:81 Mass Media and Mass Society
Same as 363:90 3 s.h.
122:82 Communication Theory: Everyday Life
Same as 363:90 3 s.h.
122:90 Senior Seminar: Interdisciplinary Communication Studies 3 s.h.
122:90 Senior Seminar: Communication Studies
1 s.h.
122:101 Cultural and Historical Foundations of Communication
Same as 363:90 3 s.h.
122:101 Introduction to Linguistics
Same as 363:100, SL100 3 s.h.
122:103 Social Scientific Foundations of Communication
Same as 16:123 3 s.h.

Comparative Literature

Program Chair: David E. Rissland
Faculty: professors J. David Andrews, Sharmen Delaplanche, Paul Hessl, Donald Marshall, Ann F. Nugent
associate professor Charles P. Altenas, R. E. Fortunelli, Maurice Roberton, Steven Unger, Daniel Weisenburg
assistant professor Thomas L. Davis, Geoffrey Watts.
Faculty selecting the program: in addition to its own faculty, the Program in Comparative Literature relies upon the services of faculty members in various other areas, including classics, Asian languages and literatures, communication and theatre arts, English, French, German, history, Italian, Spanish and Portuguese, Russian.

The purpose of the Program in Comparative Literature is to present literature as an interdisciplinary and international study and to provide a base for intensive work in literature, literary theory, and critical methods. Undergraduates interested in comparative studies are encouraged to investigate the major in letters, which is closely coordinated with comparative literature.

Master of Arts

The degree of Master of Arts in comparative literature requires 36 semester hours of study in literature in an international context, concentrating on two or more national literatures and on the theory and study of literature in general. The student, in consultation with faculty advisers, combines courses in the program and in the individual allied departments to design a coherent course of study.

Formal degree requirements may be satisfied by a written examination on reading lists agreed upon by student and advisers, or by a written thesis and oral examination on the thesis and its relation to problems and issues in comparative literature. The M.A. may also be awarded after 48 semester hours of graduate study with a grade-point average of 3.25 and 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 is studied in historical depth, and two others in limited areas of specialization. An interdisciplinary area of concentration is encouraged. All candidates devote a portion of their programs to comparative study that brings the several areas into focus. Specific areas and interrelations of these areas are selected by the student in consultation with appropriate faculty members.

Some typical critical and comparative areas are:

European Renaissance
Romanticism
Structurelism and Post-Structuralism
Neo-ideology
Symbolism
Post-modern and modern literature
Post-Kantian philosophy and literature
Sartre, existentialism, and the theory of social interaction
Literature, history, and criticism

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 be acceptable as a dissertation. The final oral examination centers on the dissertation and its background.

Admission

A 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. courses of study; knowledge of at least two foreign languages is a prerequisite for doctoral study. Students are encouraged to offer at least one classical language.

For further information, consult the procedural guide for graduate students in comparative literature, available by request from the program office.
Economics

Department Chair: Timothy W. McGraw
Faculty: Associate Professor William Albrecht, Michael Belton, Mary C. Fazeli, Tetsu Iwata, Yossi Joseph, John Kesan, Farrell Nelson, Andrew Prather, Larry Sprinkle, Samuel Wilkinsen; Assistant Professor Susan Alexander, G. Frank O’Connor, Raymond Thomas, Charles Whiteman

Degreese offered: B.A., B.S. B.B.A., M.A., Ph.D.

Economics is concerned primarily with the analysis and description of the production, distribution, and consumption of goods and services in society. It involves the systematic study of topics such as wealth and poverty, money and banking, income and consumption, government expenditures and taxation, prosperity and depression, inflation and unemployment, big business and labor unions, and hundreds of other matters which intimately affect the way people live.

The Department of Economics teaches students how complex economic systems work and undertake to teach them methods of economic analysis that can be applied to a broad set of economic problems. The department offers a wide range of coursework to meet the needs of the nonmajor as well as the major.

Undergraduate Programs

The baccalaureate programs in economics provide an excellent background for a variety of positions in business and government. Graduates find employment in banking, financial institutions, industrial firms, and trade organizations, and in federal, state, and local government agencies dealing with economic policy, regulation, and analysis. Economics is also considered excellent preparation for law school and for graduate study in such fields as business management, public administration, health and hospital administration, urban and regional planning, transportation, journalism, political science, and actuarial science.

The department offers three undergraduate degrees—the Bachelor of Science and Bachelor of Arts in the College of Liberal Arts, and the Bachelor of Business Administration 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 provide a background in the business fields of accounting, finance, marketing, business law, and management. The B.S. program is designed for the student seeking a less technical liberal arts background.

Bachelor of Arts

These are the requirements for the B.A. degree with a major in economics:

225:25 Elementary Probability and Statistics 3 s.h.
23M:7 Quantitative Methods I 4 s.h.
225:6 Quantitative Methods II 4 s.h.

Twenty semester hours of credit in 100-level economics courses, including 6E:103 Microeconomics and 6E:105 Macroeconomics.

Most 100-level courses in economics have as prerequisites either 6E:1 Principles of Economics and 6E:2 Principles of Economics, or senior standing; 6E:1 and 6E:2 satisfy the social science core requirement.

Credit gained 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:

22M:25-26 Calculus I-IV 8 s.h.
225:120 Probability and Statistics 3 s.h.
6E:103 Statistical Methods in Economics 20 s.h.

Twenty semester hours of 100-level economics courses, including 6E:103 Microeconomics, 6E:105 Macroeconomics, and 6E:184 Methods of Quantitative Economics.

Credit gained in 6E:100 Price, Employment, and Production Theory or 6E:183 Statistical methods in Economics cannot be counted toward the required 20 semester hours of 100-level course credit.

Minor

A student in the College of Liberal Arts may complete a minor in economics by earning at least 16 semester hours of credit in courses offered by the Department of Economics, including at least 12 hours in courses numbered 100 or above.

Students interested in an economics minor should obtain information concerning course selection from the department office.

Honors

Undergraduate students working toward the B.A. or B.S. degree with a major in economics are eligible to participate in the Honors Program in Economics. The Honors Program offers the high-achieving student an opportunity to pursue special research interests. Honors students must complete four 100-level economics courses, including 6E:103 and 6E:105, before the senior year. They may also register for 6E:197 Senior Thesis in Economics for three hours of credit both semesters of the senior year, complete a senior thesis under direction of an economics faculty member of professorial rank, and take (during the final semester of the program) an examination covering their departmental honors work. A student satisfactorily completing the Honors Program receives his or her degree with honors.

Bachelor of Business Administration

The program for the B.B.A. degree is described in the “College of Business Administration” section of the Catalog.
Coursework for Nonmajors

Departmental courses 6E:1-2 Principles of Economics satisfies the College of Liberal Arts quantitative core requirement, and provides an introduction to specialized topics of upper-division courses. Students with limited exposure to economics may examine the economics behind some current policy issues in 6E:7 Contemporary Economic Problems and Policy.

Coursework in economics can be related to majors in many other fields—for example, environmental studies majors might take 6E:153 Economic Growth and Environmental Decay and 6E:103 Microeconomics: political science political science majors could elect 6E:119 Economics of the Government Sector and 6E:141 Industrial Organization.

A number of students combining many interests by pursuing double majors in economics and in fields with an as computer science, ethnology, history, mathematics, political science, sociology, or statistics.

Graduate Programs

The department offers Master of Arts and Doctor of Philosophy degree programs. Each program has a separate three-year curriculum with diverse interests enhanced by a set of field courses.

The M.A. degree program is designed to provide breadth in economic training without the intensity of specialization. Students in the M.A. program usually complete it within 18 months.

Within the M.A. program, the department offers concentrations in economic development, econometrics, economic history, health economics, history of economic thought, industrial organization, international economics, labor economics, economic theory and mathematical economics, monetary economics and policy, public finance, and regional and urban economics.

The Ph.D. program is designed to provide students with rigorous training in microeconomic theory, macroeconomic theory, statistical analysis, and econometrics. In addition, the student selects a major area for intensive study and specialization. The usual time required to complete the Ph.D. program is four years.

Special Seminar

Each year the department offers a seminar program involving eminent economists from other universities and government, as well as presentations by faculty and student members of the department.

Courses

All courses offered in the Department of Economics are listed in the "College of Business Administration" section of the catalog.

Education

See "College of Education."

English

Department chair: Richard Lloyd-Jones


Studying English and American literature, a student learns to read a work of literature in relation to the culture of its origins and to interpret its meaning and value for present circumstances.

Study of the English language helps students examine the possibilities and limitations of spoken and written English both historically and analytically.

Knowing the theory and practicing the craft of writing helps students express their ideas in the public domain precisely and forcefully.

Majoring in English means pursuing these three aspects of the subject. Students who have taken English majors at The University of Iowa are now practicing law and medicine, working for advertising firms, newspapers, and book publishers, or for offices in state or federal government. Many others hold responsible positions in business and industry. Others are teaching in colleges as well as primary and secondary schools.

Undergraduate Programs

Bachelor of Arts

A Bachelor of Arts degree with a major in English requires 30 semester hours of credit in courses offered by the Department of English, of which should come from courses dealing with a major in English or related fields of studies above 1800 and at least 15 of which should be taken in residence at The University of Iowa.

In conference with their academic advisors, students work out program plans of study designed to satisfy their current interests and their future plans.

Non-majors begin with courses emphasizing close reading of poetry, fiction, and argument. Later they study particular literary genres and the literature and culture of selected historical periods.

English majors take courses in such diverse subfields as folklore, literature, film, or poetics and book design. They may also study the history and structure of the English language, or they may do advanced work in either imaginative writing (poetry, fiction, and drama) or functional writing (exposition or argument in the fields of journalism, business, science, or the arts).
To buttress their understanding of literature, English majors are encouraged to choose elective courses from such fields as history, classical or modern foreign literatures, speech, and the fine arts. Students planning to teach in primary or secondary schools will add appropriate courses in education. Those seeking careers in other fields may elect courses in business, pre-law, or the sciences.

As soon as a student decides to undertake an English major, he or she should consult the director of undergraduate study in the English department office, who will assign him a faculty advisor. In the English office, too, they may obtain a pamphlet on Designing Your English Major, and other printed material explaining departmental programs, courses, and special events.

Minor
A minor in English requires 16 semester hours of coursework in Department of English courses. Twelve of these hours should be in advanced courses (3:11 and above). Courses in the literature core, a graduation requirement for the College of Liberal Arts, do not contribute toward the minor program in English.

Literature Semesters
Available to all University undergraduates, the two literature semesters presently offered are 8:50-8:53 English Literature Before 1800 and 8:54-8:57 American and Contemporary Literature. The latter covers American literature from its beginnings through the present, as well as British literature since 1800.

Each literature semester carries 12 semester hours of credit and involves as much reading as would be contained in four ordinary courses. Classes meet two hours a day, five days a week. Three professors conduct all sessions, and the instruction is divided equally among them.

Since all works are discussed and compared within and across the conventional historical divisions, the students undergo an intensive discipline in practical criticism. They write a paper a week, practice oral reading and productions of scenes from plays, and often write parodies, imitations, and other exercises as a means of increasing their sensitivity to literary styles.

Honors
The English major with honors is designed to encourage talented students to explore a wide range of literary experience and to achieve a mastery of literary works. During the junior and senior years, an honors student takes a special honors seminar and engages in independent study supervised by an honors advisor. In his or her last semester before graduation, an honor student completes an honors paper, either critical or creative, and submits it for honors examination on British and American literature. Honors student is placed in consultation with the chair of honors in English and members of the honors committee.

Creative Writing
Many undergraduates come to The University of Iowa because of the excellence of its creative writing program. With the consent of his or her advisor, any student may elect the undergraduate courses in this program. These are 8:52:03 Creative Writing, 8:51:01 Fiction Writing, and 8:52:02 Poetry Writing.

Admission to the undergraduate workshops in fiction and poetry is only 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 no earlier than a week 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 which fulfill the state guidelines for teachers of English 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 (literature of the ancient world, Shakespeare, British literature of the nineteenth and twentieth centuries, American literature, literature for adolescents, literature of American ethnic groups, literature by women, folk literature), as well as a variety of methods for exploiting literary text. Students planning courses which will help them in their first teaching experiences should remember that they will have to work with details of expression in English.

They will need advanced training in writing—nonfiction, poetry, and fiction are all important—for these courses will help students understand and utilize 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, because this knowledge should help students understand development and how language can be adapted to meet various speaking and writing situations.

Since communication also occurs visually, students 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 comes increasingly to understand and respond to details of meaning and nuances of expression.

All these areas of study can be satisfied by courses within the department except the exploration of the 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 which 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 satisfy one semester of the same professional training apart from any other coursework.

The department also participates in a joint major in English and elementary education. Those interested in such a program should consult their advisors in elementary education.

Students who seek certification for secondary teaching in fields other than English may seek minor certification in English. This is particularly appropriate for students majoring in speech or journalism. Such a student must complete 20 semester hours of English, excluding freshman courses in rhetoric, speech, or writing.

The English minor certification program must include a course in each of these areas: advanced composition, Shakespeare, American literature, and British literature of the nineteenth or twentieth centuries. In addition to the 20 semester hours of English, the student is required to take 75/116 Methods; English in the College of Education’s Division of Secondary Education.

While this program meets minimum requirements for certification, the department believes that anyone desiring to teach English should have considerably more training in the field.

**Graduate Programs**

**Master of Arts**

The basic requirements for the M.A. in English are:

- Completion of a coherent curriculum, the plan of which is to be made in consultation with the student’s appointed departmental advisor;
- Completion of at least 30 semester hours of graduate study, of which 24 must be earned in residence at the University;
- Satisfactory performance on an 8-hour written final examination based on a list of literary texts, a copy of which may be obtained from the department’s graduate office.

These requirements clearly allow students a great deal of freedom in course selection. The M.A. degree in English encourages candidates to construct programs that are individually suited for their particular needs and interests. However, M.A. candidates who contemplate going on for a Ph.D. should request information pertinent to that degree so that they can efficiently prepare for passing the Ph.D. requirements while working toward the master’s degree.

**Master of Arts with Emphasis in Expository Writing**

This program emphasizes the theory, analysis, practice, and pedagogy of expository writing for students wishing to become teachers or critics of expository writing, or professional writers in such areas as the humanities, business and technical fields, or freelance work. Normally, the program takes from three to four semesters to complete.

To qualify for the M.A. with emphasis in expository writing, a student must complete 30 semester hours of graduate work with a grade-point average no lower than 3.0. At least 24 of these hours must be earned in residence at The University of Iowa, including 8 hours of work in advanced composition with a grade of B or A. In addition to the 30 semester hours of coursework, students will be required to complete at least 3 and no more than 6 semester hours of credit for the thesis.

In consultation with an advisor, the student will design an approved program of courses. These plans of study may be highly individual, including courses from many different areas or departments, but must be coherently organized around the student’s interests and objectives as a writer.

Finally, the student will submit to his or her committee a proposal for a thesis, which will be an extended piece of expository writing; there will be an oral examination covering the project, and the finished thesis must receive the committee’s final approval.

Students interested in this program should consult the director of the M.A. with emphasis in expository writing, or the director of advanced writing.

**Master of Arts and Specialist in Education**

This program is designed specifically for the person with a strong undergraduate major in English who wishes to prepare to teach in a two-year college. Upon successful completion of the program the student will receive the Master of Arts degree in English and the Specialist in Education degree. Both are nonthesis degrees, but a research paper is required for the Ed.S.

The program of study includes 9 semester hours of electives, 12 of literature, 11 of advanced expository writing and/or linguistics, and 15 in professional courses taught by specialists in English and in education. Each student spends one semester intensifying in a community college.

**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 in notable promise in writing translations, poetry, fiction, or play. The requirements are flexible, but usually include 48 semester hours of graduate credit, earned chiefly in the Writers Workshop; a book-length collection of poems or short stories, a novel, a play, or a work of creative writing in some other appropriate genre; and satisfactory performance on an examination in modern literature on the form the student is employing.

**Master of Fine Arts with Emphasis in Translation**

This alternative to the M.F.A. program in creative writing emphasizes the discipline of translation, viewed as a literary and literary genre. Student programs are individually structured and are designed to develop skills in source and target languages and cultures. The course also seeks to develop awareness of the tradition of translation...
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. Since sources are limited, normally fewer than half the applicants for aid receive it. New students should expect to support themselves through the first year.

Financial aid applications are considered only from students who have been admitted to a degree program in the Graduate College. Applications and all necessary supporting material must be submitted by February 15 for the following academic year. Forms are available from the department and the University Office of Admissions.

Admission

All applicants for admission to any graduate program in English must meet the general requirements for admission to the Graduate College, and must submit at least two letters in support of the application. In addition, M.F.A. applicants should submit samples of their poetry or fiction to the director of the Creative Writing Program; M.A. in Expository Writing applicants should submit a sample of exposition and a statement of purpose to the department of that program, and Ph.D. applicants should submit a representative sample of their writing—a course paper, seminar paper, or thesis chapter—to the department’s associate director of graduate study.

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 1922 it became the first institution of higher education to accept creative dissertations for advanced degree programs.

Founded in 1936, 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, and also brings numerous prominent authors to campus each year for lectures and readings.

The International Writing Program, founded in 1966, brings numbers of prominent foreign writers to campus each year.

The University of Iowa has also been a leader in the area of expository writing and historical theory; it is one of the few academic institutions in the nation which offers a full range of graduate coursework in this area.

In 1979, The University of Iowa established the Institute on Writing, a project for the professional development of college and university directors of freshman—writing programs. The Institute is a five-year project, jointly funded by the National Endowment for the Humanities and the University. The presence of the institute expands the resources available to students in the area of writing, and enables the department to bring distinguished instructors to campus to participate in regular course offerings in writing.

Special Facilities

The University Library is strong in all areas of English and American literature. It is especially noteworthy for its collection of American periodicals and its holdings of nineteenth- and twentieth-century works.

The department provides a wealth of opportunities for student involvement in critical, scholarly, and creative publications. The Iowa Journal of Literary Studies is a quarterly publication edited by graduate students, which features creative and scholarly work of students in English and related areas. Students may also gain editorial experience by working with The Iowa Review, Philological Quarterly, and the Midwest Modern Language Association. Visiting writers and lecturers are on the campus almost every week, and various conferences and other "festivals" supplement the schedule of class work.
Courses

Individual descriptions for the English courses listed below are not included because the content and emphasis of many courses varies considerably from one semester to another. Detailed course descriptions for all offerings in a specific semester are available in the English department office and on the English department’s website.

For Undergraduates

Lecture courses are open to all undergraduates who have satisfied the reticent requirement.

B 1 Modern Fiction 3 a.h.
B 2 Modern Poetry 3 a.h.
B 3 Modern Drama Course 3 a.h.
B 8 Classical and Biblical Literature 3 a.h.
B 9 Shakespeare 3 a.h.
B 12 Introduction to Film Analysis 3 a.h.
B 117 The Renaissance in Current Literature 3 a.h.

Introductory Close Reading of Texts

The following are limited-enrollment discussion courses in which a small number of texts are read carefully to illustrate representative problems in interpreting and evaluating literature.

B 20 Critical Approaches to Literary Works 3 a.h.
B 20H Masterpieces of English Literature 3 a.h.
B 21 Major British and American Poets 3 a.h.
B 21 Major British and American Fictionists 3 a.h.
B 22 Selected Plays 3 a.h.
B 24 Selected Fictions 3 a.h.
B 24 Selected Essays 3 a.h.
B 26 American Literary Classics 3 a.h.
B 26 Selected Works of the Middle Ages 3 a.h.
B 28 Shakespeare’s Comedies 3 a.h.
B 32 Selected Works of the Eighteenth Century 3 a.h.
B 42 Major Nineteenth-Century British Works 3 a.h.
B 44 Selected Literary Works Before 1800 3 a.h.
B 45 Selected Early Modern Works 3 a.h.
B 46 Selected Works of the Twentieth Century 3 a.h.
B 57 Introduction to the Renaissance 3 a.h.
B 58 Introduction to the Renaissance II 3 a.h.

Major Authors

The following are limited-enrollment discussion courses. Each author is represented by several major works. Combinations of authors are changed regularly. Permission with the instructor, a student may register for same course number if authors have been changed.

B 57 Chaucer 3 a.h.
B 57 Shakespeare (same as B 32) 3 a.h.
B 57 Selected English Authors 3 a.h.
B 57 Selected American Authors 3 a.h.
B 57 Selected Modern Authors 3 a.h.
B 57 Selected Authors 3 a.h.

Seminar Based on Course

B 66 Honors Seminar 3 a.h.
B 66 Undergraduate Seminar 3 a.h.
B 66 Graduate Seminar 3 a.h.

For Undergraduate and Graduate Students

Literature and Culture

Primary for upperclass students and beginning graduate students, these lecture courses are designed to present major works and authors within the context of the social, political, intellectual, and artistic movements of their time. Students who have established backgrounds in history or related arts are especially welcome. Undergraduate majors in English are urged to include at least one course of this type in the latter half of their majors.

B 100 Introduction to Critical Problems 3 a.h.
B 102 Literature and Culture of the Middle Ages 3 a.h.
B 103 Literature and the Culture of the Renaissance 3 a.h.
B 104 Literature and the Culture of Eighteenth-Century England 3 a.h.
B 104 Literature and the Culture of Nineteenth-Century England 3 a.h.
B 105 Literature and Culture of Twentieth-Century America 3 a.h.
B 106 Literature and Culture of Twentieth-Century America 3 a.h.
B 107 American Criticism and Culture 1800 to Present 3 a.h.
B 108 American Literature and Civilization 3 a.h.
B 109 European Literature of the Nineteenth Century 3 a.h.
B 110 American Fiction 3 a.h.
B 111 American Fiction 3 a.h.
B 112 American and British Novels 3 a.h.
B 113 American Indian Literature 3 a.h.
B 114 American Regional Literature 3 a.h.
B 115 Literature of Java 3 a.h.
B 116 American Literature of the 1920s 3 a.h.
B 117 Modern American Literature I 3 a.h.
B 117 Modern American Literature II 3 a.h.
B 117 Modern American Literature III 3 a.h.
B 117 Modern American Literature IV 3 a.h.
B 117 Modern American Literature V 3 a.h.
B 117 Modern American Literature VI 3 a.h.
B 117 Modern American Literature VII 3 a.h.
B 117 Modern American Literature VIII 3 a.h.
B 117 Modern American Literature IX 3 a.h.
B 118 African Literature 3 a.h.
B 119 African Literature 3 a.h.
B 120 Literature of Western Europe 3 a.h.
B 121 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
B 122 Literature and Culture of America Before 1800 3 a.h.
<table>
<thead>
<tr>
<th>Title</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literary Genre</td>
<td></td>
</tr>
<tr>
<td>Limited to the discussion of a single genre, and usually further restricted to a limited era and nation, these lectures or large discussion courses are appropriate for any undergraduate student or graduate student interested in the field.</td>
<td></td>
</tr>
<tr>
<td>Poetry</td>
<td></td>
</tr>
<tr>
<td>8:100 Chaucer</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:121 British Poetry</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:122 Milton</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:124 American Poetry</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:125 Modern British and American Poetry</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:137 Contemporary Drama in Poetry</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:125, 448:127</td>
<td></td>
</tr>
<tr>
<td>8:138 Selected Modern Poets</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:139 English and Scottish Ballads</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:142 Studies in the Poetry of Afro-Americans</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:177</td>
<td></td>
</tr>
<tr>
<td>Fiction</td>
<td></td>
</tr>
<tr>
<td>8:150 Twentieth-Century American Fiction</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:120</td>
<td></td>
</tr>
<tr>
<td>8:211 The Narrative Tradition</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:222 The English Novel: Ode to Action</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:223 English Novel: Scott to Butler</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:244 American Novel: 1860 to 1900</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:193 American Novel since 1940</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:195 American Novel since 1900</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:197 American Humor and Satire</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:213 The European Novel: 1700-1850</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:126</td>
<td></td>
</tr>
<tr>
<td>8:219 The European Novel: 1600 to Present</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:140 Contemporary Drama in Fiction</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:140</td>
<td></td>
</tr>
<tr>
<td>8:141 Popular Literatures</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:192 Studies in the Fiction of Afro-Americans</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:193 Science Fiction I</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:192 Science Fiction II</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:191 Literatures of the Time of Printex</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Drama</td>
<td></td>
</tr>
<tr>
<td>8:222 Shakespeare</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:172</td>
<td></td>
</tr>
<tr>
<td>8:140 Selected Dramatists</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:190</td>
<td></td>
</tr>
<tr>
<td>8:144 Modern Drama</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>L145 English Renaissance Drama</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:174</td>
<td></td>
</tr>
<tr>
<td>8:146 National Drama</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:175</td>
<td></td>
</tr>
<tr>
<td>8:190 British Drama: Since 1800 to 1900</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:177</td>
<td></td>
</tr>
<tr>
<td>8:150 Selected Modern Dramatists</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:177</td>
<td></td>
</tr>
<tr>
<td>8:154 Modern American Drama</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:177</td>
<td></td>
</tr>
<tr>
<td>8:164 Afro-American Drama</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:190</td>
<td></td>
</tr>
<tr>
<td>8:165 Continental Drama: 1700 to 1800</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:116, 448:174</td>
<td></td>
</tr>
<tr>
<td>8:166 Continental Drama: 1800-1900</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:116, 448:174</td>
<td></td>
</tr>
<tr>
<td>8:181 Studies in Drama</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:173</td>
<td></td>
</tr>
<tr>
<td>8:185 Studies in Modern Drama</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:173</td>
<td></td>
</tr>
<tr>
<td>Non-Fiction Prose</td>
<td></td>
</tr>
<tr>
<td>8:185 Theatrical Prose of European Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:120</td>
<td></td>
</tr>
<tr>
<td>8:57 Biographies and Autobiographies</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:184 Survey of Non-Fiction Prose</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Thematic Studies</td>
<td></td>
</tr>
<tr>
<td>8:150 Selected Themes in Literary Works</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:151 Women in Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:152 Literature of Peace and War</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:153 Uses of Power and Powerlessness</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:154 Concepts of Love in Western Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:126</td>
<td></td>
</tr>
<tr>
<td>8:155 Changing Concepts in Women's Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:174</td>
<td></td>
</tr>
<tr>
<td>8:156 Woman Writers</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Interdisciplinary</td>
<td></td>
</tr>
<tr>
<td>8:244 Language, Literature, and Medicine</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:126</td>
<td></td>
</tr>
<tr>
<td>8:511 Literature and Anthropology</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:717 Literature and Sociology</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:717 Drama and Theateral Arts For Rome</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:173 Narrative and Related Arts For Rome</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:173 Literature and the Film</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:191, 448:173</td>
<td></td>
</tr>
<tr>
<td>8:174 Film Script Analysis</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:175 Literature and Psychology</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:176 Literature and Philosophy Thought</td>
<td>5 a.h.</td>
</tr>
<tr>
<td>8:177 Literature and Art</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:178 Literature and Science</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:179 Literature and Society</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:181 Library and Music</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:180 Library and Music</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:181 United States Library European Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:173</td>
<td></td>
</tr>
<tr>
<td>8:184 Non-Fiction Prose and Non-Fiction Film</td>
<td>4 a.h.</td>
</tr>
<tr>
<td>Printing and Design</td>
<td></td>
</tr>
<tr>
<td>8:187 The Visual-Printed Book: Problems in Design</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:188 Medieval Manuscripts and Bookbinding</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 108:21, 448:23</td>
<td></td>
</tr>
<tr>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>8:180 Undergraduate History Project</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:180 Special Project for Undergraduates</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>For Graduates</td>
<td></td>
</tr>
<tr>
<td>Introductory</td>
<td></td>
</tr>
<tr>
<td>8:300 Introduction to Literary Scholarship</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:301 Critical and Literary Approaches to Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:304 Literary Perspectives</td>
<td></td>
</tr>
<tr>
<td>Medieval Languages and Literatures</td>
<td></td>
</tr>
<tr>
<td>8:211 Old English Annual</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:212 Old English Literature excluding Alfrew</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:215 Middle English Poetry and Prose</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:216 Middle English</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:217 Portraits of the Renaissance</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:218 Old Norse</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Literary Period</td>
<td></td>
</tr>
<tr>
<td>8:186 Early Renaissance Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:225 Seventeenth-Century Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:223 History of the Book</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:226 Historical Literature: 1700-1800</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:233 Romantic Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:236 Early Victorian Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:238 Lake Victorian and Edwardian Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:238 British Literature: 1914-1945</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:239 Contemporary British Literature: Since 1945</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:231 Early American Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:232 American Romantic Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:233 American Realistic Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:234 Early Twentieth-Century American Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:235 American Modernian Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:234 Augustan Stadists: History and Literature</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:234 Modern Literatures and Its Backgrounds</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Authors</td>
<td></td>
</tr>
<tr>
<td>8:211 Chaucer</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8:222 Shakespeare</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>Same as 448:172</td>
<td></td>
</tr>
</tbody>
</table>
| 98 LIBERAL ARTS/English
Professional

Although open to all graduate students, the primary purpose of these courses is to offer theoretical and practical training to those who plan to teach.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP 1300</td>
<td>Interpersonal Reading Comprehension</td>
<td>3</td>
</tr>
<tr>
<td>IP 320</td>
<td>Special Reading</td>
<td>1.5</td>
</tr>
<tr>
<td>IP 400</td>
<td>Practical Reading Evaluation</td>
<td>1.5</td>
</tr>
<tr>
<td>IP 405</td>
<td>Practical English</td>
<td>2</td>
</tr>
<tr>
<td>IP 180</td>
<td>Liberal Studies</td>
<td>Same as IP 110.</td>
</tr>
<tr>
<td>IP 180</td>
<td>Literature for Adults</td>
<td>Same as IP 180 and 181.</td>
</tr>
<tr>
<td>IP 210</td>
<td>Practical Textbook Composition</td>
<td>2</td>
</tr>
<tr>
<td>IP 217</td>
<td>Writing for Professional Education</td>
<td>3.5</td>
</tr>
<tr>
<td>IP 220</td>
<td>Practical Textbook Literature</td>
<td>3.5</td>
</tr>
<tr>
<td>IP 330</td>
<td>College: English in the Year-By-Year College</td>
<td>3.5</td>
</tr>
<tr>
<td>IP 245</td>
<td>Seminar: English in the Year-By-Year College</td>
<td>3.5</td>
</tr>
<tr>
<td>IP 350</td>
<td>Teaching in a Reading Laboratory</td>
<td>3.5</td>
</tr>
<tr>
<td>IP 375</td>
<td>Teaching in a Writing Laboratory</td>
<td>3.5</td>
</tr>
<tr>
<td>IP 400</td>
<td>B.A. Seminar English Education</td>
<td>Same as IP 375.</td>
</tr>
<tr>
<td>IP 425</td>
<td>B.A. Seminar: English Education</td>
<td>Same as IP 400.</td>
</tr>
<tr>
<td>IP 445</td>
<td>Seminar: Teaching Freshman Literature</td>
<td>Same as IP 425.</td>
</tr>
<tr>
<td>IP 440</td>
<td>Colloquium: Teaching of Freshman Literature</td>
<td>Same as IP 445.</td>
</tr>
<tr>
<td>IP 470</td>
<td>Colloquium: Teaching of Literature in College</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Expository Writing

General Interest

These courses are designed to serve the general interests and needs of undergraduate and graduate students in all areas of the University. They offer practice in writing in various forms of composition and various kinds of persuasive, expository, and persuasive writing.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E 10</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>E 11</td>
<td>Writing in History</td>
<td>3</td>
</tr>
<tr>
<td>E 12</td>
<td>Technical and Scientific Writing</td>
<td>3</td>
</tr>
<tr>
<td>E 13</td>
<td>Legal and Scientific Writing</td>
<td>3</td>
</tr>
<tr>
<td>E 14</td>
<td>Great and Useful Library for Vocabulary Building</td>
<td>3.5</td>
</tr>
<tr>
<td>E 15</td>
<td>Book Review Reading</td>
<td>2.5</td>
</tr>
<tr>
<td>E 16</td>
<td>Personal Writing</td>
<td>3</td>
</tr>
<tr>
<td>E 18</td>
<td>Writing for Personal and Public Purposes</td>
<td>Same as IP 18.</td>
</tr>
<tr>
<td>E 180</td>
<td>Advanced Expository Writing</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Special Interest

These courses are designed to serve the special interests and needs of advanced undergraduate and graduate students in particular academic and professional areas of the University. They offer practice in specialized forms of writing for specialized purposes and audiences.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E 120</td>
<td>Writing for the Sciences</td>
<td>3.5</td>
</tr>
<tr>
<td>E 113</td>
<td>Writing for Business and Industry</td>
<td>2.5</td>
</tr>
<tr>
<td>E 114</td>
<td>Extended Essays for Professional Writing</td>
<td>2.5</td>
</tr>
<tr>
<td>E 115</td>
<td>Writing in the Sciences</td>
<td>3.5</td>
</tr>
<tr>
<td>E 116</td>
<td>Creative Writing</td>
<td>3.5</td>
</tr>
<tr>
<td>E 117</td>
<td>Expository Writing</td>
<td>2.5</td>
</tr>
<tr>
<td>E 118</td>
<td>Practical Writing</td>
<td>2.5</td>
</tr>
<tr>
<td>E 119</td>
<td>Expository Writing</td>
<td>2.5</td>
</tr>
<tr>
<td>E 120</td>
<td>Notebook Writing</td>
<td>2</td>
</tr>
<tr>
<td>E 121</td>
<td>Reading and Translation</td>
<td>Same as IP 111.</td>
</tr>
<tr>
<td>E 122</td>
<td>Reading and Translation</td>
<td>Same as IP 121.</td>
</tr>
<tr>
<td>E 123</td>
<td>Reading and Translation</td>
<td>Same as IP 122.</td>
</tr>
<tr>
<td>E 124</td>
<td>Reading and Translation</td>
<td>Same as IP 123.</td>
</tr>
<tr>
<td>E 125</td>
<td>Reading and Translation</td>
<td>Same as IP 124.</td>
</tr>
</tbody>
</table>

Theory and Practice

These courses are designed to serve the general and needs of advanced undergraduate and graduate students who aim to become not only practitioners, but also critics or teachers of expository writing. They combine theory and analysis of expository writing with practical experimentation in writing.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E 130</td>
<td>Theme Study: Analysis and Inference</td>
<td>2</td>
</tr>
<tr>
<td>E 131</td>
<td>The Art of the Essay</td>
<td>2</td>
</tr>
<tr>
<td>E 132</td>
<td>Approaches to the Teaching of High School Writing</td>
<td>Same as IP 130.</td>
</tr>
<tr>
<td>E 133</td>
<td>Philosophy of Language and Use of Writing</td>
<td>3.5</td>
</tr>
<tr>
<td>E 134</td>
<td>Historical Theory Analysis and Application</td>
<td>2</td>
</tr>
<tr>
<td>E 135</td>
<td>Themes of Writing</td>
<td>2</td>
</tr>
<tr>
<td>E 136</td>
<td>Approaches to Teaching of Writing</td>
<td>2</td>
</tr>
<tr>
<td>E 137</td>
<td>Seminar: Teaching of Writing</td>
<td>2</td>
</tr>
<tr>
<td>E 138</td>
<td>Seminar: Problems of Readers</td>
<td>2</td>
</tr>
<tr>
<td>E 139</td>
<td>Seminar: Problems of Expository Writing</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Creative Writing

General Interest

These courses are designed to serve the general interests and needs of undergraduate and graduate students in all areas of the University. They offer practice in various forms and purposes of creative writing.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E 200</td>
<td>Creative Writing</td>
<td>2</td>
</tr>
<tr>
<td>E 201</td>
<td>Theory and History of Translation</td>
<td>Same as IP 120.</td>
</tr>
<tr>
<td>E 202</td>
<td>Fiction Writing</td>
<td>Same as IP 200.</td>
</tr>
<tr>
<td>E 203</td>
<td>Poetry Writing</td>
<td>Same as IP 202.</td>
</tr>
<tr>
<td>E 204</td>
<td>Prose Fiction Writing</td>
<td>Same as IP 203.</td>
</tr>
<tr>
<td>E 205</td>
<td>Balletal Writing</td>
<td>Same as IP 204.</td>
</tr>
<tr>
<td>E 206</td>
<td>Designing Writing</td>
<td>Same as IP 205.</td>
</tr>
</tbody>
</table>

French and Italian

Department chair: J. M. H. O'Farrell, Professor in charge. The department is responsible for the teaching of all courses in French and Italian. The department offers a wide range of courses in both languages, from introductory to advanced levels. The focus is on providing students with a strong foundation in language skills and an understanding of the cultures and literatures of France and Italy. The department also offers courses in translation, literature, and cultural studies. The faculty is composed of experienced teachers and scholars who are active in research and publication. The department is committed to providing a comprehensive and challenging curriculum that prepares students for further study and professional careers in the fields of French and Italian studies.
The department offers a variety of major programs in French and Italian, electives for nonmajors with prerequisite linguistic skills, and flexible menus to meet the formal language requirements of the College of Liberal Arts or to satisfy individual needs and interests.

*Students majoring in French or Italian may combine their studies with courses in education (see the “College of Education” section of the Catalog) to prepare for jobs in high school teaching. They may go on to graduate study in such areas as French, comparative literature, or history, as preparation for college-level teaching, or, in combination with other skills and studies, a major in French or Italian may prepare the student for challenging career 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 in literature, civilization, teaching, or applied French.

Course work in English do not count as credit towards the French major.

Literature Track

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, the literature track requires a total of 35 semester hours of credits in French, including:

9:27-28 Second-Year Composition and Conversation 3 s.h.
9:111-112 Third-Year Composition 6 s.h.
9:126 French Conversation: Third Level 2 s.h.
9:175 Advanced French Pronunciation 2 s.h.
9:25 French Pronunciation 2 s.h.

A minimum of four 100-level courses in literature (at least one of which must be above the 150 level), plus a fifth 100-level course is a choice of literature, 800-level language, or civilization, totaling 15 semester hours.

Civilization Track

Designed for students interested in French history, politics and culture, and recommended for students wishing to combine studies in French with a major in another area such as history, political science, pre-law, or journalism, the civilization track requires 34-35 semester hours of credit in French, including:

9:27-28 Second-Year Composition and Conversation 8 s.h.
9:111 Third-Year Composition 3 s.h.
9:126 French Conversation: Third Level 2 s.h.
9:138 French Conversation: Fourth Level 2 s.h.
9:27-28 Second-Year Composition and Conversation 8 s.h.
9:111 Third-Year Composition 3 s.h.
9:126 French Conversation: Third Level 2 s.h.
9:138 French Conversation: Fourth Level 2 s.h.
9:155 Commercial and Technical Translation 3 s.h.
9:127 Translation Project 3 s.h.

Two courses each in French civilization and literature 12 s.h.

Electives recommended as an adjunct are courses in French stylistics and textual analysis, another language, economics, political science, and/or business administration.

Bachelor of Arts in Italian

Requirements for the major in Italian include:

18:111-12 Intermediate Italian 8 s.h.
18:111-12 Advanced Composition and Conversation 8 s.h.
18:105-106 Introduction to Italian Literature 8 s.h.
18:119 Dante and His Times 3 s.h.
18:101 Literatures of the Nineteenth Century 3 s.h.
18:102 Literatures of the Twentieth Century 3 s.h.

Total 27 s.h.

Honors

The department participates in the College of Liberal Arts Honors Program. For an honors degree in French, the student must complete:

9:199 Honors Readings 3 s.h.
9:199 Honors Seminar 3 s.h.

An additional course numbered above 160 in French literature, language, or civilization 3 s.h.
Summer Program in France
The department is cosponsor 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 does not require that the student be a French major.
Centered in Cahors and Paris, the program combines formal classroom 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 eight or nine semester hours of credit in the program.

Summer Program in Quebec
The department participates in the CIC Summer French Program in Quebec at the Universite Laval. The Committee on Intercollegiate Cooperation (CIC) is a nonprofit organization whose purpose is to foster cooperative educational opportunities among the Big Ten universities and the University of Chicago. Affiliated with the CIC's pour non-francophones of the Universite 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.

Language House
The French and Italian department maintains close connections with the Aix-en-Provence at the Foreign Language House at Western, a University residence hall. Residents initiate cultural and educational programs with the participation of the faculty and other students, providing a unique opportunity to combine living with language learning.

Graduate Programs
Master of Arts in French without Thesis
The candidate must earn a minimum of 30 semester hours of graduate credit in a written and oral examination. The program must include 9:171 Advanced French Pronunciation, 9:209 Advanced Grammar and Lexicology, 9:210 Comparative Stylistics, and at least four graduate-level (200 and above) literature courses. With the permission of the departmental chair, the candidate may take up to 8 of the required 30 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 in the thesis program the candidate may earn up to six semester hours' credit for his or her thesis work. The candidate must defend the thesis at the time of the comprehensive examination.

Master of Arts in French Education
The program is intended primarily for prospective secondary school and junior college teachers. Requirements include a total of 38 semester hours of graduate credit. Of the total, 9 must be in education or related fields, and at least 9 must be in graduate (200 level) courses in French literature. The following courses are also suggested:
9:153 Stylistics: Analysis and Application
9:164 Textual Analysis
9:206 Advanced Grammatical and Lexicology
9:210 Comparative Stylistics
9:113-116 French Civilization
9:150 Methods: Foreign Language
9:151 Language Laboratory Equipment Procedures
9:160 Contemporary France
9:175 Advanced French Pronunciation

Candidates must pass a final written and oral examination.

Doctor of Philosophy
Requirements for the Ph.D. degree in French include completion of at least three years of graduate study, of which 9 at least one must be spent in residence at the University, the passing of a comprehensive examination; and the successful oral defense of a dissertation.
Specific requirements include 9;251 Introduction to Old French Grammar, and four semesters of college study or equivalent proficiency in a foreign language other than French.

The candidate must also complete three graduate courses for a minimum total of 8 semester hours of credit in a related field, such as another literature, or history, philosophy, etc.; and must earn at least 6 semester hours of credit in 9:277 Thesis. Students working toward the doctorate are required to spend at least one year teaching as graduate assistant in the department.

Graduate Admission
To be considered for admission to an M.A. program in French, the applicant must have completed the equivalent of the University of Iowa's undergraduate major in French. Students may make up deficiencies in previous training by taking appropriate courses.

The M.A. in French is prerequisite to admission to the Ph.D. program in French. Successful completion of the M.A. program, however, does not necessarily qualify a student for doctoral studies.

For students earning the M.A. at The University of Iowa, the M.A. comprehensive examination committee will make a recommendation concerning admission to the Ph.D. program.

Students applying for doctoral candidacy with the M.A. earned at another institution are, when admitted, placed on conditional status, and this status is reviewed after one semester of residence.
French Courses

Prerequisites for Undergraduates

A detailed description of course offerings is available in the office of the department. All courses are offered in English unless otherwise indicated. Courses numbered 100-116 are intended primarily for advanced undergraduates; a student should consult with her or his advisor before registering for these courses.

Course number 100-140 are given in English and do not count toward the major requirements in French, but may be taken as electives. Consultation with the advisor is recommended prior to registration. Students who have had significant experience with French, though study or foreign residence may be required to take placement tests given just prior to the opening of each term.

A student may not repeat, for either credit or grade points, a course that is a prerequisite to, or whose content is prerequisite to, a higher-level course the student has already completed.

For Undergraduates and Graduates

For students who have no knowledge of French.

For students who have no knowledge of French.

For students who have no knowledge of French.

For students who have no knowledge of French.

For students who have no knowledge of French.

For students who have no knowledge of French.

For students who have no knowledge of French.

For students who have no knowledge of French.

For students who have no knowledge of French.
General Science

Coordinator: Robert S. Yaeger
Degree: B.S. in 10 semester hours of credit in any three areas of general science.

The program in general science is designed for preprofessional students who need credit in several science disciplines, and for students interested in a variety of science disciplines. The program provides suitable preparation for secondary school teaching, health-related professions including medicine, dentistry, medical technology, optometry, physical therapy, and similar areas, and certain specialized graduate areas.

The major requirement for the Bachelor of Arts degree in general science is 44 semester hours of credit in any three College of Liberal Arts science/mathematics areas (biochemistry, botany, chemistry, mathematical sciences, geology, microbiology, physics-astronomy, zoology).

For the Bachelor of Science degree, the major requirement is 48 semester hours in any three of the science-mathematics areas.

For either degree, the major coursework must include 20 semester hours in one of the science-mathematics areas.

A student majoring in general science must earn at least 10 semester hours of grade credit in science courses taken at The University of Iowa.

No credit earned in a designated science core course or in the CLEP Natural Science General Examination may be applied toward the credit requirement for a general science major.

A student who is admitted to The University of Iowa College of Dentistry or College of Medicine or to a University of Iowa professional program in medical technology, nuclear medical technology, or physical therapy before completing requirements for the bachelor's degree, may apply up to 30 semester hours of credit earned in the first year of professional training toward the 126-hour requirement for a bachelor's degree with a major in general science, including a total of 8 semester hours of science credit toward the major requirement and, of these, 4 semester hours in the 20-hour concentration requirement.

To be eligible to receive a Bachelor of Arts or Bachelor of Science degree from The University of Iowa, a transfer student in any of the joint programs in general science must earn at least the last 30 semester hours of credit for the bachelor's degree in The University of Iowa College of Liberal Arts.

No credit earned in a science course in another college of the University may be applied toward the major credit requirements in general science unless the department of Biochemistry, Botany, Chemistry, Geology, Physics and Astronomy, Microbiology, or Zoology certifies in writing that the course is equivalent to one offered by that department.

A student in a general science teaching program may earn a Bachelor of Arts or Bachelor of Science degree by completing one of the approved sequences listed under "Science Education" in this section of the Catalog. Each sequence totals 60 semester hours.

Students who want to teach in secondary schools must also satisfy certification requirements, which include a 20-semester hour sequence in education (see "Secondary Education" in the "College of Education" section of the Catalog).

Students majoring in general science are urged to take a broad science core curriculum in basic and applied mathematics to prepare them for graduate study and quantitative research.

All general science students who are not in either the science education program or one of the health-related programs must complete one of the following mathematics courses, or an equivalent course, or a higher-level college mathematics course:

- 220.5 Quantitative Methods II 4 h.
- 220.11 Fundamentals of College Mathematics 4 h.
- 220.16 Calculus for the Biological Sciences 3 h.
- 220.20 Elementary Functions 3 h.

Any 22C course except 22C:1 Students majoring in general science are expected to meet the College of Liberal Arts language requirement with German, French, or Russian, unless the student's academic advisor gives written approval of another language.

Completion of a minor in general science requires at least 20 semester hours of credit in any three of the science or mathematics areas listed for the major (above); of these, at least 10 hours must be in 100-level courses.

This preceding description pertains only to The University of Iowa College of Liberal Arts requirements for a bachelor's degree with a major in general science, and no reference should be drawn from it concerning the specific requirements of any professional training program.

Genetics

Program director: L. D. Daugherty
Faculty: Program coordinator, Roger Kauffman (Biochemistry), Thomas Cooney (Biophysics), Irving Stanford (Biochemistry), Joseph Frese (Dental), Mary Gold (Dental), Joseph Heppner (Dental), Victor Vanecek (Pediatric), John Nevejegle (Pharmacy), Roger Allison (Dental), Davee Moller (Dental), Edward DePinto (Microbiology), Way Song (Microbiology), George Warner (Psychology), Hans Zechner (Biology), Gary G. Sturgeon (Pharmacology), Henry P. Nevejegle (Pharmacology), John Carlson (Biology), Wayne Carlson (Biology), William Pullins (Biology), James Haggan (Biology), Carol Watson (Dental), Fred S. B. (Dental), Warren Stover (Genetics), David Salzinger (Pharmacology), Warren Wang (Genetics)

Assistant professors: James O. Clay (Pharmacology), Kathleen Butler (Preventive Medicine), Ragnar Grunhagen (Biology), Thad A. Allen (Pharmacology), Smatrew Pietz (Pharmacology), William Rice (Pediatrics), George Breuer (Microbiology), Stanley Wolf (Biochemistry), Chunya Wu (Dental)

Degree offered: Ph.D.

The interdepartmental Ph.D. program in genetics is designed to promote collaborative investigations and intellectual growth of students and faculty participants affiliated with different departments.

Students enrolling in the program are encouraged to obtain a broad background in genetics, ranging from molecular to population genetics. Within this context, however, course requirements are flexible enough to permit students to tailor their formal coursework to fit their individual needs.

All students enrolled in the program are required to take 20.125 Metabolism, 20.178 Advanced Genetics, and 22.215 Genetics Seminar. In addition, they are required to earn at least three semester hours of credit in molecular and
Admission

The prospective doctoral student in genetics should have a strong undergraduate background in science, including courses in general genetics, organic chemistry, introductory physics, and mathematics, and a strong commitment to research and teaching in genetics. A student with deficiencies in a particular area can make them up during the first year of graduate study. Admission to the program is based on assessment of the applicant’s undergraduate academic record, performance on the Graduate Record Examination (GRE) verbal, quantitative, and analytic aptitude tests, and letters of recommendation. For admittance are not rigid. Although almost all students currently working toward the Ph.D. in genetics at the University of Iowa have undergraduate grade-point averages greater than 3.2 and GRE scores (verbal plus quantitative) exceeding 1250, students with lower grade-point averages or GRE scores may be considered depending on other indicators of academic potential.

The programs accept admission applications any time, but should receive them by February 15 to ensure the applicant’s consideration for entrance the following academic year.

Financial Aid

The most highly qualified applicants will be supported as National Institutes of Health predoctoral trainees. Traineeships include stipends of $20,020 for 12 months, complete tuition scholarships, and additional support for training research. In addition, stipends may be supplemented by occasional teaching or research; trainees are encouraged to do some teaching as part of their development as scientists and teachers.

Students may also be supported by half-time teaching or research assistantships, which stipends in excess of $5,000 per year. Students receiving assistantships may also apply for full or partial tuition scholarships.

Medical Scientist Training Program

Students may combine study toward a M.D. and a Ph.D. in genetics. Further information about this program can be obtained from the director of the Medical Scientist Training Program in the College of Medicine.

Departmental Ph.D. Programs

The departments of Biochemistry, Botany, Microbiology, and Zoology offer degree programs in which students may specialize in a particular aspect of genetics. See departmental descriptions elsewhere in this Catalog for further information about these programs.

Courses

The following are genetics courses available to graduate students.

- 99:233 Topics in Molecular Biology
  1-5 s.h.
  Section 1: 2104 Cyto遗传学 (3 s.h.)
  Section 2: 2160 Genetics and Biotechnology of Cell Organelles (3 s.h.)
- 2210 Genetics Seminar
  0-2 s.h.

50:175 Human Genetics
  2 s.h.
61:170 Microbial Genetics
  3 s.h.
61:179 Microbial Genetics Laboratory
  1 s.h.
61:270 Topics in Molecular Biology
  3 s.h.
37:192 Population and Evolutionary Genetics
  3 s.h.
37:153 Behavioral Genetics
  3 s.h.
37:165 Quantitative Genetics
  3 s.h.
37:171 Eukaryotic Molecular Biology
  3 s.h.
37:171 Molecular Genetics
  4 s.h.
37:172 Topics in Molecular Genetics
  2 s.h.
37:175 Topics in Evolutionary Genetics
  1-2 s.h.
37:178 Topics in Eukaryotic Molecular Biology
  2 s.h.
37:178 Advanced Genetics
  4 s.h.
37:280 Developmental Genetics
  2 s.h.
37:283 Seminar: Behavioral Genetics
  1 s.h.

Geography

Department chair: James R. Lindberg
Faculties: professors: John W. Fulker, James R. Lindberg, Michael J. Mahoney, David R. Reynolds, Gerald R. Norman
professors emeriti: Cyril P. Kinn, W. A. H. McCarty
associate professor: Ray G. Hirtler, R. Paloski
assistant professors: Kenji Kuzumaki, Katsuyuki, Russell Lee, Balazs V. Toth
affiliated faculty: Junichi Kusumi, Joseph L. Caneiro
Department of Biochemistry, B.S., M.A., Ph.D.

Modern geography is concerned mainly with the spatial aspects of human and physical geography and the relationship of man to his environment. Knowledge in elect courses in geography soon find that the insights and methods of inquiry they develop are applicable to the solution of many of the complex problems confronting modern societies, such as food and water pollution, transportation problems, the growth and development of large cities, distribution and consumption of natural resources, and other conflicts and tensions. Modern geography is as important as in its approach to the solution of these problems.

Studies in geography provide students with concepts and methods for organizing such spatial entities as urban areas, market regions, school districts, and health service areas. Thus today's geography contributes to the decision-making processes involved in
determining how individuals or groups of individuals can improve the quality of life in this complex age.

Career opportunities for majors in geography exist in various branches of government and business. There is a demand for persons capable of dealing with resource management, economic development, market area analysis, and other problems related to the distribution and spatial interaction of physical, economic, social, and political phenomena in the world as a whole or in major parts of it.

Courses in geography are commonly required of students preparing to enter the teaching profession at the elementary and secondary school levels, of students who want to work in urban and regional planning, and as a background for many related professions, including law, health care, environmental or transportation engineering, and business administration.

Undergraduate Program

The geography faculty has developed an undergraduate instructional program which provides educational opportunities for a variety of students: for the nonmajor interested in one or more elective courses as they relate to a liberal education; for students interested in entering a career in teaching geography in conjunction with another discipline or for the B.B.A. degree; and for students interested in acquiring a major in geography. The department also offers a number of interdepartmental programs involving global, urban, and environmental components.

Courses for the Nonmajor

Students in the College of Liberal Arts or other schools and colleges of the University may find geography courses meaningful to their own programs of study. The beginning-level courses 44:1 Introduction to Human Geography, 44:2 Natural Environment and Man, 44:11 Introduction to Social Geography, 44:19 National-Environmental Issues, and 44:30 Introduction to Economic Geography are available for core course credit in social science, and serve as part of a liberal education.

Other courses may also be attractive as individual electives. These include 44:15 Introduction to Political Geography, 44:33 Transportation in the U.S.A.: Issues and Problems, 44:35 World Cities, 44:115 Locational Conflict, 44:124 Introduction to the Global Environment: 44:182 The Third World, 44:191 Energy in Contemporary Society.

Students in several related disciplines and in the Bachelor of General Studies program may take a number of courses leading perhaps to a minor in geography. 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.

Alternative Programs for the Undergraduate Major

Students majoring in geography may choose alternative programs depending on their interests. The substantive strengths of the department fall into three areas: environmental studies, urban and regional studies, and international development studies. Students may choose to develop expertise in one of these areas, or may choose to 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 degree. Those who wish to pursue a liberal arts objective are advised to elect the Bachelor of Arts degree.

All geography majors must complete a minimum of 26 semester hours of geography coursework, at least 15 of which must be at the 200 level. Many students will find that they will need more than the minimum requirements for mastery of a specific subfield.

All majors must complete the courses 44:127 Applied Statistical Methods and Computations, or its equivalent as approved by the department, 44:110 Spatial Organization, and 44:150 Undergraduate Seminar for Geography Majors.

Bachelor of Science students must complete 4 mathematics requirement consisting of: 22M:10-11 Fundamentals of College Mathematics I or 22M:25 Calculus I or An appropriate mathematics course approved by the advisor. They must also complete a computer science requirement consisting of: 22C:7 Introduction to Computing with FORTRAN or 22C:16 Introduction to Programming with PL/I.

Environmental Studies

The undergraduate program in environmental studies is designed for students with career expectations in environmental careers or personal interests in resource management or environmental protection, or who have interests in physical geography per se. The program provides a knowledge of physical processes in landform development, atmospheric conditions, soil development, and aquatic communities. It stresses the importance of the atmosphere among these processes and gives the student knowledge necessary to discuss the impact of human activities on physical systems. Training in field observation, quantitative analysis, computer methods, and cartographic representation are included in this concentration.

Required courses are: 22M:10-11 Fundamentals of College Mathematics I or 22M:20 Calculus I 22C:127 Applied Statistical Methods and Computations 22C:7 Introduction to Computing with FORTRAN or 22C:16 Introduction to Programming with PL/I 44:110 Spatial Organization 44:150 Undergraduate Seminar for Geography Majors

Students concentrating in environmental studies are advised to select substantive courses (at least 21 semester hours) from among the following:

44:1 Introduction to Human Geography 44:12 Natural Environment and Man
44:30 Introduction to Economic Geography
44:101 Introduction to Weather and Climate
44:115 Topological Control
44:119 Natural Environmental Issues
44:120 Natural Hazards
44:131 Stream Processes and Water Resources
44:123 Geography of Natural Resources
44:124 Introduction to the Global Environment
44:128 Environmental Impact Studies
44:180 Field Techniques
44:181 Energy in Contemporary Society

Under the direction of an advisor, students should select courses (at least 12 semester hours) from among one of the following clusters:

Physical Systems
12:0 Introduction to Geology
12:06 Introduction to Oceangaphy
12:08 Geology of Iowa
12:10 Introduction to Remote Sensing
12:17 Geomorphology
527:102 Technology of Environmental Pollution Control
522:100 Principles of Environmental Engineering

Environmental Science
11:22 Ecology and Evolution
11:25 Chemistry and Physics of the Environment
11:26 Technology and Man
1:15 Plant Diversity
2:10 Plastics and Human Affairs
2:12 Rest of Earth
2:18 Plant-Animal Interactions
2:18 Field Ecology
2:32 Ecology
37:133 Topics in Ecology
37:135 Quantitative Field Ecology
37:169 Quantitative Methods in Biology

Environmental Management
68:1 Principles of Economics
68:2 Principles of Economics
68:103 Microeconomics
68:127 Natural Resources in the World Economy: Control and Conflict.
52:131 Economic Growth and Environmental Decay
68:81 Administrative Management

52:161 Individual Behavior in Organizations
52:163 Design and Management of Organizations
102:101 Introduction to Planning and Policy Development
102:102 Case Studies in Urban and Regional Planning
102:111 Introduction to Urban Transportation
or
52:111 Introduction to Urban Transportation

91:130 Resource Planning
527:102 Technology of Environmental Pollution Control
527:104 Environmental Planning and Assessment

Information Systems and Modelling
52:81 Administrative Management
37:134 Marketing Research
52:180 Management Information Systems
52:182 Management Science Topics
52:180 Management Information Systems
52:181 Management Systems Design
52:181 Digital Systems and Computers
52:32 Introduction to Systems Software
586:141 Operations Research II
586:141 Urban and Regional Studies

Under the direction of their advisor, students should select courses in related disciplines from the following:
52:101 Introduction to Planning and Policy Development
52:101 Introduction to Planning and Policy Development
586:127 Applied Mathematical Methods
and Computations
or its equivalent
44:110 Spatial Organization
44:150 Undergraduate seminar for Geography Majors
22M:101-11 Fundamentals of College Mathematics I and II
or
22M:25 Calculus I and II
522:16 Introduction to Computing with FORTRAN

Students concentrating in urban and regional studies are advised to select substantive courses (at least 21 semester hours) from among the following:
44:1 Introduction to Human Geography
44:2 Natural Environment and Man
44:11 Introduction to Social Geography
44:15 Introduction to Political Geography
44:30 Introduction to Economic Geography
44:33 Transportation in the U.S.A.: Issues and Problems
44:35 World Cities
44:111 Introduction to Urban Transportation
44:115 Localizational Conflict
44:15 Urban Political Geography
44:15 Environmental Impact Studies
44:15 Location of Services
44:15 Medical Geography
44:32 Industrial Location
44:135 Urban Geography
44:136 The Inner City
44:137 Urban and Regional Modeling
44:139 Urban Problems

Also strongly recommended:
44:107 Maps and Mapping
44:109 Computer Methods in Geographical Analysis

Under the direction of their advisors, students should select courses in related disciplines from the following:
113:11 Urban Anthropology
116:19 American History 1914-present
50:111 Municipal Government and Politics
34:172 Social Dynamics of Urban Life
22M:101 Introduction to Planning and Policy Development
International Development Studies

The concentration in international development studies is designed for students interested in international affairs; in the economic, social, and political development of new and old nations; in the solution of regional problems that have global implications; and in cross-cultural comparisons of values. This concentration aims to give students a deeper understanding of the world in which they will live and work by emphasizing the variety of cultures and societies which exist outside of the United States and to which our country must relate.

Required courses include:
- 225:127 Applied Statistical Methods and Computations
- 44:110 Spatial Organization
- 44:150 Undergraduate Seminar for Geography Majors

Electives include:
- 22:538 Quantitative Methods I
- 22:539 Introduction to Computing with FORTRAN
- 25:4:16 Introduction to Programming with PL/I

Students concentrating in international development studies are advised to select courses (at least 21 semester hours) from among the following:
- 44:1 Introduction to Human Geography
- 44:9 Natural Environment and Man
- 44:11 Introduction to Social Geography
- 44:16 Introduction to Political Geography
- 44:20 Introduction to Economic Geography
- 44:36 World Cities
- 44:115 Location/Conflict
- 44:124 Introduction to the Global Environment
- 44:161 Africa Development
- 44:162 The Third World

Graduate Program

The goals of the department at the graduate level are to prepare students to carry on creative and productive research in geography, to deepen their understanding of analytical methods, and to help students develop their abilities in applying knowledge of facts, theories, and methodology to specific societal problems. The achievement of these goals is demonstrated in large measure by the fact that for University of Iowa graduates in all positions on college and university faculties, in research-oriented institutions, and in business and government, the department offers specialized instruction in the teaching of geography at the college level (44:328 Teaching College Geography) for those interested in academic careers. Opportunities are provided for all graduate students to gain practical teaching experience through service as departmental teaching assistants or through other involved teaching duties.

Master of Arts

The department offers an M.A. program that emphasizes the acquisition of problem-solving skills. Within an overall analytical framework, students develop a broad area of competence that can be tailored to meet the contemporary demands of business, government, or the teaching profession. Recent graduates have obtained positions in health planning, community planning, transportation, and market research. The M.A. degree is also frequently taken by those whose ultimate goal is the Ph.D. degree. In consultation with their advisors, students design a broad area of competence, and in consultation with the faculty, develop a program of study emphasizing three dimensions: the subject matter of their area and its relationship to problem-solving methods, and philosophy and epistemology in geography. The M.A. degree requires a minimum of 30 semester hours of graduate work, of
which 18 semester hours must be 200-
level courses or above. Specific
requirements for the degree are:
At least 4 semester hours chosen from
among the Math courses 44:201-202,
Geographical Analysis II-III,
Satisfaction of the department's B.S.
degree requirements in mathematics,
statistics, and computer programming or
its equivalent (see below),
44:208 Quantitative Analysis I
and
An additional 12 semester hours in
gEOGRAPHY.
Additional courses in geography or
related fields complete the student's
program.
Students who enter with sufficient
background are frequently able to
complete the program in one full year.
The M.A. degree is available at
without thesis. A maximum of 6
semester hours of credit may be earned for
thesis work.
Students must pass a written
and/or oral final examination.
Doctor of Philosophy
Students whose objective is the Ph.D.
degree in geography are required to
complete 6-semester hours of 44:201-
202 Geographical Analysis I-II and
44:208-209 Quantitative Analysis I-II. The
eight-credit-hour courses comprising
44:201-202 should be taken within the
first two years in residence, and must
include mini-courses taken at least six
different faculty members. The
courses 44:208-209 Quantitative
Analysis I-II should be taken during the
first year in residence. Students may
meet these requirements with a
satisfactory performance in written
examinations during the first week of the
first semester for which they register.
All doctoral students must also complete
two research seminars, preferably
during the second year in residence,
under the direction of different faculty
members. Unless excused by the
faculty, Ph.D. candidates are also
required to register for 44:385-386
Research Seminar. Staff each semester while they
are in residence. One semester hour of
credit will be awarded each semester on
a satisfactory/unsatisfactory basis for this
course.

The remainder of the Ph.D. program
includes appropriate graduate courses,
seminars, and research in geography
chosen by students to reflect their areas
of interest; courses in disciplines closely
related to the student's objectives and
interests; and courses which satisfy the
university requirements.
No later than the fourth semester in
residence, doctoral students should
defend a thesis of specialization within
their general areas of interest and
secure a faculty advisor to direct their
programs of study.
Preferably during the second year in
residence, and not later than the fifth
semester, doctoral students who have
been admitted to the graduate program
without advanced credit must submit an
original research paper to the faculty,
with the approval of their advisor.
Students who have been admitted with
advanced graduate credit of 24
semester hours or more, or the
equivalent, must meet this requirement
not later than the third semester
in residence. The faculty will pass upon
the merits of the research thus
demonstrated. Students become Ph.D.
candidates when their qualifying papers
have been approved.
Research tool requirements for Ph.D.
candidates are the course 44:209
Qualitative Analysis II and another
appropriate course, as approved by the
faculty at the time the student declares
his or her specific area of
specialization.
All doctoral candidates are expected to
have supervised experience in
classroom instruction and research
assistants before being awarded the
Ph.D. degree.

Graduate Admission
In addition to the general rules and
regulations set forth in the Manual of
Rules and Regulations of the Graduate
College, the department considers the
applicant's undergraduate grade-point
average, especially of his or her junior
and senior years; scores on the
Graduate Record Examination-Analysis
Test; three letters of recommendation;
and an essay in which the applicant
sets forth the reasons for wanting to
study geography at The University of
Iowa.
An applicant with an undergraduate
grade-point average between 3.0 and
2.75 will be admitted only for the M.A.
degree and on the condition that he or
she achieves a grade-point average of
2.75 or better on the first 12 semester
hours of graduate work as approved by
the department.
Foreign students, and those from
undergraduate institutions that evaluate
students on a basis other than grade-
point averages, will be considered
according to their recent academic
standing in their respective institutions.

Financial Assistance
A number of graduate appointments as
teaching or research assistants are
available. Awards are based on merit
and a student must ordinarily have
achieved a combined score of 1100 on
the Graduate Record Examination-verbal
and quantitative sections, and have a
3.0 undergraduate or graduate grade-
point average, to be appointed to an
assistantship. Applications for graduate
appointments should ordinarily be
received by February 15.

Special Facilities
The department possesses a unique
complete graphic hardware system in
the MLAC PDS-4 mini-computer that
supports a GRAF PEN GP-3 sonic
digitizer. The PDS-4 is a 24K system
with a CRT for on-line editing and an
accompanying software support
package, DIGIT SERIES, developed
delocally that allows (or a broad range of
computer graphic applications. This
system is linked to one of the four HP
2000 systems in the Weeg Computing
Center. Each HP 2000 supports 32
terminals, including a second terminal in
the department, and is linked with the
IBM computer—an IBM 370/168.
Future interactive capabilities at The
University of Iowa will center on four
PDP-11/70 systems each supporting 48
terminals and all linked to the IBM
370/168. Complementing these
hardware systems are an increasing
number of compatible software
packages that will dramatically improve
interactive computing capabilities.
The Map Library contains more than
75,000 maps, a total of 2,050 atlases.
has the customary subfields—mineralogy, petrology, stratigraphy, structural geology, paleontology, sedimentology, economic geology, geomorphology, environmental geology—and also includes applied geophysics, geochemistry, and paleontology.

Career opportunities are available to professional geologists in industry (especially as related to the search for petroleum and mineral deposits, teaching, urban planning, state and federal geological surveys, and government, resource, and research organizations). The master’s degree is required by most hiring agencies as the working degree in geology. However, an undergraduate degree is highly desirable for certain teaching, federal, and industrial situations.

Many of The University of Iowa’s geology graduates find employment with the petroleum industry in exploration geology and geophysics. Others continue in graduate school or take jobs with government or conservation agencies. Some intend to enter law, business, or other fields such as urban planning, environmental studies, engineering, archeology, science education, or oceanography as advanced areas. Geology is suited to all these.

The program stresses the basic aspects of geology more than the engineering or agricultural phases of the discipline. The department specializes in relating scientific thought to the study of the earth. Its resources include a major paleontology facility (invertebrate, vertebrate, paleontology), a terminal link to the University computing center, the Iowa Geological Survey (located in the same building as the department), and research equipment for fields such as mineralogy, petrology (igneous, sedimentary, and economic), remote sensing, and exploration geophysics.

Geology majors receive at least an academic year’s work in allied scientific areas—physics, chemistry, biology, and mathematics—in addition to a course in each major area of geology.

Each year more than 1,000 students enroll in 1123 Earth History and Resources and 1124 Man and His Physical Environment, a team-taught, laboratory-lecture course designed to fulfill the College of Liberal Arts requirement for natural science core studies.

Other offerings for nonmajors include a lecture sequence for persons interested in a general survey of geology, and several advanced courses with few prerequisites—paleontology, geology of Iowa, energy in contemporary society, a planet in crisis, remote sensing, geomorphology, and oceanography.

Undergraduate Programs

Students majoring in geology must meet the general requirements of the College of Liberal Arts. It is recommended that they satisfy the language requirement with French, German, or Russian, and the social science requirement with approved courses in economics, geography, and/or anthropology.

Bachelor of Science

The Bachelor of Science professional program in geology is designed primarily as preparation for graduate study and for employment in industry. Required courses in this program:

12:5 Introduction to Geology 4 s.h.
12:8 Evolution of the Earth 4 s.h.
12:21 Mineralogy 4 s.h.
12:25 Elementary Petrology 4 s.h.
12:113 Summer Field Course 6 s.h.
12:121 Principles of Paleontology 3 s.h.
12:181 Structural Geology I 4 s.h.
12:182 Structural Geology II 3 s.h.
Two elective geology courses 6 s.h.
Total 36 s.h.

(Note: The student may substitute 11:23 Earth History and Resources and/or 12:24 Man and His Physical Environment for 12:5 Introduction to Geology, but 12:5 is preferred.)

The geology major requires at least 10 semester hours of college mathematics, including a minimum of one semester of 22M:25 Calculus I or 22M:35 Engineering Calculus I. Computer science or statistics courses may be counted toward the ten-hour requirement. Additional mathematics (e.g., 12M:26 Calculus II and 22M:38 Calculus III, or 22M:36-37 Engineering Calculus II-III) is strongly recommended.

Eight semester hours of physics, 8 semester hours of chemistry, and a one-semester laboratory course in college zoology or botany are also 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 in the B.S. program, for students who are not planning to become professional geologists. With appropriate coursework in education, the B.A. program provides a base for high school or community college teaching. A general background in geology and allied fields is also applicable in such areas as conservation and environmental problems. Course requirements for the B.A. in geology:

12:5 Introduction to Geology 4 s.h.
11:23 and/or 11:24 may substitute for 12:5.
12:6 Evolution of the Earth 4 s.h.
12:21 Mineralogy 4 s.h.
12:25 Elementary Petrology 4 s.h.
12:121 Principles of Paleontology 3 s.h.
12:116 Field Trip (two sections) 4 s.h.
Geology electives 12 s.h.
Total 35 s.h.

(Note: The student may substitute 11:23 Earth History and Resources and/or 11:24 Man and His Physical Environment for 12:5 Introduction to Geology, but 12:5 is preferred.)

The B.A. in geology requires at least 10 semester hours of college mathematics, which may include computer science or statistics. Eight semester hours of chemistry are also required, and courses in other sciences and social sciences appropriate to the student’s objectives are recommended.

Joint Programs

Joint programs can be arranged, typically with chemistry, physics, zoology, and anthropology.
Original Research
A junior or senior who is ready to pursue original research for credit in geology may select a faculty member and a graduate student with a current research project, or initiate a small-scale project involving a combination of field, laboratory, and library investigation. Independent study is encouraged. Undergraduate classes have produced term reports which subsequently were published.

Honor
A degree "with honors" in geology is offered. Students in the honors program can elect a senior thesis.

Graduate Programs
Students planning to take graduate work in geology should have completed geology and supporting courses equivalent to those required for an undergraduate major in geology at the University of Iowa. Students with deficiencies may remedy them at the beginning of graduate study.

All beginning graduate students in geology must take 12:107 Geologic Orientation.

All graduate students in geology must perform teaching, research, or related appropriate service as part of the degree program.

Program graduate students in geology should consult the "Rules and Regulations" in the "Graduate College" section of the Catalog for general admission and graduate study requirements.

Master of Science
The M.S. degree program is 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 advisor. Before the end of the second semester, the student should have selected a research area and related thesis topic. The chair then approves a thesis advisor and two additional faculty members, who form the student's advisory committee. The student is responsible for getting the committee's approval of a suitable program of coursework, and for satisfactory development of research plans as outlined in a thesis proposal which is submitted for departmental approval.

The degree requires at least 30 semester hours of credit in graduate level coursework, including not 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-half of the Ph.D. language and tool requirements as part of the master's program. Coursework taken to satisfy these requirements does not count toward the 36-semester-hour requirements for the degree.

To qualify for admission to the final master's examination, the candidate must have at least a 3.0 grade-point average on those graduate courses which are being offered toward the 30 semester hours minimum requirement for the degree. Additionally, the grade-point average on all graduate geology courses is to be at least 3.0. Not more than 8 semester hours of thesis and research may be counted toward the 30 semester hours minimum required for the degree program.

Master of Science with Thesis
Students are encouraged to select thesis topics involving a variety of geological specialties and fields of study. Research topics might include field work or mapping, laboratory experiments, analytical work, or some combination.

Master of Science without Thesis
The department encourages few students to pursue the M.S. without a thesis, which requires that the applicant have approximately three months' experience working under supervision of a professional geologist, or equivalent experience in some phase of geologic activity.

If possible, the student should receive prior faculty members to apply the experience toward the degree.

The student must submit a written report on the activity and on the geologic principles it involved and its value and broader applications and implications. No college credit is granted for this activity.

The M.S. degree without thesis requires at least 36 semester hours of graduate coursework, of which at least 6 hours must be earned in other departments of the University. The faculty may require the student to submit a formal scientific report dealing with an appropriate subject or project. Credit may be granted for the report.

The final examination covers coursework and work done in lieu of the thesis.

Master of Arts in Teaching (Earth Science)
This program enables students to combine certification to teach secondary school with participation in a specialized graduate curriculum. Awarded by the College of Education, the M.A.T. degree requires at least 20 semester hours of graduate study in professional education and at least 18 hours of graduate coursework in earth science.

Doctor of Philosophy
The Ph.D. degree in geology requires at least 72 semester hours of graduate coursework, including at least two full time semesters in residence beyond the last 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 and one tool. Competence is normally 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 are languages which meet departmental requirements; statistics and computer science are suitable tool areas. In exceptional circumstances the faculty may approve other languages or tool areas. Courses in such related disciplines as botany, chemistry, physics, and zoology are not regarded as satisfying tool requirements, although they may provide indispensable background for the various areas of geological specialization.

Coursework taken to satisfy language and tool requirements may not be applied to credit requirements for the degree.

These are the minimum requirements:
- Satisfactory of course requirements for the M.S. degree in geology at The University of Iowa. Where appropriate, additional work in one area may be approved as satisfying requirements in another.
- An appropriate graduate course in another discipline. Courses crosslisted between geology and other departments are not generally considered to meet this requirement.

At least 24 semester hours of graduate coursework, exclusive of credit for dissertation research and beyond coursework applied toward the M.S. degree.

The comprehensive examination courses, in depth, all subdivisions of the major field and one subdivision in each of three other related fields. It is also presumed that the doctoral candidate is proficient in the basic elements of general geology as presented in current elementary textbooks.

These are the major and minor fields:
- Economic Geology
- Economic Geology
- Economic Geology
- Economic Geology
- Economic Geology
- Economic Geology

Igneous and Metamorphic Petrology
Igneous Petrology
Metamorphic Petrology
Aquifer Geochemistry and Thermodynamics
Structural Geology
Geotechnics
Structural Analysis
Remote Sensing
Geophysics
Exploration Geophysics
Solid-Earth Geophysics
Rock Properties
Stratigraphy
Physical Stratigraphy
Biostratigraphy
Depositional Environments
Sedimentary Petrology
Sedimentation
Sandstone and Carbonate Petrology
Physical Stratigraphy
Paleoecology and Paleoecology
Paleontology
Vertebrate Paleontology
Quaternary Paleontology
Invertebrate Paleontology
Paleontology
Paleobotany
Paleoecology
Biostratigraphy
Geomorphology
General Geomorphology
Glacial and Pleistocene
Remote Sensing
Environmental Geology
Hydrogeology
Remote Sensing
Engineering Geology
Other Minor Subjects
Botany
Zoology
Chemistry
Physics
Materials Engineering
Geography
Hydraulics
Archaeology-Archaeology
Science Education

Facilities
Resources and equipment available for research in the Department of Geology include: mineralogy/petrology lab (X-ray diffractometers, powder cameras, wet chemistry lab, A.A. spectrophotometer, microscopes); sedimentology lab (thin-section lab, cathodoluminescence); paleontology facility (invertebrate, vertebrate, palynological; including a major repository); photographic lab; geophysics (gravity meter, field and rock magnetometers, susceptibility meter, seismograph, high-pressure apparatus); Iowa Geological Survey (located in same building as the department, with subsurface core repository and remote sensing lab); network of microearthquake stations and seismographs; in-house terminal for University's computer center (IBM 370, Prime 7200's, HP3000 computers); trailer-mounted soil probe; scanning electron microscope; microscope; geology library with 90,000 volumes/pamphlets and 65,000 maps.

Cooperative Activities
The department has joint professorships with the Iowa Geological Survey and the Department of Botany. Geology students sometimes work on projects for the Survey.

The departments of Geology, Geography, Anthropology, Chemistry, Botany, and Zoology cooperate in sharing services, expertise, joint instruction, and equipment.

Field Trips
Field trips are integral parts of several courses in geology. Weekend general-interest events are frequent. In the Iowa City region, the geology is characterized by a layer of glacial drift on a largely Paleozoic sedimentary section a few hundred meters thick, overlain by a Precambrian crystalline basement. Marine and terrestrial fossils, assemblages, extensive reefs, and unique geologic areas are available within a few hours' drive. All four Pleistocene glaciations are represented in Iowa and
German

Department chair: James P. Baedeker

Degrees offered: B.A., M.A., Ph.D.

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 designated as German, including West and East Germany, Austria, and Switzerland. University graduates with degrees in German frequently enter the teaching profession. They may also find positions in government, foreign service, and commercial enterprises.

Undergraduate Program

Students majoring in German choose one of two major tracks: the humanities track or the applied German track. The humanities track enables the student to concentrate in German language, literature, and culture, both past and present. It is recommended for students who wish to explore the German world of ideas and their influence through the ages. This track is required for students who plan to pursue graduate study in German and for those who plan a career in teaching.

The applied German track is designed to give the student practical skills and proficiency in the language for use in business and government. It is especially useful when combined with a program in a business-oriented curriculum or an appropriate career major.

Each track normally requires 24 semester hours of coursework in the department, beyond the basic program. The following course sequences, or their equivalents, are required for students who begin a major in German with no previous experience with the German language.

Basic Program

3:11 First-Semester German 4 a.h.
3:12 Second-Semester German 4 a.h.
3:21 Third-Semester German 4 a.h.
3:22 Fourth-Semester German: Reading 3 a.h.
3:23 Fourth-Semester German: Elementary Composition and Conversation 3 a.h.

Humanities Track

Third Year

3:31 Introduction to Modern German Literature 3 a.h.
3:32 Introduction to Modern German Literature: Literature 3 a.h.
3:33 Intermediate Composition and Conversation 3 a.h.
3:34 Advanced Composition and Conversation 3 a.h.

Fourth Year

3:101 Advanced Composition and Conversation 3 a.h.
3:103 German Cultural History 3 a.h.
3:105 Survey of German Literature 3 a.h.
3:112 Survey of German Literature 3 a.h.

Students who intend to go on for an advanced degree are encouraged to add 13:103 German Phonology (three semester hours) to the above.

Applied German Track

Third Year

3:33 Intermediate Composition and Conversation 3 a.h.
3:34 Intermediate Composition and Conversation 3 a.h.

13:105 Principles and Techniques of Translation 3 a.h.
13:107 Translation: Projects and Colloquium 2-4 s.h.
13:114 Business German 3 s.h.
or
13:115 Contemporary German Civilization 3 s.h.
Fourth Year
13:101 Advanced Composition and Conversation 3 s.h.
13:114 Business German 3 s.h.
or
13:115 Contemporary German Civilization 3 s.h.
The student in applied German must also complete at least one additional German literature or culture course.

German majors, graduate as well as undergraduate, are urged to supplement their degree programs with relevant courses in German history, philosophy, business, etc.

A student with native proficiency in German may declare German only as a second major, and is expected to complete a full first major in a subject in which he or she has no such obvious advantage over his or her peers.

Teacher Certification
Because the College of Education requirements for teacher certification are subject to change and could conflict at times with the sequential requirements of the major in German, it is imperative that the student consult with the department chair or undergraduate advisor to help ensure the successful completion of the certification program.

The Teaching Minor
In addition to the basic program requirements for the first and second year, a student must take the following courses or their equivalents for a teaching minor in German:
13:31 Introduction to Modern German
2-3 s.h.
13:32 Introduction to Modern German Literature I 3 s.h.
13:33 Intermediate Composition and Conversation 3 s.h.
13:34 Intermediate Composition and Conversation 3 s.h.
13:101 Advanced Composition and Conversation 3 s.h.

Honors in German
This program is open to junior and senior students who are majoring in German and have grade-point averages of at least 3.0 overall and 3.5 in German. During the junior and senior years the honor student in German is expected to engage in extra readings and discussions, and to write a term paper (if feasible) for each of the courses in which he or she is enrolled. A senior essay, written under the supervision of a faculty member, and a comprehensive oral examination terminate the program.

Special Facilities
Students have the opportunity to improve their comprehension and command of German by working with recorded materials in the Language Media Center. Students may also benefit from our Computer-Assisted Instruction program.

An extensive collection of works and periodicals in the University Library 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 on-campus housing option.

Foreign Study
The Department of German participates in the Regenta Summer Program in Austria. Sponsored by the three Iowa regents universities, this program is open to students in all disciplines.

A three-week session is conducted at St. Radegund, near Graz, Austria. Instruction in both language and culture is provided on three levels—intermediate, advanced, and very advanced. A second four-week session is held in Vienna, where faculty of the International University at the University of Vienna conduct morning classes daily, again on several levels. An optional cultural tour of Germany concludes the program.

To participate, the student must be admitted to one of the three Iowa regents universities for the summer session. Applicants should have a good basic knowledge of German—normally two years of college-level German or the equivalent. Students with less than two years may be accepted with the approval of the campus coordinator.

Graduate students are eligible to apply. All students are expected to speak only German while participating in the program. Program grants are available for qualified applicants.

For further information, write to the Department of German.

Master of Arts with Thesis
Graduate students of German who demonstrate an interest in and potential for productive scholarship and who plan to continue to the doctorate 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).

If the student has not completed major courses, or equivalents, in the department's undergraduate program, he or she will include them along with the courses required for the Master of Arts. Under some circumstances, the candidate may qualify for graduate credit for such make-up work.

With the graduate advisor's approval, some of the 30 semester hours required for the degree may be taken outside the department, in such related subjects as philosophy, history, linguistics, or other languages.

Normally, the student may receive two semester hours of credit for satisfactory completion of the thesis. The thesis may be either linguistic or literary, and is subject to the approval of the faculty.

Before the M.A. exam can be administered—usually after acceptance of the M.A. thesis—the candidate must demonstrate competence in a foreign language other than German, at a level equivalent to two years of college study
Master of Arts without Thesis
A graduate student preparing for secondary school teaching, government service, translation, etc., may elect the master's degree program without thesis. This program requires a minimum of 38 semester hours of coursework and is considered a terminal degree.

The same course requirements outlined for the M.A. with thesis apply to candidates for the M.A. without thesis; however, students in the latter program should, with the approval of the graduate advisor, select those courses which will best prepare them for their chosen careers.

Doctor of Philosophy
The Ph.D. degree is awarded upon the satisfactory completion of a minimum of 72 semester hours of graduate credit, and fulfillment of other requirements of the Department of German and the Graduate College (see the "Graduate College" section of the Catalog), with a concentration in either Germanic Linguistics or German Literature.

Credit received toward the M.A. degree is normally applied to the Ph.D. The student may earn up to 12 additional semester hours of credit for satisfactory completion of the Ph.D. dissertation. Graduate courses outside the department or related subjects may be counted toward the degree with the approval of the graduate advisor.

A candidate concentrating in literature must demonstrate a reading knowledge of French and of another language (Latin or Greek acceptable) pertinent to the student's research interests. For doctoral candidates in Germanic Linguistics, a reading knowledge of French or Russian and of a modern Scandinavian language or Dutch is required. Competence in these languages may be demonstrated by two years of college study or four years of high school study, with a grade of B or higher, or through testing. The student must meet the language requirements before taking the comprehensive exams.

Financial Aid
Teaching assistantships, research fellowships, and tuition scholarships are available for qualified graduate students. The department awards the Wilson and the Fiske prizes to students of distinction.

Courses
Primarily for Undergraduates

130-11 First Semester Dutch
4 s.h.
Use grammar-reading method; teach student to read Dutch with understanding; introduction to basic vocabulary and grammar. Ab 1.0 to 6.0 suitable.

130-12 Second Semester Dutch
4 s.h.
Continued in grammar-reading approach; with expanded reading of simple texts in Dutch; continued study of pronunciation and speech patterns. Prerequisite: 130-11 or equivalent.

130-13 Third Semester Dutch
4 s.h.
Concentration on developing skills by means of a broad grammar review and reading of advanced material in Dutch literature, culture, news media, other areas. Extension to composition, conversation, oral comprehension. Prerequisite: 130-12 or equivalent.

130-20 Dutch Elementary
4 s.h.
Designed to provide second and third semester or optimum level of understanding; focus on introduction of story grammar, grammar; basic conversational skills; classroom activities; reading, free reading.

Prerequisite: 130-13 or equivalent.

130-21 and 22 German for Transfer Students
4 s.h.

131-11 First Semester German
4 s.h.
Student has the option of taking either Reading or Approach: emphasis on reading and basic structure of the language. Or, Orientation to literature, focus on learning the grammar through listening and reading, with one hour of language laboratory per week.

Prerequisite: 130-12 or equivalent.

131-12 Second Semester German
4 s.h.
Continuation of 131-11, with same option of either approach. Grammar review on vocabulary building, introduction to literature.

131-13 Advanced Elementary German
4 s.h.
Combines standard first- and second-semester courses. Additional hours of language laboratory will be given. electives will be offered.

131-17 German and Nordic Literatures of the Middle Ages
4 s.h.
Studies the literature of the period, including: Parzival, Nibelungenlied, Ortelius's and Rastatt's Heimatspiele, others. Additional same-work seminars requirement: one course in German literature majors and one or two interest courses. Same as 131-17.

131-19 Third Semester German
4 s.h.
Emphasis structure of German language reviewed; emphasis on grammar, basic conversation and composition, prerequisite: 131-12 or equivalent.

132-01 Fourth Semester German Reading
4 s.h.
Teaching of short stories and representative literary works. May be taken concurrently with 132-02. Prerequisite: 131-19 or equivalent.

132-02 Fourth Semester German Elementary Compositions
4 s.h.
May be taken concurrently with 132-01. Prerequisite 131-19 or equivalent.

133-10 Intensive Second Year German
4 s.h.
Comprehensive preparation for French-semester courses. Emphasis on speaking as well as reading. Additional hours in language-laboratory required. May be taken concurrently. Prerequisite: 131-19 or equivalent.

133-20 Intensive Second Year German Literature
4 s.h.
Requirements for intensive second-semester courses. May be taken concurrently with 133-10. Prerequisite: 131-19 or equivalent.

133-21 Intensive Second Year German Literature I
4 s.h.
Reading and appreciation of representative German authors and writers under influence literature courses. Prerequisite: 131-19 or equivalent.

134-01 Introduction to Modern German Literature
4 s.h.
Prerequisite: 131-19 or equivalent. Prerequisite: 131-19 or equivalent.

135 Intermediate Composition and Compositions
3 s.h.
Recommended for students who intend to improve their active command of the language in reading, speaking, and writing. 130-12 and 131-12 may be taken concurrently with 135, but not concurrently. Prerequisite: 120-25, 130-25, or equivalent.

134 Intermediate Composition and Compositions
3 s.h.
Recommended for students who intend to improve their active command of the language in reading, speaking, and writing. 120-25 and 121-25 may be taken concurrently with 134, but not concurrently. Prerequisite: 120-25, 130-25, or equivalent.

150 German Progress in German
3 s.h.

For Undergraduates and Graduates

130 Individual German
3 s.h.
Primarily for majors and minors in German. Available only by arrangement with instructor.

131 Advanced Compositions and Compositions
3 s.h.
Oral and written exercises, required of upper-division students. May be repeated. Prerequisite: 130-12 or 134, or equivalent.

132 German Phonology
3 s.h.
An introduction to phonology and language structure of German language and an introduction to phonological and phonetics, basic phonetics course.

135 The Third Reich and Literature
3 s.h.

136 German Cultural History
3 s.h.
Cultural history of Germany from beginnings to present, with special emphasis on development of German language and literature.

137 Theorists and Techniques of Translation
3 s.h.
Introduction to theory of translation, focus on techniques of research, methods of research, and theory being taught. Prerequisite: 130-20 or equivalent.

138 Translation Projects and Colloquium
3 s.h.
For students working in pairs to individual translation projects. Intensive course, focuses on translation, methods of research, and theory being taught. May be repeated. Prerequisite: 130-20 or equivalent.

130-20 French Literature to Translation
3 s.h.
Perspective in French Literature: students writing in French. Prerequisite: 130-20 or equivalent.

130-21 Introduction to Modern German Literature I
4 s.h.
Reading and appreciation of representative German authors and writers under influence of literature courses. Prerequisite: 131-19 or equivalent.

130-22 Fourth Semester German Reading
4 s.h.
Teaching of short stories and representative literary works. May be taken concurrently with 132-02. Prerequisite: 131-19 or equivalent.

130-23 Fourth Semester German Elementary Compositions
4 s.h.
May be taken concurrently with 132-01. Prerequisite: 131-19 or equivalent.

130-24 Intensive Second Year German
4 s.h.
Comprehensive preparation for French-semester courses. Emphasis on speaking as well as reading. Additional hours in language-laboratory required. May be taken concurrently. Prerequisite: 131-19 or equivalent.

130-25 Intensive Second Year German Literature
4 s.h.
Requirements for intensive second-semester courses. May be taken concurrently with 130-24. Prerequisite: 131-19 or equivalent.

130-26 Intensive Second Year German Literature I
4 s.h.
Reading and appreciation of representative German authors and writers under influence literature courses. Prerequisite: 131-19 or equivalent.

130-27 Intermediate Composition and Compositions
3 s.h.
Recommended for students who intend to improve their active command of the language in reading, speaking, and writing. 130-12 and 131-12 may be taken concurrently with 130-27, but not concurrently. Prerequisite: 120-25, 130-25, or equivalent.

130-28 German Progress in German
3 s.h.

130 Individual German
3 s.h.
Primarily for majors and minors in German. Available only by arrangement with instructor.

131 Advanced Compositions and Compositions
3 s.h.
Oral and written exercises, required of upper-division students. May be repeated. Prerequisite: 130-12 or 134, or equivalent.

132 German Phonology
3 s.h.
An introduction to phonology and language structure of German language and an introduction to phonological and phonetics, basic phonetics course.

135 The Third Reich and Literature
3 s.h.

136 German Cultural History
3 s.h.
Cultural history of Germany from beginnings to present, with special emphasis on development of German language and literature.

137 Theorists and Techniques of Translation
3 s.h.
Introduction to theory of translation, focus on techniques of research, methods of research, and theory being taught. Prerequisite: 130-20 or equivalent.

138 Translation Projects and Colloquium
3 s.h.
For students working in pairs to individual translation projects. Intensive course, focuses on translation, methods of research, and theory being taught. May be repeated. Prerequisite: 130-20 or equivalent.

130-20 French Literature to Translation
3 s.h.
Perspective in French Literature: students writing in French. Prerequisite: 130-20 or equivalent.
Global Studies/LIBERAL ARTS

Language Courses for Graduate Nonmajors

13.113 German Elementary German
13.114 German Second-Year German
13.120 German Pronunciation
13.129 German Grammar

For Graduates

13.200 Advanced Studies
13.201 German Pronunciation
13.260 German Grammar

Global Studies

1.200 Introduction to German Studies
1.202 German History
1.204 German Literature
1.206 German Culture
1.208 German Language
1.210 German Philosophy
1.212 German Politics
1.214 German Society

1.216 German Modernity
1.218 German Contemporary Culture
1.220 German Contemporary Culture
1.222 German Contemporary Culture
1.224 German Contemporary Culture

1.226 German Contemporary Culture
1.228 German Contemporary Culture
1.230 German Contemporary Culture
1.232 German Contemporary Culture
1.234 German Contemporary Culture

1.236 German Contemporary Culture
1.238 German Contemporary Culture
1.240 German Contemporary Culture

1.242 German Contemporary Culture
1.244 German Contemporary Culture
1.246 German Contemporary Culture

1.248 German Contemporary Culture
1.250 German Contemporary Culture
1.252 German Contemporary Culture

1.254 German Contemporary Culture
1.256 German Contemporary Culture
1.258 German Contemporary Culture

1.260 German Contemporary Culture
1.262 German Contemporary Culture
1.264 German Contemporary Culture

1.266 German Contemporary Culture
1.268 German Contemporary Culture
1.270 German Contemporary Culture

1.272 German Contemporary Culture
1.274 German Contemporary Culture
1.276 German Contemporary Culture

1.278 German Contemporary Culture
1.280 German Contemporary Culture
1.282 German Contemporary Culture

1.284 German Contemporary Culture
1.286 German Contemporary Culture
1.288 German Contemporary Culture

1.290 German Contemporary Culture
1.292 German Contemporary Culture
1.294 German Contemporary Culture

1.296 German Contemporary Culture
1.298 German Contemporary Culture
1.300 German Contemporary Culture

1.302 German Contemporary Culture
1.304 German Contemporary Culture
1.306 German Contemporary Culture

1.308 German Contemporary Culture
1.310 German Contemporary Culture
1.312 German Contemporary Culture

1.314 German Contemporary Culture
1.316 German Contemporary Culture
1.318 German Contemporary Culture

1.320 German Contemporary Culture
1.322 German Contemporary Culture
1.324 German Contemporary Culture

1.326 German Contemporary Culture
1.328 German Contemporary Culture
1.330 German Contemporary Culture

1.332 German Contemporary Culture
1.334 German Contemporary Culture
1.336 German Contemporary Culture

1.338 German Contemporary Culture
1.340 German Contemporary Culture
1.342 German Contemporary Culture

1.344 German Contemporary Culture
1.346 German Contemporary Culture
1.348 German Contemporary Culture

1.350 German Contemporary Culture
1.352 German Contemporary Culture
1.354 German Contemporary Culture

1.356 German Contemporary Culture
1.358 German Contemporary Culture
1.360 German Contemporary Culture

1.362 German Contemporary Culture
1.364 German Contemporary Culture
1.366 German Contemporary Culture

1.368 German Contemporary Culture
1.370 German Contemporary Culture
1.372 German Contemporary Culture

1.374 German Contemporary Culture
1.376 German Contemporary Culture
1.378 German Contemporary Culture

1.380 German Contemporary Culture
1.382 German Contemporary Culture
1.384 German Contemporary Culture

1.386 German Contemporary Culture
1.388 German Contemporary Culture
1.390 German Contemporary Culture

1.392 German Contemporary Culture
1.394 German Contemporary Culture
1.396 German Contemporary Culture

1.398 German Contemporary Culture
1.400 German Contemporary Culture

1.402 German Contemporary Culture
1.404 German Contemporary Culture
1.406 German Contemporary Culture

1.408 German Contemporary Culture
1.410 German Contemporary Culture
1.412 German Contemporary Culture

1.414 German Contemporary Culture
1.416 German Contemporary Culture
1.418 German Contemporary Culture

1.420 German Contemporary Culture
1.422 German Contemporary Culture
1.424 German Contemporary Culture

1.426 German Contemporary Culture
1.428 German Contemporary Culture
1.430 German Contemporary Culture

1.432 German Contemporary Culture
1.434 German Contemporary Culture
1.436 German Contemporary Culture

1.438 German Contemporary Culture
1.440 German Contemporary Culture
1.442 German Contemporary Culture

1.444 German Contemporary Culture
1.446 German Contemporary Culture
1.448 German Contemporary Culture

1.450 German Contemporary Culture
1.452 German Contemporary Culture
1.454 German Contemporary Culture

1.456 German Contemporary Culture
1.458 German Contemporary Culture
1.460 German Contemporary Culture

1.462 German Contemporary Culture
1.464 German Contemporary Culture
1.466 German Contemporary Culture

1.468 German Contemporary Culture
1.470 German Contemporary Culture
1.472 German Contemporary Culture

1.474 German Contemporary Culture
1.476 German Contemporary Culture
1.478 German Contemporary Culture

1.480 German Contemporary Culture
1.482 German Contemporary Culture
1.484 German Contemporary Culture
require very careful academic advising by the program's faculty committee. All students enrolled in the program, including B.G.S. students, are required to complete (or have the equivalent of) two years' study of a foreign language and will be encouraged to go beyond this minimal requirement. Each student completing the program will be awarded a certificate, and the concentration in global studies will be noted on his or her transcript.

The Global Studies Program requires the completion, with at least a 2.0 grade-point average, of 24 semester hours of approved courses, distributed as follows:

**Introductory Course**

The student normally takes this course, 41:1 Global Interdependence and Human Survival, in the freshman or sophomore year. It lays the foundation for all further study of global issues.

**Global Studies Courses**

These courses, regularly offered by University departments, are organized under four major headings, as set forth below. The student normally elects one course (3 semester hours) under each major heading, and two additional courses (6 semester hours) under one of the headings, for a total of six courses (18 semester hours).

**Multidisciplinary Senior Seminar**

This course, 47:180 Global Studies Seminar, is offered every spring semester and is required of all students in the program.

**War, Peace, and Security**

This component of the Global Studies Program deals with the use of armed force for pursuits of political ends on a continuum ranging from potential global war to the individual act of terrorism. The various approaches will consider causes, effects, limitation, and resolution of violence in the contemporary setting. All students must take either:

- 30:164 Military Affairs or
- 16:149 War and Society

Students who elect to take three courses in this area would, in addition, take one of the following:

- 30:167 Arms Races and Arms Control or
- 66:123 Political Economy of the Military-Industrial Complex

And one from this group:

- 30:148 The Politics of Southern Africa or
- 30:165 Political Violence and Revolution or
- 30:181 The United Nations or
- 30:186 Politics of War and Peace or
- 30:187 Arms Races and Arms Control or
- 30:172 Introduction to International Law

18:90 Historical Background of Contemporary Issues

(When the course deals with issues of particular relevance to global studies students)

- 16:179 United States in World Affairs, 1500-1975
- 16:186 U.S.A. in a World at War, 1931-1945
- 66:182 Literature of Peace and War
- 66:123 Political Economy of the Military-Industrial Complex

**Development**

This component of the Global Studies Program deals with the problems of poor and developing countries, as 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 of and prognosis for the developing countries. All students must take either:

- 34:151 Sociology of the Third World (same as 113:151) or
- 66:129 Economic Development: Underdeveloped Areas

Students who elect to take three courses in this area would, in addition, take any two courses from this list:

- 30:148 African Development (same as 44:141, 45:163)
- 30:150 The Political Economy of the Third World
- 66:125 International Economics

**Natural Resources in the World**

- 66:127 Natural Resources in the World

**Economy: Control and Conflict**

- 66:126 Economic Development: Underdeveloped Areas

**World Economy**

- 66:158 The Political Economy of Socialism
- 44:35 World Cities
- 44:183 The Third World
- 34:151 Sociology of the Third World (same as 113:151)
- 34:168 Economic and Political Development: Women's Roles
- 34:174 World Population Problems
- 7F:104 Education in Newly Developing Countries
- 19:261 Development Support Communication (open to advanced undergraduates, with permission of instructor)

Certain area studies courses, drawn from the same area, may also be elected, subject to the program committee's approval, to fulfill this requirement.

**Environmental Concerns and Global Resources**

This component of the Global Studies Program is concerned with the availability, use, and disposal of global resources. Of special concern are the environmental problems arising from the demand for these resources by man using modern technology. All students must take either:

- 66:133 Economic Growth and Environmental Decay or
- 44:119 Natural Environmental issues

**Students who elect to take three courses in this area would, in addition, take any two of the following courses:**

- 44:119 Natural Environmental Issues
- 44:123 Geography of Natural Resources
- 44:161 Energy in Contemporary Society
- 37:128 A Planet in Crisis (same as 12:128)

**Economic Growth and Environmental Decay**

- 34:174 World Population Problems
Cross-Cultural Understanding

Global issues will require for their analysis and solution persons educated to understand the perceptions, values, and beliefs of many societies; that these differing values complicate the process of people communicating about and arriving at possible solutions to global problems; and that it is risky to accept as absolutes, without careful examination, the perceptions, values, and beliefs of any one society or culture.

The goal of this program component is to highlight cross-cultural differences themselves as a major contemporary global issue; to address some of the sources, dimensions, and policy implications of these value differences; to help foster the cross-cultural understanding and sensitivities required for dealing adequately with most global issues; and to encourage students to clarify their own values, and these bear on the analysis of global problems and proposals for their amelioration.

Except as noted below, all students must take either:
- 35:13 World Order and Conflitcting Values
- 13:12 Introduction to the Study of Culture and Society (except as noted below, students who elect to take three courses in this area would, in addition, take any two courses from the following list. Course in group A explores the general goals of the global value conflicts introduced in 35:13: 1 World Order and Conflitcting Values; courses in group B develop some of the more fundamental cultural processes and phenomena introduced in 35:12 Introduction to the Study of Culture and Society.)

Group A
- 32:131 World Order and Conflitcting Values
- 42:102 Preferred World Futures
- 30:185 Human Rights
- 91:193 Human Rights in the World Community: Problems of Law and Policy

Courses

66:166 The Political Economy of Socialism
61:211 Problems in International Communication
(Open to advanced undergraduates, with permission of instructor)

Group B
- 113:3 Introduction to the Study of Culture and Society
- 13:10 Anthropology and Contemporary World Problems
- 113:14 Language and Human Behavior
- 113:17 Comparing Cultures
- 113:150 Culture and Personality
- 113:156 Women's Roles: A Cross-Cultural Perspective
- 113:172 Language and Culture
- 113:181 Race, Ethnicity, and International Relations

32:35 Religion in Human Culture

Students electing to concentrate in the program area may, as an alternative means of satisfying program requirements, take three courses in the history and culture of one of the principal world geographical areas. The selection of the three courses is subject to the approval of the program's faculty committee. It is especially desirable for students selecting this option to fulfill the program's language requirement through the study of a language of the geographical area.

In addition to the academic program, the Global Studies Committee organizes talks and conferences of interest to the general public as well as students.

Undergraduate Program

Seccalutes in degrees in history go into a variety of positions in business, public service, or journalism. Many plan further training in history, law, religion, library sciences, or other fields.

A major in history includes work in other fields which 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. It is, for example, strongly recommended that the College of Liberal Arts degree require a foreign language to be taken in a language which fits in with the major student's 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, of which at least 12 semester hours must be in non-U.S. history courses. This limitation is imposed to assure acquaintance with the History of at least one other society besides our own.

Three semester hours in 18:01 Colloquium for History Majors. A colloquium consists of a small number of students collectively studying problems in ways which give training and experience in group discussion, analysis, and criticism. It is best taken after the student has taken a number of other history courses.

Of the 24 semester hours of history required for the major, 12 (including the 3 hours of colloquium) must be taken in residence at The University of Iowa.

A minimum of 18 to 18 semester hours in related courses in anthropology, economics, fine arts (excluding studio courses), geography, literature (excluding workshop courses), philosophy, political science, psychology, religion, and sociology; or a second major in one of these areas. Core courses and courses taken to satisfy core requirements will not be counted toward the related-areas requirement.

It is recommended but not required that the student pursuing the general major in history meet the College of Liberal Arts historical-cultural core requirements with 11:29-30 Problems in Human History, 11:51-52 Western Civilization, or 11:55-56 Civilizations of Asia.

Prospective Teachers in History

Students majoring in history who wish to qualify for a teaching certificate must satisfy the Historical-cultural core requirement by taking any two of the following courses: 11:29-30 Problems in Human History, 11:31-32 Western Civilization, 11:55-56 Civilizations of Asia (a total of 6 semester hours); and must complete the professional courses in the College of Education which are required for teacher certification (a total of 23 semester hours). They must also take 18:01 Colloquium for History Majors.

They must choose an area of concentration in history and meet these requirements:

American History Concentration Courses in U.S. History 20 s.h. Courses in related areas 36-44 s.h.

Students must select three of the following six related areas: economics, geography, world history (non-U.S.), political science, psychology, sociology. They must take 12 semester hours of courses in each of the three areas they choose, except psychology, in which they must take 20 semester hours. Courses in these subjects which have been taken to satisfy the social science core requirement may be applied to the required hours in related areas, but no more than one such course may be applied to any one related area.

World History Concentration Courses in non-U.S. History 20 s.h. Courses in related areas 36-44 s.h.

Students must select three of the following six related areas: economics, geography, American history, political science, psychology, sociology. They must take 12 semester hours in each of the three areas they choose, except psychology, in which they must take 20 semester hours. Courses in these subjects which have been taken to satisfy the social science core requirement 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. Up to 4 semester hours from history core courses (11:29-30, 11:31-32, 11:55-56) may be counted toward the required 20 semester hours in non-U.S. history.

Students seeking the teaching major in History 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 an extremely flexible program enabling 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 usually must be made by the beginning of the junior year, or as soon as the completion of the honors major leads to the Bachelor of Arts degree with honors in history. Requirements are:

A minimum of 24 semester hours of work in history, with at least 9 hours in the department's honors offerings, which may include up to 8 semester hours of honors thesis credit. Colloquium courses may also be elected for honors credit in lieu of honors seminars.

Related courses outside the department (same as regular major requirement).

Successful completion and oral defense of an honors thesis.

Graduate Programs

The graduate programs in history prepare students to teach in high schools or colleges, and for such occupations as publishing, commercial research, and government or other public service. With additional specialized training, students of history become prepared for U.S. archival work, library work, or historical editorship and display. Some students enter the 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. The first is for students who plan to work for the Ph.D. degree. It requires a minimum of 30 semester hours of credit, including the completion of a research essay. The candidate must earn at least 24 semester hours of credit in history. Twelve, including at least one seminar, must be in the area of the student's essay topic, and at least 6 must be in a
second division, including either a seminar or readings course.

The essay is the major division must be based on original research and should be in the vicinity of 10,000 to 15,000 words in length. Work on the essay will normally begin in the seminar in the major division and be continued with 15-26 Individual Study. Graduate, in which rewriting will be completed under the guidance of the supervisor. In exceptional cases where the essay completed in seminar is judged to be of outstanding quality, other courses may be substituted for 15-26.

Students who complete the M.A. under the alternative plan may not become candidates for the doctorate in History. The M.A. candidates must earn at least 30 semester hours of graduate credit, 24 semester hours of which must be in history. Of these, at least 12 must be taken in one division, and must include at least one readings or seminar course. The program must also include at least 6 semester hours in each of two other divisions in history, or 6 hours in one other division in history and 6 hours in a related department. These hours must include at least one readings or seminar course in history.

After completing these requirements, or in the semester in which they are to be completed, the M.A. candidate must take an oral and written comprehensive examination in the major division.

Doctor of Philosophy

Students who earn the M.A. with a research essay are admitted to the Ph.D. program upon the favorable recommendation of the examining committee. Students who earn an M.A. without an essay must meet the general requirements for admission to the Graduate College (see the "Graduate College" section of the Catalog), and must submit a specimen of their writing, such as a seminar paper or an M.A. thesis.

The candidates must earn at least 72 semester hours of credit, including credit for work done toward the master's degree. The 72 semester hours must include at least 48 semester hours in 200-level courses in history, apart from thesis credits. At least 16 of the 24 hours must be completed before the student takes the comprehensive examinations, and at least 16 of these 24 hours must be completed at The University of Iowa. The candidate must also 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 other tools of study. The candidate may not complete the comprehensive examination until these requirements have been met.

The comprehensive written and oral examination will cover four distinct fields, at least three of them in history. The fields in history must be chosen from at least two of these divisions: The Ancient World Medieval Europe Europe, 1500 to 1815 Russia and the Soviet Union United States History Latin American History History of China History of Japan History of India

The committee may define and detail the individual fields for examination. It may also set, separately for each field, the character of the written portion of the comprehensive examinations, which may take the form of a typewritten critical bibliography, a typewritten paper, or any other form or combination of these or other 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

All applicants for admission, whether for the M.A. or the Ph.D. program, must meet the general requirements for admission to the Graduate College. In addition they must submit a specimen of their writing—such as a term paper, seminar paper, or M.A. thesis—to the history department. All applications for graduate study are due February 15 for the fall semester. Applications for admission are due April 15 and November 15 for the following semesters. An applicant must take the Graduate Record Examination aptitude tests in order to be considered for admission. An undergraduate History major is not required for admission to the graduate program.

Guide to Graduate Study

Further information on graduate study is contained in the department's Guide to Graduate Study, sent to all applicants for admission. The Guide is revised every spring to include the latest changes in the faculty, the courses to be offered the following year, and the research interests of the members of the faculty, as well as detailed regulations on study toward advanced degrees and other information of interest to prospective students.

Special Facilities

The University Library is strong in all aspects of U.S. history. It houses the Harry A. Waltets papers and related collections, as well as other unique materials. In European history, the special strengths are in French and English materials. The Iowa State Historical Society in Iowa City and the Herbert Hoover Presidential Library in West Branch possess additional research materials of great value.

Courses

All courses numbered below 200 are open to freshmen provided they have already satisfied the historical-cultural core requirement. Most courses numbered below 200 are offered in alternate semesters. Most courses numbered 200 and above are offered as occasion demands.

1010 Civilization in World History 2 hrs.

Table varies with the instructor. Course must be completed by all majors. Open to other than history majors by consent of instructor. Offered every semester, may be repeated for credit.

1590 Introduction to Afro-American Society 3 hrs.

General survey of major themes prior to the emergence of African American as cultural identity.

1580 World History 3 hrs.

General survey of major themes prior to the emergence of African American as cultural identity.
Home Economics

The mission of the Department of Home Economics is to enhance the quality of life, with a program designed to develop a working understanding of the individual within his/her environment.

Through education, the department prepares professional home economists to work with individuals and families, or with businesses, agencies, and organizations providing goods, services, and programs which enhance the quality of life. It also contributes to the liberal and professional education of nonmajors.

Through research, the department creates new knowledge for and about individuals and families.

Through community service and other activities, the department directly assists individuals and families with their needs and problems.

Through study, understanding and use of design and housing, family development, food and nutrition, home economics education, and textiles and clothing, home economics contributes to the physical, psychological, social, and aesthetic development of people.

Home economics as a career offers a wide range of opportunities: teaching, dietetics, merchandising, interior and textile design, product development and quality control in textiles and food industries, consumer relations, family life education and services, food service management, and service with community or government agencies.

Undergraduate Program

The undergraduate program prepares students for immediate employment as professional home economists, and also for advanced study.

Concentration in design and housing, family development, food and nutrition, home economics education, or textiles and clothing makes it possible for undergraduate majors to develop specialization. The home economics core provides a central body of knowledge and a basic understanding of relationships among the various areas of specialization within home economics. Joint programs may be arranged with other fields such as journalism, art, secretarial work, and education. In meeting the general requirements for the B.A. or B.S. degree or the College of Liberal Arts, students majoring in home economics need to select courses in other departments which also are prerequisite for home economics courses.

All students majoring in home economics complete the core:

1709 Human Development and the Family 3 a.h.
1741 Food, Nutrition, and Men 3 a.h.
1750 Design for the Home 3 a.h.
1738 Textiles for Consumers 3 a.h.
17111 Management of Family Resources 3 a.h.
17131 Interior: Home Economics 2 a.h.

Bachelor of Arts

Design and Housing

Students concentrating in design and housing are prepared to pursue careers in the following areas: residential and contract interior design, space planning, design consulting, merchandising, fabric design, and related fields. The requirements for this concentration are:

1752 Presentation Graphics 3 a.h.
1754 Interior Design: Principles and Practices 3 a.h.
17155 Survey of Historic Interiors 4 a.h.
17180 Textile Design: Printing and Dyeing 3 a.h.
17156 Housing: Planning and Structural Aspects 3 a.h.

180 LIBERAL ARTS/Home Economics
Two of the following:
11:37 Form and Theory in the Visual Arts
11:38 Art in the Western World
11:42 Art in East and West
11:1 Elements of Art
12:2 Elements of Art
or
An approved two-dimensional studio art course
14:4 Basic Design
or
An approved three-dimensional studio art course
6E:1 Principles of Economics
or
6E:2 Principles of Economics
Also required are two of the following, one of which must be a studio course:
17:152 Interior Design: Principles and Practices I
17:154 Interior Design: Principles and Practices II
17:156 Survey of Modern Interior Design
17:167 Historic Restoration Methodology
17:168 Textile Design: Weaving
17:169 Textile Design: Forms and Colors
17:166 Housing: Social and Psychological Aspects
Electives from home economics, business administration, urban and regional planning, art history, studio art, architecture, and theater are recommended.

Family Development
This program prepares students for careers in social work and services concerned with the total family and its functioning, for family life education, and for the extension service. The following courses are required:
17:15 Growth and Development of the Young Child
17:12 Personal Financial Management
17:13 Marriage and Family Interaction
17:14 Parent-Child Relationships
17:15 Parent-Child Relationships in the Exceptional Family
17:119 Directed Studies in Family Development
17:122 Materials and Methods in Family Life Education
31:1 Elementary Psychology
34:1 Introduction to Sociology: Principles
34:159 The Family in Various Societies
34:161 The American Family
Electives from home economics, education, social work, economics, psychology, and sociology are recommended.

Food and Nutrition
This program prepares students for careers in dietetics and the food industry, and for service with community and government agencies. A concentration in food and nutrition requires:
17:131 Food Study
17:132 Food Study Laboratory
17:133 Meal Management
17:134 Experimental Food I
17:135 Experimental Food II
17:146 Nutrition Laboratory
17:142 Nutrition
4:13-14 Principles of Chemistry I and II
4:16 Elementary Chemistry Laboratory I
4:121 Organic Chemistry I Laboratory I
61:157 General Microbiology
72:13 Introduction to Human Physiology
99:130 The Chemistry of Biological Materials
99:130 Metabolism
Electives should be selected from home economics and the natural sciences. A concentration in nutrition with emphasis on dietetics requires:
17:131 Food Study
17:132 Food Study Laboratory
17:335 Meal Management
17:134 Experimental Food I
17:126 Food Service Systems Management
17:137 Food Service Administration
17:143 Nutrition
17:147 Diet Therapy
4:12-14 Principles of Chemistry I and II
4:16 Elementary Chemistry Laboratory I
4:121 Organic Chemistry I
99:130 The Chemistry of Biological Materials
99:130 Metabolism
8E:1 Principles of Economics
6L:156 Personnel Management
7P:75 Educational Psychology and Measurement
7P:131 Educational Psychology
3:4:1 Innovation to Sociology: Principles
3:1:1 Elementary Psychology
8:1:1 General Microbiology
7:2:1 Introduction to Human Physiology
11:3:3 Introduction to the Study of Culture and Society

Electives should be selected, according to the student's professional objective, from the natural sciences, business administration, psychology, computer science, statistics, education, and home economics.

Home Economics Education
This program leads to certification and vocational approval in some economics. Graduates are qualified to teach home economics in vocational and nonvocational secondary schools, to work in home economics extension and other agencies, and to teach in homeschool settings. Required courses for this concentration are:
17:31 Introductory Food Study
17:131-132 Food Study, Food Study Laboratory
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>17:112</td>
<td>Personal Financial Management</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:113</td>
<td>Marriage and Family Interaction</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:114</td>
<td>Parent-Child Relationships</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:211</td>
<td>Curriculum: Home Economics</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:131</td>
<td>Meal Management</td>
<td>2 a.h.</td>
</tr>
<tr>
<td>17:168</td>
<td>Home: Planning and Structural Aspects</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:168</td>
<td>Home: Social and Psychological Aspects</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:170</td>
<td>Custom and Contemporary Tailoring</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:171</td>
<td>Fitting Problems and Flat Pattern Design</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>18:1</td>
<td>Elements of Art</td>
<td>2-3 a.h.</td>
</tr>
<tr>
<td>18:2</td>
<td>Elements of Art</td>
<td>2-3 a.h.</td>
</tr>
<tr>
<td>66:1</td>
<td>Principles of Economics</td>
<td>4 a.h.</td>
</tr>
<tr>
<td>66:2</td>
<td>Principles of Economics</td>
<td>4 a.h.</td>
</tr>
<tr>
<td>3:1:1</td>
<td>Elementary Psychology</td>
<td>4 a.h.</td>
</tr>
<tr>
<td>34:1</td>
<td>Introduction to Sociology: Principles</td>
<td>4 a.h.</td>
</tr>
<tr>
<td>17:100</td>
<td>Science of Textiles</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:190</td>
<td>Textile Finishing, Dyeing, and Detergency</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:183</td>
<td>Textile and Apparel Economics</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>4:7:6</td>
<td>General Chemistry I-III</td>
<td>8 a.h.</td>
</tr>
<tr>
<td>4:6</td>
<td>General Chemistry Laboratory</td>
<td>2 a.h.</td>
</tr>
<tr>
<td>6:4:1</td>
<td>Introduction to Financial Accounting</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6:1:1</td>
<td>Principles of Economics</td>
<td>4 a.h.</td>
</tr>
<tr>
<td>6:3:1</td>
<td>Introduction to Marketing</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6L:81</td>
<td>Administrative Management</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6M:138</td>
<td>Consumer Behavior</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6M:137</td>
<td>Advertising Theory and Planning</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6A:1</td>
<td>A course in computer science</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6A:2</td>
<td>A course in communications</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6M:135</td>
<td>Course in business administration, computer science, journalism, communication, and home economics are recommended as electives.</td>
<td></td>
</tr>
<tr>
<td>17:170</td>
<td>Introductory Clothing Construction</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:172</td>
<td>Apparel, Fashion, and Selection</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:180</td>
<td>Science of Textiles</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:181</td>
<td>Textile Finishing, Dyeing, and Detergency</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:182</td>
<td>Textile Analysis</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:183</td>
<td>Textile and Apparel Economics</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:170</td>
<td>Custom and Contemporary Tailoring</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>17:185</td>
<td>Historic Textiles and Apparel</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>4:7:9</td>
<td>General Chemistry I-III</td>
<td>6 a.h.</td>
</tr>
<tr>
<td>4:6</td>
<td>General Chemistry Laboratory</td>
<td>2 a.h.</td>
</tr>
<tr>
<td>66:1</td>
<td>Principles of Economics</td>
<td>4 a.h.</td>
</tr>
<tr>
<td>225:102</td>
<td>Introduction to Statistical Methods</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>225:133</td>
<td>Quality Control, Reliability, and Engineering Statistics</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>8M:1:2</td>
<td>Another course in statistics</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>18:1</td>
<td>A course in computer science</td>
<td>3 a.h.</td>
</tr>
<tr>
<td>6E:1</td>
<td>Electives from computer science, statistics, engineering, psychology, chemistry, economics, and home economics are recommended.</td>
<td></td>
</tr>
</tbody>
</table>

**Bachelor of Science**

The B.S. programs are recommended for students who want greater depth or breadth in the natural sciences, and for those interested in research positions in colleges and universities or in industrial, governmental, or medical research laboratories.

**Food and Nutrition**

In addition to the requirements for the B.A. degree emphasizing food or nutrition, the B.S. degree requires the following courses:

- 22M:5:3 Mathematical Techniques                              | 6 a.h. |
- 22:4:20 Elementary Functions                                  | 3 a.h. |
- 22M:25 Calculus I                                              | 4 a.h. |
- 29:11:12 College Physics                                      | 8 a.h. |
- 4:130 Physical Chemistry for the Life Sciences               | 3 a.h. |
- 99:14C Experimental Biochemistry                             | 4 a.h. |

**Home Economics Education**

Graduates can enter the careers described for the B.A. degree in home economics education. The B.S. program enables students to obtain greater depth in economics-related occupation (for example, food service, day care center, retailing) for certification. This work experience can be through 17:000 Cooperative Education Training Assignment or through verification of work experience. Electives should be selected from education, journalism, psychology, sociology, and communication.

**Textiles and Clothing**

This program prepares students for careers in merchandising and related areas.

- Concentration in fashion merchandising requires:
  - 17:70 Introductory Clothing Construction                    | 3 a.h. |
  - 17:72 Apparel, Fashion, and Selection                       | 3 a.h. |
  - 17:170 Custom and Contemporary Tailoring                   | 3 a.h. |
  - 17:171 Fitting Problems and Flat Pattern Design            | 3 a.h. |
  - 17:173 Fashion Merchandising                               | 3 a.h. |
  - 17:174 Merchandising Communications                        | 2 a.h.  |
  - 17:190 Science of Textiles                                 | 3 a.h.  |
  - 17:191 Textile Finishing, Dyeing, and Detergency           | 3 a.h.  |
  - 17:193 Textile and Apparel Economics                       | 3 a.h.  |
  - 4:7:6 General Chemistry I-III                              | 8 a.h.  |
  - 4:6 General Chemistry Laboratory                          | 2 a.h.  |
  - 6A:1 Introduction to Financial Accounting                 | 3 a.h.  |
  - 6:1:1 Principles of Economics                              | 4 a.h.  |
  - 6:3:1 Introduction to Marketing                           | 3 a.h.  |
  - 6L:81 Administrative Management                           | 3 a.h.  |
  - 6M:138 Consumer Behavior                                   | 3 a.h.  |
  - 6M:137 Advertising Theory and Planning                     | 3 a.h.  |
  - A course in computer science                                | 3 a.h.  |
  - A course in communications                                  | 3 a.h.  |
  - Course in business administration, computer science, journalism, communication, and home economics are recommended as electives. | |

- Concentration in textiles technology requires:
  - 17:70 Introductory Clothing Construction                    | 3 a.h. |
  - 17:72 Apparel, Fashion, and Selection                       | 3 a.h. |
Honsors Program
To be eligible for honors, the student must have honor standing. 30 semester hours in residence at the University, an overall cumulative grade-point average of 3.0 or above, a grade-point average of 3.2 in all home economics courses, and at least 12 semester hours completed in home economics. Honors work consists of 17-181 Honors Seminar: Home Economics and 17-162 Honors Problems: Home Economics, in which students do creative work or a research project. A written report or honors thesis and an oral examination are required.

Graduate Program
The demand for well-qualified professional home economists far exceeds the number of graduates with advanced degrees. The master's degree graduate may qualify for positions in colleges, secondary schools, business, industry, and government. The graduate program enables students to obtain depth through specialization in one of five subject areas: design and housing, family development, food and home economics, and textiles and clothing. The department offers both thesis and nonthesis options. The thesis option is recommended for students preparing for teaching and research in colleges and universities, for positions in industry, and for continued study beyond the master's degree. The thesis option permits more intensive coursework and research procedures or the opportunity for extensive creative work. The thesis may be undertaken in the department, or in cooperation with related departments or colleges.

To be admitted unconditionally, the student must have an overall grade-point average of 2.6, with 3.0 in the area which is to be the major interest in graduate study. Conditional admission requires an overall grade-point average of 2.5 with 2.6 in the area of major interest in graduate study.

Master's Programs
For either the Master of Arts or Master of Science degree, students must complete a minimum of 30 semester hours of graduate work within three years. This includes courses numbered 100 or above in mathematics, economics, psychology, or sociology. The B.S. degree requires:

- 101 Elementary Quantitative Analysis 4 s.h.
- 121-122 Organic Chemistry I-Il 8 s.h.
- 224-225 Calculus I-II 4 s.h.
- 224M-225M Computation Laboratory for Calculus and Linear Algebra 2 s.h.
- 29-11-12 College Physics 8 s.h.

Electives should be selected from chemistry, engineering, computer science, statistics, microbiology, and home economics.

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. Majors who are concentrating in design and housing, home economics education, or textiles and clothing, and who meet the department's requirements, may apply to the Cooperative Education committees for participation in this program. Students register for 17:000 Cooperative Education Training Assignment at the time of their work experience and for 17:180 Home Economics Internship during the subsequent semester.

All students in the M.A. and M.S. programs are required to complete 17:350 Seminar: Home Economics Research. Those in the thesis option also complete 17:291 Thesis.

Design and Housing
Graduate study in design and housing may be planned as a specialized program in interior design or textile design, or as a more general program including a wider variety of courses. Applicants to this program must present a portfolio prior to admission. A variety of career opportunities is available for M.A. graduates in design and housing. These include college teaching, interior design, textile design, historic preservation and restoration, and positions in home economics and industry. Course work in planning and administration on previous coursework are:

- 17:156 Survey of Modern Interiors 2 s.h.
- 17:250 Seminar: Design and Housing 2 s.h.
- 17:266 Research: Problems in Design and Housing 2-4 s.h.
- 17:250 Seminar: Home Economics Research 2 s.h.

Courses for interior design specialization:

- 17:153 Interior Design: Principles and Practices II 3 s.h.
Family Development
The graduate student in this program gains both psychological and sociological perspectives in human development and family relationships. The plan of study may emphasize either human development, family relationships, or family life education. Courses in education, psychology, sociology, and social work supplement offerings in home economics. The graduate student should have an adequate background in social science. Graduates work with agencies concerned with the family or prepare for college and university teaching. Required courses for the family development concentration are:

17:196 Individual and Family Development: Life Span 3 s.h.
17:212 Seminar: Family Dynamics 3 s.h.
17:213 Theory in Family Development 3 s.h.
17:219 Research Problems in Family Studies 3 s.h.
17:300 Seminar: Home Economics Research 2 s.h.
One course in statistics 3 s.h.

A course from at least two of the following content areas:
Child development
Human sexuality
Family economics/Consumer issues
Aging

Food and Nutrition
Graduate work in this program may emphasize foods, nutrition, or nutrition education. Graduates qualify for positions in educational institutions, business, industry, government, and the health field. Applicants need background courses in foods, nutrition, general and organic chemistry, mathematics, physiology, and microbiology.

Courses required for the M.S. degree with specialization in food are:
17:134-135 Experimental Food trial 6 s.h.
17:236 Seminar: Food 2 s.h.
17:238 Research: Problems in Food and Nutrition 2-4 s.h.
17:241 Seminar: Nutrition 3 s.h.
17:290 Seminar: Home Economics Research 2 s.h.
99:120 The Chemistry of Biological Materials 3 s.h.
99:130 Metabolism 3 s.h.
99:157 General Microbiology 4 s.h.
225:101 Biostatistics 3 s.h.
or
7P:143 Introduction to Statistical Methods 3 s.h.

Courses required for the M.S. degree with specialization in nutrition are:
17:134 Experimental Food I 3 s.h.
17:145 Advanced Nutrition 3 s.h.
17:146 Nutrition Laboratory 2 s.h.
17:238 Seminar: Food 2 s.h.
17:238 Research: Problems in Food and Nutrition 2-4 s.h.
17:241 Seminar: Nutrition 2 s.h.
17:290 Seminar: Home Economics Research 2 s.h.
99:120 The Chemistry of Biological Materials 3 s.h.
99:130 Metabolism 3 s.h.
225:101 Biostatistics 3 s.h.
or
7P:143 Introduction to Statistical Methods 3 s.h.

Courses required for the M.A. degree with specialization in nutrition education are:
17:124 Nutrition Work with Children 3 s.h.
(or substitute, depending on professional goal)
17:145 Advanced Nutrition 3 s.h.
17:146 Nutrition Laboratory 2 s.h.
17:238 Research: Problems in Food and Nutrition 2-4 s.h.
17:241 Seminar: Nutrition 2 s.h.
17:290 Seminar: Home Economics Research 2 s.h.
7P:151 Educational Psychology 3 s.h.
7P:143 Introduction to Statistical Methods 3 s.h.
99:120 The Chemistry of Biological Materials 3 s.h.

Home Economics Education
The graduate student's program in home economics education may be planned for specialization in one area of home economics or for breadth in the whole of home economics. Graduates are prepared for positions in educational institutions at all levels, home economics extension service, social agencies, and business.

Applicants must have completed requirements for a teacher's certificate. At least two of the courses outside the department in the thesis option and those in the dissertation option must be from the same department.

The program's course requirements are:
17:235 Seminar: Residencies in Home Economics Education 2 s.h.
17:239 Research Problems: Home Economics Education 3 s.h.
17:390 Seminar: Home Economics Research 2 s.h.
7P:143 Introduction to Statistical Methods 3 s.h.
Another 200-level home economics course 2-3 s.h.

Textiles and Clothing
This program prepares students for careers in merchandising, textile research, teaching, extension service, and communication. Applicants need background courses in textiles, clothing, and chemistry. Courses required for the textiles and clothing concentration are:
17:276 Research: Problems in Clothing 3 s.h.
or
17:289 Research: Problems in Textiles 3 s.h.
17:390 Seminar: Home Economics Research 2 s.h.
Additional courses in textiles and clothing are required, based upon the student's educational background and professional needs.
Financial Awards
Several annual departmental awards recognize undergraduate students for their outstanding qualities and performance. The Horrabin Howard Writing Award is given to recognize excellent written work in the humanities. The Sophomore Book Award recognizes the sophomores in each major with the highest grade-point average. The Margaret Forster Hirt Award is a full-tuition scholarship given to a student for her senior year. The Myrl Ross Swauger Memorial Award is given to an outstanding home economics senior. These awards are selected by the home economics faculty. A limited number of scholarships are available to graduate students.

Courses
Primary for Undergraduates
17:090 Comparative Education Teaching Judgment 0.5 h
17:095 Human Development and the Family 3.0 h
17:096 Comparative Human Development: Special emphasis on the family, which is a constant of all cultures.
17:100 Growth and Development of the Young Child 3.0 h
Growth and development of young children: emphasis on lessons underlying growth and change.
17:101 Introduction to Family Resource Management 3.0 h
Use of basic principles in the preparation of standard tasks in home economics.
17:104 Food, Nutrition, and Men 3.0 h
Basic principles and practices of nutrition for the family.
17:106 Food, Nutrition, and Children 3.0 h
Basic principles and practices of nutrition for children.
17:107 Food and the Family 3.0 h
Introduction to homemaking: emphasis on principles of nutrition and family relationships.
17:108 Family Economics 3.0 h
Broad approach to the study of family economics. The course includes all aspects of family economics, such as income, housing, and transportation.
17:134 Family Economics 3.0 h
Foundation for the study of family economics. Course includes all aspects of family economics, such as income, housing, and transportation.
17:136 Family Economics 3.0 h
Foundation for the study of family economics. Course includes all aspects of family economics, such as income, housing, and transportation.
17:137 Family Economics 3.0 h
Foundation for the study of family economics. Course includes all aspects of family economics, such as income, housing, and transportation.
17:138 Family Economics 3.0 h
Foundation for the study of family economics. Course includes all aspects of family economics, such as income, housing, and transportation.
17:139 Family Economics 3.0 h
Foundation for the study of family economics. Course includes all aspects of family economics, such as income, housing, and transportation.
17:201 Family Economics 3.0 h
Foundation for the study of family economics. Course includes all aspects of family economics, such as income, housing, and transportation.
Primarily for Graduates

12/12 Seminar: Family Dynamics
Facilitating couples in a family setting, group problem-solving in family interaction.
Prerequisite: Consent of instructor. 3 cr.

12/14 Research in Family Development
Research-oriented developmental research and theory in family development: concept processes within families over the life span. Prerequisite: 24-181 or equivalent, consent of instructor. 3 cr.

12/15 Prehospital/Preceptorship in Family Violence
Children and Their Families
24 cr.
Interdisciplinary summer focusing on identification of crisis growth in the community and on prevention, education, and management of selected emotional and developmental disorders resulting in training with role models in the community. Prerequisite: Consent of the instructor. Semester in camps 6/24-6/25, 7/21-7/22, 8/11-8/12.

12/16 Research Problems in Family Studies
Individual research problem for graduate students. Prerequisite or consent of instructor. 1-6 cr.

12/21 Seminar: Home Economics and Human Behavior
Health and philosophy of home economics, nutrition and family-level consequences of socioeconomic change. Emphasis on applied research and classroom teaching of home economics careers in degree-granting institutions. Consent prerequisite, or enrollment by special permission.

12/22 Workshop in Home Economics Education
14 cr.
Preparation of home economics educators for the implementation of the instructional design research and teaching of human behavior. Prerequisite: Consent of instructor. Consent prerequisite.

12/23 Seminar: Readings in Home Economics Education
Critical review of current literature in home economics education. Prerequisite: Consent of instructor. 3 cr.

12/25 Consumer Issues Setting
24 cr.
Selected consumer topics from a wide variety of fields including consumer defense, consumer rights and responsibilities, laws and regulations, the consumer and the marketplace, consumer-product, and consumer-consumer relationships. Learning experience includes the consumer-consumer relationship. Prerequisite: Consent of instructor. A course in statistics.

12/26 Research Problems in Home Economics Education
24 cr.
Individual research problems of advanced standing. Prerequisite: Consent of instructor. 1-6 cr.

12/28 Seminar: Nutrition
Health and nutrition, plus discussion of current research in food science. Prerequisite: Consent of instructor. 12 cr.

12/30 Research Problems in Food and Nutrition
Research-oriented problems in food science, nutrition, and health. Prerequisite: 12 cr. 12 cr.

12/32 Seminar: Nutrition
2 cr.
Critical review of current literature in nutrition. Prerequisite: Consent of instructor. 12 cr.

12/33 Seminar: Design and Nutrition
Design and nutrition, rational design, realistic design, and nutrition, bodies, nutrition, and discussion of current literature. Prerequisite: Consent of instructor. 3 cr.

12/35 Studio Workshop in Fiber
4 cr.
Field trip to a specific medium, emphasis on practice for students. Prerequisite: Consent of instructor. 3 cr.

12/37 Research Problems in Design and Nutrition
Research-oriented problems for advanced students. Prerequisite: Consent of instructor. 12 cr.

12/40 Field Trip
Field trip to a specific medium, emphasis on practical experience for students. Consent prerequisite.

12/42 Seminar: Nutrition
Rational, nutrition, and discussion of current literature in cooking.

12/44 Research Problems in Nutrition
24 cr.
Individual research problems for advanced students. Prerequisite or consent of instructor. 12 cr.

12/46 Seminar: Public Health Nutrition
Public health nutrition, health education, and counseling of current literature in health science. Prerequisite or consent of instructor. 3 cr.

12/48 Research Problems in Public Health Nutrition
Research-oriented problems for advanced students. Prerequisite or consent of instructor. 12 cr.

12/50 Seminar: Home Economics Research
Methods and techniques of research in home economics and critically effects. Prerequisite or consent of a course in statistics or consent of instructor.

12/52 Thesis
Master's degree candidates.

Hospital and Health Administration
See "College of Medicine."

Italian
See "French and Italian."

Journalism and Mass Communication

Brian McEwan: Kenneth Sorensen
Faculty: professors Howard Fort, Donald Sorenson, Kenneth Sorensen, and graduate student seminar. Prerequisite: Consent of instructor. 4-7 cr. Consent prerequisite.

News reports, a course in reporting, newspaper reporting and editing, magazine writing and editing, public relations, broadcast journalism, and typography. While our program emphasizes the basics of reporting, writing, and editing, professional preparation requires a balance of theory and practice. We offer a wide variety of skills and theory courses to supplement these basics.

We believe students should have a strong liberal arts background in addition to their professional preparation. Thus, we require students to take three courses of their choice outside the school. We also require a minor in another department, or create their own area of emphasis with related courses in relevant departments totaling 24 to 30 semester hours of credit beyond the core level.

The college offers the B.A. and B.S. degrees. Major requirements are the same for both; acceptance depends on the B.S. degree must additionally take either 26-103 Introduction to Logic or 26-104 Introduction to Philosophy. Science, and may meet the second major requirement with either a full or major in a natural or social science: 8-12, 15-18, 15-21, 18-24, 18-27, 18-29. 12 semester-hour concentration, approved in advance. In the natural or social sciences, beyond core requirements: 12 semester-hour course work, approved in advance. Emphasis on liberal arts science methods, and two semesters of a foreign language or their equivalent, or other four semesters required for the B.A.

To meet the requirements for a minor in journalism, a student must complete at least 18 semester hours of coursework in journalism, including 12 semester-hour course work, approved in advance. Transfer work in introductory courses may be accepted toward the Minor. No courses counted toward the minor requirement may be taken pass/fail. A student must have at least a 2.0 grade-point average in the minor courses. Students must inform the Office of the Registrar of their desire to have a minor listed on their transcripts at the time they apply for a degree.

We offer undergraduates a choice of two sequences of study, news-editorial and mass communication.
Students in both sequences must fulfill these foundation requirements:

- 19:101 Cultural and Historical Foundations of Communication 3 s.h.
- 19:103 Scientific Foundations of Communication 3 s.h.
- 19:110 Introduction to Journalism Writing 5 s.h.
- 19:130 Legal and Ethical Issues in Communication 3 s.h.

Total: 12 s.h.

After completing the foundation courses listed above, the student selects one of the two sequences defined below to fulfill the 36-senior-hour degree requirement.

News-Editorial Sequence

This sequence is concerned with gathering, organizing, and effective writing of news and other information from printed, human, and environmental sources, and with the processing, packaging, and display of news stories, articles, and illustrations, for printed and broadcast media. It also provides for the development of the various technical skills required for work in the student's choice of media. The sequence is accredited by the American Council on Education for Journalism (ACEJ). The following journalism courses are required:

- Foundation Courses: 12 s.h.
  - 19:112 News Reporting and Writing 4 s.h.
  - 19:114 News Processing 3 s.h.
  - 19:118 Advanced Reporting 2 s.h.
  - Journalism electives 3 s.h.

- Total: 30 s.h.

Maximum journalism credits allowed toward graduation: 36 semester hours

Mass Communication Sequence

The mass communication sequence offers several approaches to the journalism major.

The laboratory-oriented approach stresses applied theory and practice to help students develop and refine their skills in such areas as writing, graphic design and typography, still and motion picture photography, and audio and video production. Career possibilities include broadcasting, video, public relations, and organizational communication.

Another approach is this sequence is primarily theoretical. It emphasizes the acquisition of knowledge about communication as it involves and operates in society. The course is designed for students majoring in political science, psychology, sociology, and related areas.

The following courses are required for the two tracks of this sequence:

Lab Track

- Foundation Courses: 12 s.h.
  - 19:112 News Reporting and Writing 4 s.h.
  - 19:114 News Processing 3 s.h.
  - 19:118 Advanced Reporting 2 s.h.
  - Journalism electives 3 s.h.

- Total: 30 s.h.

Maximum journalism credits allowed toward graduation: 36 semester hours

Theoretical Track

- Foundation Courses: 12 s.h.
  - 19:102 Special Topic in Communication 2 s.h.
  - 19:120 Special Topic in Communication (specify year) 4 s.h.
  - Other journalism courses, including 6 semester hours in advanced conceptual courses 10 s.h.

- Total: 30 s.h.

Maximum journalism credits allowed toward graduation: 36 semester hours

Honor Program

Students with superior ability may participate in the Honor Program. Freshmen with outstanding academic records are eligible to participate. Upperclassmen who are admitted in the honors courses. To graduate with honors, a student must complete specified requirements, including 6 semester hours of journalism honor courses, and must meet certain academic requirements. For more information, please see the student honors handbook.

Graduate Programs

Master of Arts

The School of Journalism and Mass Communication offers a Master of Arts program with two separate emphases: professional journalism or communication and mass communication. Applicants should indicate the emphasis to which they are seeking admission.

Both emphases require 30 semester hours of approved coursework, the completion of a master's project or thesis, and the successful completion of the final examination. The specific requirements of each emphasis are listed below.

Professional Journalism Emphasis

This emphasis is intended for students seeking to improve their technical and professional 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.

Program requirements for students with no academic or professional experience in journalism and communication:

- 19:200 Master's Seminar 3 s.h.
- 19:112 News Reporting and Writing 4 s.h.
- 19:241 Specialized Reporting 2 s.h.
- 19:245 Mass Communication Theory 2 s.h.

Program requirements for students with some academic or professional experience in journalism and communication:

- 19:200 Master's Seminar 3 s.h.
- 19:112 News Reporting and Writing 4 s.h.
- 19:241 Specialized Reporting 2 s.h.
- 19:245 Mass Communication Theory 2 s.h.
Journalism and Mass Communication/LIBERAL ARTS

Review

19:181 Mass Communication Lab 4 s.h.
(19:181 option intended for students with special interest in public relations or organizational communication)
Electives 16-17 s.h.
19:251 Master’s Research 3 s.h.
Final examination, last period of enrollment
Program requirements for students with professional experience in journalism or communication:
19:200 Master’s Seminar 3 s.h.
Electives in the school (minimum) 9 s.h.
Electives in other departments up to 15 s.h.
19:251 Master’s Research 3 s.h.
Final examination, last period of enrollment
The student must complete a master's professional project (19:251) under supervision of a graduate faculty member during the last period of enrollment.
The student selects elective courses in the school and in other departments in consultation with the advisor.

Communication and Mass Communication Emphasis

This emphasis offers a specialization in the study of communication phenomena with special emphasis upon theory and methodology. Qualified individuals may petition the graduate admissions committee of the School of Journalism and Mass Communication for admission to the Ph.D. program after successful completion of their M.A. work.
Program requirements:
19:200 Master’s Seminar (two semesters) 2 s.h.
19:201 Approaches to the Study of Communication: Issues and Concepts 3 s.h.
19:200 Communication Research: Historical Approaches or
19:201 Communication Research: Behavioral Approaches 3 s.h.
Electives in communication and mass communication and in other departments 19 s.h.
19:251 Master’s Research 3 s.h.
Final examination, last period of enrollment
All students are expected to take coursework outside the School of Journalism and Mass Communication, covering the nature and extent of the outside work to be determined by the student and faculty advisor.

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 analyses of present conditions. Rather, the approaches emphasize philosophical, ethical, 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 the faculty, who turn most frequently to investigations of historical, legal, social and cross-cultural aspects of communication, both verbal and visual, and is organized in a series of courses and seminars.
The Ph.D. program is highly individualized. Drawn 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, experience, professional drives, and intellectual preferences. Applicants should be interested in the opportunity to join a small group of faculty and students working to understand mass communication in its cultural contexts.

Iowa Center for Communication Study

The center encourages and facilitates inquiry into communication problems by faculty members and students. Center services include consultation, training, publication, assistance in obtaining financial support for projects, and assistance in computer use and data analysis. The center also publishes the semiannual Journal of Communication Inquiry, which is student-edited and seeks to explore different approaches to communication theory and research.

Other Special Facilities

The School of Journalism and Mass Communication is housed in the three-story Communications Center. The center has specialized laboratories for photography, typographic, editing, videography, typing, and printing production, including a simulation electronic newsroom. Many students use the newsroom and other facilities of the award-winning University student newspaper, The Daily Iowan. In addition, the Communications Center. The center also has its own Resource Center/Printing Room and gallery for student and faculty photography and/or art.
Semester in London

Each academic year, advanced undergraduates and M.A. professional students have an opportunity to study in England. The program involves a dozen students who carry a full load of courses, including some offered in conjunction with The City University of London. Courses at both a pre-graduate and post-graduate level are offered with classes in specialty report and the history of the British media available from The City University. In addition, internships with London news media are arranged or students. A journalism faculty member accompanies the group.

Courses

19.13 Introduction to Broadcast and Film Production

2-4

19.14 Media and Society

2-4

19.25 News Reporting and Writing

4-0

19.26 Broadcast and Film Production

2-4

19.27 Creative Writing

4-0

19.28 Journalism and Mass Communication

4-0

19.29 Mass Media History

4-0

19.30 Media and Society

4-0

19.31 News Writing

4-0

19.32 Broadcast and Film Production

2-4

19.33 Creative Writing

4-0

19.34 Journalism and Mass Communication

4-0

19.35 Mass Media History

4-0

19.36 News Reporting and Writing

4-0

19.37 Broadcast and Film Production

2-4

19.38 Creative Writing

4-0

19.39 Journalism and Mass Communication

4-0

19.40 Mass Media History

4-0

19.41 News Writing

4-0

19.42 Broadcast and Film Production

2-4

19.43 Creative Writing

4-0

19.44 Journalism and Mass Communication

4-0

19.45 Mass Media History

4-0

19.46 News Reporting and Writing

4-0

19.47 Broadcast and Film Production

2-4

19.48 Creative Writing

4-0

19.49 Journalism and Mass Communication

4-0

19.50 Mass Media History

4-0

19.51 News Writing

4-0

19.52 Broadcast and Film Production

2-4

19.53 Creative Writing

4-0

19.54 Journalism and Mass Communication

4-0

19.55 Mass Media History

4-0

19.56 News Reporting and Writing

4-0

19.57 Broadcast and Film Production

2-4

19.58 Creative Writing

4-0

19.59 Journalism and Mass Communication

4-0

19.60 Mass Media History

4-0

19.61 News Writing

4-0

19.62 Broadcast and Film Production

2-4

19.63 Creative Writing

4-0

19.64 Journalism and Mass Communication

4-0

19.65 Mass Media History

4-0

19.66 News Reporting and Writing

4-0

19.67 Broadcast and Film Production

2-4

19.68 Creative Writing

4-0

19.69 Journalism and Mass Communication

4-0

19.70 Mass Media History

4-0

19.71 News Writing

4-0

19.72 Broadcast and Film Production

2-4

19.73 Creative Writing

4-0

19.74 Journalism and Mass Communication

4-0

19.75 Mass Media History

4-0

19.76 News Reporting and Writing

4-0

19.77 Broadcast and Film Production

2-4

19.78 Creative Writing

4-0

19.79 Journalism and Mass Communication

4-0

19.80 Mass Media History

4-0

19.81 News Writing

4-0

19.82 Broadcast and Film Production

2-4

19.83 Creative Writing

4-0

19.84 Journalism and Mass Communication

4-0

19.85 Mass Media History

4-0

19.86 News Reporting and Writing

4-0

19.87 Broadcast and Film Production

2-4

19.88 Creative Writing

4-0

19.89 Journalism and Mass Communication

4-0

19.90 Mass Media History

4-0

19.91 News Writing

4-0

19.92 Broadcast and Film Production

2-4

19.93 Creative Writing

4-0

19.94 Journalism and Mass Communication

4-0

19.95 Mass Media History

4-0

19.96 News Reporting and Writing

4-0

19.97 Broadcast and Film Production

2-4

19.98 Creative Writing

4-0

19.99 Journalism and Mass Communication

4-0

19.100 Mass Media History

4-0

19.101 News Writing

4-0

19.102 Broadcast and Film Production

2-4

19.103 Creative Writing

4-0

19.104 Journalism and Mass Communication

4-0

19.105 Mass Media History

4-0

19.106 News Reporting and Writing

4-0

19.107 Broadcast and Film Production

2-4

19.108 Creative Writing

4-0

19.109 Journalism and Mass Communication

4-0

19.110 Mass Media History

4-0

19.111 News Writing

4-0

19.112 Broadcast and Film Production

2-4

19.113 Creative Writing

4-0

19.114 Journalism and Mass Communication

4-0

19.115 Mass Media History

4-0

19.116 News Reporting and Writing

4-0

19.117 Broadcast and Film Production

2-4

19.118 Creative Writing

4-0

19.119 Journalism and Mass Communication

4-0

19.120 Mass Media History

4-0

19.121 News Writing

4-0

19.122 Broadcast and Film Production

2-4

19.123 Creative Writing

4-0

19.124 Journalism and Mass Communication

4-0

19.125 Mass Media History

4-0

19.126 News Reporting and Writing

4-0

19.127 Broadcast and Film Production

2-4

19.128 Creative Writing

4-0

19.129 Journalism and Mass Communication

4-0

19.130 Mass Media History

4-0

19.131 News Writing

4-0

19.132 Broadcast and Film Production

2-4

19.133 Creative Writing

4-0

19.134 Journalism and Mass Communication

4-0

19.135 Mass Media History

4-0

19.136 News Reporting and Writing

4-0

19.137 Broadcast and Film Production

2-4

19.138 Creative Writing

4-0

19.139 Journalism and Mass Communication

4-0

19.140 Mass Media History

4-0

19.141 News Writing

4-0

19.142 Broadcast and Film Production

2-4

19.143 Creative Writing

4-0

19.144 Journalism and Mass Communication

4-0

19.145 Mass Media History

4-0

19.146 News Reporting and Writing

4-0

19.147 Broadcast and Film Production

2-4

19.148 Creative Writing

4-0

19.149 Journalism and Mass Communication

4-0

19.150 Mass Media History

4-0

19.151 News Writing

4-0

19.152 Broadcast and Film Production

2-4

19.153 Creative Writing

4-0

19.154 Journalism and Mass Communication

4-0

19.155 Mass Media History

4-0

19.156 News Reporting and Writing

4-0

19.157 Broadcast and Film Production

2-4

19.158 Creative Writing

4-0

19.159 Journalism and Mass Communication

4-0

19.160 Mass Media History

4-0

19.161 News Writing

4-0

19.162 Broadcast and Film Production

2-4

19.163 Creative Writing

4-0

19.164 Journalism and Mass Communication

4-0

19.165 Mass Media History

4-0

19.166 News Reporting and Writing

4-0

19.167 Broadcast and Film Production

2-4

19.168 Creative Writing

4-0

19.169 Journalism and Mass Communication

4-0

19.170 Mass Media History

4-0

19.171 News Writing

4-0

19.172 Broadcast and Film Production

2-4

19.173 Creative Writing

4-0

19.174 Journalism and Mass Communication

4-0

19.175 Mass Media History

4-0

19.176 News Reporting and Writing

4-0

19.177 Broadcast and Film Production

2-4

19.178 Creative Writing

4-0

19.179 Journalism and Mass Communication

4-0

19.180 Mass Media History

4-0

19.181 News Writing

4-0

19.182 Broadcast and Film Production

2-4

19.183 Creative Writing

4-0

19.184 Journalism and Mass Communication

4-0

19.185 Mass Media History

4-0

19.186 News Reporting and Writing

4-0

19.187 Broadcast and Film Production

2-4

19.188 Creative Writing

4-0

19.189 Journalism and Mass Communication

4-0

19.190 Mass Media History

4-0

19.191 News Writing

4-0

19.192 Broadcast and Film Production

2-4

19.193 Creative Writing

4-0

19.194 Journalism and Mass Communication

4-0

19.195 Mass Media History

4-0

19.196 News Reporting and Writing

4-0

19.197 Broadcast and Film Production

2-4

19.198 Creative Writing

4-0

19.199 Journalism and Mass Communication

4-0

19.200 Mass Media History

4-0
Iowa Lakeside Laboratory

Teaching and research facilities include seven laboratories and a lecture hall. Living accommodations include cottages, dormitories, and a large mess hall.

Financial Aid

The University of Iowa has established several Thomas H. 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

Currents or visitor students of The University of Iowa, the University of Northern Iowa, and Iowa State University should ask their registrars for particulars. Students from other jurisdictions must apply for admission to one of the three cooperating universities, each has a procedural admission policy for students who wish to register for summer work only. Early registration is advisable. All applications should be submitted before May 1 for the summer session following.

Courses

Permitting of the instructor is required for all courses. Enrollment is limited to six students in all courses. Classes meet all day, every day. Courses vary from year to year (see current Iowa Lakeside Laboratory bulletin), the following are representative:

L53 Field Biology

Introduction to land and natural history, teaching field studies in Iowa forests, laboratory techniques, conservation of plants and animals in the region. For students who have some knowledge of biology and want field experience.

L54 Field Ecology

Study of field ecology in general history of certain plants, emphasizing the ecology of dominant species, other organisms, interactions, and population. Field and laboratory study, field readings and a final examination. For students with at least one course in biology and interest in field experience.

L55 Aquatic Ecology

Lands such as prairie, prairie, study of aquatic organisms, impact aquatic productivity, fish species, and invertebrates. For students with a strong background in biology, including some ecology, chemistry, physics.

L300 Aquatic Ecology

Individual preference 1

L301 Plant Taxonomy

Basic processes of classification and evolution of higher plants. Morphological, ecological, and economic aspects are considered. Research and group projects arranged.

L302 Field Botany

Structure, function, and field classification of representative angiosperms; methods of studying local botany; systematic work of the course; methods for relating field studies; special techniques for research in taxonomy; for students with some botany/zoology or unrelated science background.

L303 Field Botany 2

Fieldwork, classification, and discussion of local plants; experimental work included.

L304 Fresh Water Physiol

Study of fish physiology laboratory examination, test describers compared with academic descriptions of living fish. For grad and advanced undergraduate students with developmental interest in biology or interest in the subject.

L305 Zoology of Iowa

Field and laboratory investigation of amphibians, reptiles, birds, mammals, and invertebrates in the University of Northern Iowa region. Individual or group projects. For upperclassmen or graduate students in biology.

L311 Research

L312 Research

L54 Independent Study

L55 Independent Study

L56 Field Biology

Student design techniques for collection, preparation, preservation, and culture of plant and animal samples. An overview of the total Iowa University. For graduate and advanced undergraduate students with developmental interest in biology or interest in the subject.

L517 Field Biology and Zoology

Field experience in study of freshwater from the upper Midwest, emphasis on environmental factors and animal communities. Field techniques and animal identification with emphasis on collection and preparation of sample species.

L518 Field Ecology and Zoology

Field experience in study of the Mcbride family research projects in Iowa, emphasis on field techniques and animal identification with emphasis on collection and preparation of sample species.

L519 Field Ecology and Zoology

Field experience in study of the Mcbride family research projects in Iowa, emphasis on field techniques and animal identification with emphasis on collection and preparation of sample species.

L520 Field Ecology

Field experience in study of the Mcbride family research projects in Iowa, emphasis on field techniques and animal identification with emphasis on collection and preparation of sample species.

L521 Field Zoology

Field experience in study of the Mcbride family research projects in Iowa, emphasis on field techniques and animal identification with emphasis on collection and preparation of sample species.

L522 Field Zoology

Field experience in study of the Mcbride family research projects in Iowa, emphasis on field techniques and animal identification with emphasis on collection and preparation of sample species.

L523 Field Zoology

Field experience in study of the Mcbride family research projects in Iowa, emphasis on field techniques and animal identification with emphasis on collection and preparation of sample species.
Latin American Studies Program

Overview: Nova England
Faculty: professors David Bernard (Economist), Gisele Miranda (Spanish and Portuguese), Charles Hays (History), Pamela E. Shaw (Economist), Michael Medley (Geography), James Morey (Politics: Brazilian), Peter K. Gers (Politics: Latin America), associate professors Thomas Clifton, Arianna Colacino (Spanish and Portuguese), Joyce Frank (Spanish and Portuguese), Oscar Torres (Spanish and Portuguese), Doris Guillet (Anthropology), Mario Santizo (Spanish and Portuguese)

Certificate Requirements

Primary Courses
To gain the knowledge of knowledge about Latin America and breadth in a variety of disciplines that deal with the region, a student seeking the Certificate in Latin American Studies must earn at least 15 semester hours of credit in courses selected from the primary courses listed below, including at least 6 semester hours from each of at least three of the four inter-divisional cooperating departments: Anthropology, History, Political Science, and Spanish and Portuguese. Primary courses are courses dealing specifically with Latin American topics.

Electives
Students choose 6 semester hours of electives from the primary course offerings.

Related Courses
The student chooses an additional 12 semester hours in related courses. These are courses whose content includes some material directly concerned with Latin America or that treat issues relevant to the area. Courses in this group may be selected from additional offerings of the primary departments, from approved courses offered by the related departments, and/or from other University courses approved by the student's Latin American Studies advisor.

Senior Seminar
Seminars is the program enroll in 115:132 Latin American Studies Seminar, a 4-semester-hour interdisciplinary course built around problems of specific interest to Latin American and taught by two faculty members from primary departments.

Overlapping Credits
While the certificate program requires 40 semester hours of coursework, students majoring in any of the program's four primary departments are able to count a significant number of the courses required for their majors toward the Certificate in Latin American Studies, and students majoring in related departments 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 18 semester hours in primary courses, 12 semester hours of which must be in courses numbered above 100. To preserve the interdisciplinary character of the Latin American Studies minor, students majoring in any of the primary departments cannot count more than 3 semester hours from courses in their major department toward the minor.

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

Anthropology
115:118 Ethnology of South America 3 s.h.
115:119 Ethnology of Mesoamerica 3 s.h.
115:128 Social Anthropology of the Caribbean 3 s.h.
115:131 Latin American Economic and Society 3 s.h.
115:132 Latin American Studies Seminar 3-4 s.h.
115:148 Comparing Cultures 3 s.h.
115:163 High Civilizations of Mesoamerica 3 s.h.

History
18:89 Culture and Politics of Latin America 3 s.h.
18:192 The Mexican Revolution 3 s.h.

Political Science
30:144 Latin American Government 3 s.h.
30:145 Major States of Latin America 3 s.h.
30:163 Inter-American Relations 2-3 s.h.

Portuguese
38-16 Hispanic World I (Same as 38-4. Taught in English) 4 s.h.
38-67 Hispanic World II (Same as 38-7. Taught in English) 4 s.h.
38-103 Modern Brazilian Fiction I: Short Story 2 s.h.
38-104 Modern Brazilian Fiction II: Novel 2 s.h.
38-106 Brazilian Literature I 3 s.h.
38-108 Brazilian Literature II 3 s.h.
38-109 Nineteenth-Century Brazil 3 s.h.
38-115 Brazil: People and Culture (Taught in English) 3 s.h.
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish 56:4 Hispanic World I</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:56 Contemporary Latin American</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>Native</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:57 Hispanic World II</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>Same as 36:57 Taught in English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:58 Readings in Spanish</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:103 Contemporary Spanish American</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Fiction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:104 Spanish American Poetry</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:105 Spanish American Drama</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:107 Spanish American Literature</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>of Fantasy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:112 Contemporary Latin American</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Novel and Short Story</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:118 Spanish American</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Civilization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Latin American Studies Related Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 112:113 Africans in the New</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>World</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113:116 Urban Anthropology</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:147 Comparing Cultures</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:151 Sociology of the Third</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>World</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Same as 24:151)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113:159 Primitive Art</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:162 Social Anthropology of</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Passivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113:164 Comparative Psychiatry</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:181 Race, Ethnicity, and</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>International Relations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Same as 40:151)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Art and Art History**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS1 Introduction to African, Oceanic, and Pre-Columbian Art</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>1H:106 Art of Pre-Columbian</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>America</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Economics**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6E:125 International Economics</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>6E:126 Natural Resources in the World</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Economy: Control and Conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6E:129 Economic Development: Underdeveloped Areas</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

**Geography**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:05 World Cities</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>44:162 The Third World</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

**Political Science**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>30:60 Introduction to World</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>Politics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:106 Black Literature of Portuguese</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Same as 46:106 and 100:103)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:116 Modern Spanish</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>(Taught in Spanish)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sociology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>24:165 Economic and Political</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Development: Women's Roles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Spanish**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>36:114 Spanish Civilization</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:126 Introduction to</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Bilingualism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Same as 103:126)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:127 Chicano Literature</td>
<td>3-3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:145 Chicano Language and Culture</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>for Teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Taught in English and Spanish)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:160 Twentieth-Century Spanish</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Women Writers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Letters**

- **Committee chair:** Alan F. Nagy
- **Faculty members:** J. Dudley Andrew
- (Communication and Theatre Arts/Comparative Literature), Solana Belgacem
- (English/Comparative Literature), Ann F. Haage (English/Comparative Literature), Nancy H. Lynn (Latin American Languages and Literatures)
- associate professor of Hispanic and Latin American Studies
- (English/Comparative Literature), Berglas E. (English/Comparative Literature)
- (Hispanic and Latin American Studies), Harry K. Atay (Genealogical Literature), Poulton B. (English/Comparative Literature), Panella J. (English/Comparative Literature), MacLean R. (English/Literature), Ortań J. (English/Literature), Moore R. (English/Literature)
- (English/Literature), Roderick J. (English/Comparative Literature), Panella J. (English/Literature)
- (English/Literature), Panella J. (English/Literature), Ortań J. (English/Literature)
- (English/Literature), Moore R. (English/Literature), Roderick J. (English/Comparative Literature)
- Degree offered: B.A.

**Encompassing the entire field of literature, the baccalaureate Program in Letters provides an alternative to programs in a specific national language and literature. The student in Letters typically takes major courses in at least three general departments.**

**Courses**

- **International or Comparative Themes and Problems**
  - 24:165 Spain and Language in the Hispanic World (3 s.h.)
  - Introduction to the variables of time, language, and culture
  - 36:106 Black Literature of Portuguese Expression (3 s.h.)
  - 36:116 Modern Spanish (3 s.h.)
  - 36:145 Chicano Language and Culture for Teachers (3 s.h.)
  - 36:160 Twentieth-Century Spanish Women Writers (3 s.h.)

**Political Science**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>30:60 Introduction to World</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>Politics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:106 Black Literature of Portuguese</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Same as 46:106 and 100:103)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:116 Modern Spanish</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>(Taught in Spanish)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sociology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>24:165 Economic and Political Development: Women's Roles</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

**Spanish**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>36:114 Spanish Civilization</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:126 Introduction to Bilingualism</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>(Same as 103:126)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:127 Chicano Literature</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:145 Chicano Language and Culture for Teachers</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>(Taught in English and Spanish)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36:160 Twentieth-Century Spanish Women Writers</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

**Letters**

- **Committee chair:** Alan F. Nagy
- **Faculty members:** J. Dudley Andrew
- (Communication and Theatre Arts/Comparative Literature), Solana Belgacem
- (English/Comparative Literature), Ann F. Haage (English/Comparative Literature), Nancy H. Lynn (Latin American Languages and Literatures)
- associate professor of Hispanic and Latin American Studies
- (English/Comparative Literature), Berglas E. (English/Comparative Literature)
- (Hispanic and Latin American Studies), Harry K. Atay (Genealogical Literature), Poulton B. (English/Comparative Literature), Panella J. (English/Comparative Literature), MacLean R. (English/Literature), Ortań J. (English/Literature), Moore R. (English/Literature)
- (English/Literature), Roderick J. (English/Comparative Literature), Panella J. (English/Literature)
- (English/Literature), Panella J. (English/Literature), Ortań J. (English/Literature)
- (English/Literature), Moore R. (English/Literature), Roderick J. (English/Comparative Literature)
- Degree offered: B.A.

**Encompassing the entire field of literature, the baccalaureate Program in Letters provides an alternative to programs in a specific national language and literature. The student in Letters typically takes major courses in at least three general departments.**

**Courses**

- **International or Comparative Themes and Problems**
  - 24:165 Spain and Language in the Hispanic World (3 s.h.)
  - Introduction to the variables of time, language, and culture
  - 36:106 Black Literature of Portuguese Expression (3 s.h.)
  - 36:116 Modern Spanish (3 s.h.)
  - 36:145 Chicano Language and Culture for Teachers (3 s.h.)
  - 36:160 Twentieth-Century Spanish Women Writers (3 s.h.)
To help students develop a philosophy of librarianship, which includes a commitment to the cause of intellectual freedom and to the ideal of free dissemination of information; a professional attitude toward the librarian's role as facilitator between user and material; and a determination to improve the quality of library service in response to the needs of all segments of society.

To provide students with a foundation in the techniques and procedures of effective information service (that is, the selection, acquisition, organization, storage, retrieval, and dissemination of information).

To familiarize students with bibliographic techniques and sources of information in a broad range of subject fields and media formats.

To introduce students to management theory as it applies to library administration and to prepare the student to assume professional responsibilities of identifying needs, setting goals, analyzing problems, formulating programs and evaluating results.

To provide students with opportunities for clinical library experience under supervised direction and the pursuit of related courses of study to meet special career needs.

To increase awareness of the contributions of other disciplines to librarianship, a critical understanding of the role of a librarian in the advancement of the profession, and the importance of continuing professional growth.

Public Service Objectives

To offer library personnel and library trustees opportunities for continuing education to advance and update their awareness of current developments in library operations and services.

To provide consulting services to individuals, libraries, and organizations in order to promote better library service for the citizens of towns and surrounding areas.

To participate in professional organizations at local, state, regional, and national levels in the pursuit of common goals within the profession.

Research Objectives

To engage in research on library problems and areas related to library service which advance both the theoretical and practical knowledge of librarianship.

To give emphasis to research which directly supports the instructional program of the School of Library Science in which it may have special relevance to library service in the state of Iowa.

Undergraduate Study

Although there is no undergraduate major in library science, junior and seniors may enroll in the introductory library science and children's literature courses (100-level).

Master of Arts

Professional preparation for careers in all types of libraries is provided by the school's Master of Arts program, accredited by the American Library Association.

The school also offers a nondegree graduate program for certification in school librarianship.

The Master of Arts degree in library science requires 33 semester hours of graduate credit with a minimum grade point average of 2.5. In addition, the student must pass a comprehensive examination.

The program consists of a small core of required courses basic to all areas of librarianship, additional required courses in a type of library not in bibliography, and electives. The plan of study should be related to developing special competencies in a particular field of librarianship.

Basic Plan of Study

Core courses (required of all M.A. candidates) 12 s.h.

21:151 Reference \ 21:162 Cataloging and Classification
21:163 Selection of Library Materials \ 21:301 Management of Libraries and Information Centers

Type-of-library course (one required) 3 s.h.

21:231 The Public Library \ 21:232 The College and University Library \ 21:233 School Media Center Administration

Bibliography course (one required) 3 s.h.

21:241 Bibliography of the Humanities \ 21:242 Bibliography of the Social Sciences

21:243 Bibliography of the Sciences (Electives 16 s.h.

Students are expected to take their elective hours in library science courses. However, when a student has had extensive undergraduate coursework in library science, when career objectives so indicate, and with the advisor's consent, the student may take elective hours in other University departments, especially in closely required areas such as computer science, educational media, urban and regional planning, municipal government, etc.

With the director's approval, a student with a strong background in library science may elect to write a thesis, for which 6 semester hours of credit may be earned. However, most students are advised to undertake the nonthesis program.

The program requirement requires two semesters and one summer of resident study, or, in the case of students attending numerously only, a minimum of four summer sessions.

Public Library Work

A major concern of public librarians is to design innovative service programs to reach those segments of the population now served, as well as to provide a full range of services to all members of
the community. Management skills are often needed in these positions.

Required Courses
Core courses
Bibliography course
21:331 The Public Library

Suggested Electives
21:213 Library Services to Adults
21:222 Multi-Media Concepts in Libraries
21:246 Introduction to Information Science
21:249 Research Methods
21:251 Advanced Reference
21:252 Advanced Cataloging
21:282 Practicum in Libraries
Additional bibliography courses
Courses relating to service to children and young adults:
21:121 Children's Literature
21:124 History of Children's Books
21:126 Literature and Storytelling for Children
21:180 Literature for Adolescents
21:334 Library Services to Children and Young Adults.

School Library Work
The school media center makes a wide range of print and audiovisual materials available to students and teachers. The work of the media specialist includes such activities as providing instruction to students in the use of media, consulting with teachers about the use of media in the teaching program, producing new materials, offering reading guidance, and providing reference service.

State certification is required for a career as a librarian in elementary and secondary schools.

Required Courses
Core courses
Bibliography course
21:222 Multi-Media Concepts in Libraries
or Equivalent audiovisual course
21:213 School Media Center Administration

Suggested Electives
21:123 Children's Literature
21:124 History of Children's Books
21:126 Literature and Storytelling for Children
21:183 Language for Adolescents
21:222 Multi-Media Concepts in Libraries
21:234 Library Services to Children and Young Adults
21:246 Research Methods
21:251 Advanced Reference
21:262 School Media Center Problems
21:283 Practicum in Libraries
75:281 Junior High School and Middle School Curriculum Additional courses in educational media

College and University Library Work
The academic library, whether in a community college or a university, provides services to students, faculty, and staff relating to their information, education, and research needs. Management or supervisory responsibilities are often required. Special competencies may be necessary, such as a subject or language specialty or an activity specialty (classification and indexing, information systems, etc.).

Required Courses
Core courses
Bibliography course
21:232 The College and University Library

Suggested Electives
21:246 Introduction to Information Science
21:249 Research Methods
21:251 Advanced Reference
21:252 Advanced Cataloging
21:255 Government Publications
21:284 Medical Librarianship and Bibliography
21:285 Law Librarianship, Bibliography, and Research Techniques
21:382 Practicum in Libraries
Additional bibliography courses

Work in Special Libraries
Special libraries function in such settings as government agencies, industrial firms, hospitals, museums, and publishing companies. In addition to management skills, the special librarian often needs a subject specialty.

Required Courses
Core courses
Bibliography course
Type-of-library course
21:330 Special Libraries

Suggested Electives
21:246 Introduction to Information Science
21:249 Research Methods
21:251 Advanced Reference
21:282 Advanced Cataloging
21:284 Medical Librarianship and Bibliography
21:285 Law Librarianship, Bibliography, and Research Techniques
21:282 Practicum in Libraries

Certification in School Librarianship
Students who desire to become school librarians may fulfill certification requirements within the M.A. program, or they may pursue a nondegree certification program. The certification program, a 30-semester-hour sequence, accepts both undergraduate and graduate coursework, and does not require a foreign language for admission. The required courses and suggested electives are the same as those listed above under "School Library Work," except that a bibliography course is not required.

The student must hold an approved teaching certificate, either in the elementary or in the secondary school level. Completion of the certification program provides authorization to serve as a librarian for kindergarten through grade 12.
Joint Program in Business Administration and Library Science

Today's professional librarian faces ever-increasing demands for knowledge and expertise in the functional areas of administration and management. In addition to understanding the principles of library science, the librarian, whether in an academic or public setting, is discovering the importance of understanding and applying the principles for effective management of complex organizations. In order to offer students an opportunity to gain a solid understanding of the problem-solving techniques of each area, the College of Business Administration and the School of Library Science have developed a joint program which leads to two degrees—the Master of Business Administration (M.B.A.) and the Master of Arts (M.A.) in library science.

To enroll in the joint program the student must apply and be accepted by both Graduate Studies in Business and the School of Library Science. The joint program enables the student to apply 6 semester hours of business electives toward the M.B.A. in library science and 9 hours of library science electives toward the M.A.B.

The student must complete a minimum of 60 hours in order to receive the two degrees. Students not having previous coursework in business administration must be required to complete up to 72 semester hours of coursework in the joint program.

Facilities and Resources

Quarters for the School of Library Science in the south wing of the University's Main Library provide well-planned facilities for the varied instructional and research activities of the school.

A media lab provides equipment and space for slide-tape production, videotape programming, super-8 filming, filmstrip production, dry mounting, 35mm film previewing, and simple film editing.

Computer facilities include an on-line lab with two CRT terminals and one printing terminal, providing access to the University's CYBER system, national bibliographic data bases, and OCLC (a national on-line library network).

A videotape links the school with a state network of academic and public libraries, by which students provide back-up reference service to libraries throughout the state.

A departmental library contains approximately ten thousand volumes and two hundred periodical titles.

All of the resources of the University Libraries are available to students and faculty of the school. The System contains more than two million volumes in the Main Library and 12 departmental branches.

In addition, students have access to a variety of libraries for clinical and laboratory purposes: The State Historical Society Library in Iowa City; the Iowa City and Cedar Rapids public and school libraries; the Coe, Cornell, and Grinnell college libraries; and, by arrangement, the Herbert Hoover Presidential Library in West Branch, Iowa.

Placement

Prospective students are advised that since the job market for entry-level librarians has diminished, graduates with strong personal and academic qualifications, flexibility, and geographic mobility will be most successful in finding positions. The school provides placement assistance to its graduates seeking employment.

Admission

Requirements and Procedures

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 2.5 on a 4.0 scale, and at least 18 semester hours of study in the liberal arts and sciences;
- One year of college credit in a foreign language with a grade of C or better or an equivalent level of achievement;
- A combined verbal/quantitative score of 900 Graduate Record Examination (GRE) Aptitude Test.

Personal qualifications and aptitude for library work are assessed by means of interviews recommended by the personal interview with the director of the school or the director's assistant, and another member of the faculty. In the case of extreme distance, an alternate interview may be provided nearer the applicant's home. The school does not accept every applicant who meets the minimum admission requirements; an admissions committee select each class on a competitive basis. The applicant's professional promises is an important consideration.

Applicants are requested to write to the School of Library 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 needs to allow more time if he or she has not already taken the GRE aptitude test.

Completed applications should be received by the school not later than March 1 for full-semester consideration, October 1 for the spring semester, or February 1 for the summer sessions. Decisions of the admissions committee are announced two to three weeks after each deadline. Late applications will be considered if places are still available.

Financial Assistance

The School of Library Science awards partial-fellowship scholarships, as well as quarter-time graduate assistantships. To be considered for a grant, an applicant must have at least a 3.0 undergraduate grade-point average (GPA) and combined verbal/quantitative scores of 1100 on the Graduate Record Examination (GRE) Aptitude Test. Those who do not meet these requirements when entering the program may apply for financial aid after completing 12 semester hours of graduate work with a
with other languages which may or may not be historically related.

Linguistics 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 linguist's laboratory may be her or his mind and a vehicle and paper. Another may work with acoustical equipment. Others read computers. Some go into seminaries or places to study, describe, and analyze little-known languages which may be in danger of extinction. Some go into their own communities to study the relationship between language variation and socioeconomic structure, or race, or sex. Still others, interested in language change, sound time studying ancient languages.

Linguistics is not limited to scientific research for its own sake. Linguists may teach English as a foreign language. They may help design school programs which are relevant for Chicano, black, and native American. They may help intelligence-test and achievement-test makers avoid discrimination against those who are not middle-class while Americans, or help librarians use computers to manage massive amounts of information. They may work with speech clinicians to retain people with linguistic disabilities.

Undergraduate Program

Because language is a medium of informational, emotional, and aesthetic communication, yet can be analyzed scientifically, a major in linguistics embodies all the virtues of a liberal arts education.

High scores on verbal and quantitative aptitude tests are indicators of success in linguistics. Although few aspects of the field deal with numbers, it is very important to be able to reason logically and explicitly, and to be able to deal with formulas and abstract symbols.

Depending on their vocational goals, prospective linguistics students may consider either pursuing their studies toward the M.A. in linguistics with a professional focus, or through the doctorate, or they should take a second major. Appropriate companion fields include foreign languages, English, anthropology, sociology, speech pathology, psychology, mathematics, computer science, philosophy, and elementary, secondary, and special education.

The Bachelor of Arts degree in linguistics prepares the student to do basic language analysis in syntax-semantics (sentence patterns and their relation to meanings) and phonology (sound patterns). Elective courses in a variety of sub-specialties enable each student to tailor a program to his or her own interests.

The major in linguistics requires 24 semester hours of work in the department. It includes a general introduction and course(s) in syntax, phonetics, phonology, methods of analysis, and language history.

Graduate Programs

Emphasis in all graduate programs is on theory and research. Students interested in sociolinguistics careers may also take advantage of a number of courses in applied linguistics or in other fields, either in connection with doctoral work or as a standard option of the M.A. program.

Master of Arts

All students take a required set of core courses followed by comprehensive examinations in phonology and syntax-semantics.

Students choosing to write a thesis take at least 9 semester hours of electives courses, exclusive of thesis hours, and may receive up to 6 semester hours of thesis credit (for a total of 36 semester hours).

Students choosing to take a degree without thesis must complete a focus area (consisting of 12 hours of coursework) and take at least 3 semester hours of elective courses. The major purpose of the focus area is to qualify the student for immediate career opportunities. The focus may either be designed in advance by the student (subject to departmental approval), or be one of a set of predefined options (for example, teaching English as a foreign language).

All electives must be chosen from an approved list furnished by the department. Students should expect either to take at least 30 hours of coursework and write a thesis, or to take at least 36 hours of coursework. All students must have a minimum of 30 hours of graduate credit to receive the degree, regardless of prior preparation.

Doctor of Philosophy

The aims of the Ph.D. program are to develop graduates highly competent in theoretical linguistics, and to provide graduates with the theoretical skills necessary for understanding and exploring the close relationship between linguistics and related disciplines.

The core requirement for the program includes two upper-level phonology courses (for example, Phonological Theory and Advanced Phonological Theory) and at least two seminars, for a total of 18 semester hours. An approved 18-hour specialty area is also required, and students must achieve proficiency in at least two foreign languages (as specified by departmental regulations).

Comprehensive examinations cover phonological theory, syntactic theory, theory of language change (historical linguistics and acculturation), and the especially area. An oral defense of the dissertation and three years of residency are also required. In addition, all candidates are required to gain supervised experience in teaching and research.

Special Facilities

The Department of Linguistics has an acoustics laboratory, consisting of a sound spectrograph, a studio-type tape recorder, and an audiometric chamber. There is also a remote terminal connected to the University computing center.

The departmental reading room facilities allow a close relationship between faculty and students, considerable influence of students upon departmental affairs, and a high degree of individual instruction. A large part of the student's
education in linguistics is conducted informally through daily conversations among students and faculty members. Students and faculty members also meet in an informal colloquium to discuss research in which students and staff are engaged. The department also has a practicum laboratory (103.107) to provide experience in teaching English as a foreign language.

Financial Aids

Teaching assistantships and research assistantships are available to qualified graduate students. Application should be made by March 1 for the following academic year. Students applying for financial aid and admission concurrently should submit their Graduate Record Examination scores.

Courses

Special English courses for foreign students: 103.100 and 103.184-189.

Primarily for Undergraduates

103.100 English for Foreign Students 3 h. Teaching is applied and written English for non-native speakers of English. Prerequisite: permission of department.

103.111 Language and Society 3 h. An introduction to the social and linguistic behavior of groups. Prerequisite: 103.111.

103.112 Special Project 1 h. Independent research as a linguistic topic, directed by member of staff.

For Undergraduates and Graduates

103.120 Introduction to Linguistics 3 h. An introduction to the study of language. Prerequisite: 103.112. Same as 103.100.

103.138 Teaching English as a Foreign Language 3 h. Prerequisite: 103.112. Same as 103.100.

103.170 Practicum in Teaching English as a Foreign Language 3 h. Designed to provide an intensive introduction to teaching and principles of instruction.

103.190 Psycholinguistics 3 h. An introduction to the study of language from a psychological perspective. Prerequisites: 103.111 and consent of instructor.

103.210 Articulatory and Acoustic Phonetics 3 h. An introduction to the study of speech production and perception. Prerequisite: 103.190.

103.212 Linguistic Field Methods 3 h. An introduction to the study of language in its social and cultural context. Prerequisites: 103.190; 103.112.

103.215 Language Field Processing 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.216 Introduction to Linguistics 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.217 Psycholinguistics 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.220 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.225 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.230 Sociolinguistics 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.240 Psycholinguistics 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.250 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.260 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.270 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.280 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.290 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.300 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.310 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.320 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.330 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.340 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.350 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.360 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.370 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.380 Language and Society 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.

103.390 Language and Education 3 h. An introduction to the study of language in its social and cultural context. Prerequisite: 103.190.
Division of Mathematical Sciences/LIBERAL ARTS

| Degree offered: B.A., B.S., M.S., Ph.D. |

#### Bachelor of Arts

In addition to at least one year of calculus (either 22M:25-26 Calculus I-II or 22M:35-36 Engineering Calculus I-II), the student must take at least seven additional approved courses, each carrying at least 3 semester hours of credit. Except for students electing the applied mathematical sciences option, these seven courses must be from the division, and (except for students seeking a secondary teaching certificate) must include either two of the courses in the first group below, or one of the combinations in the second group.

<table>
<thead>
<tr>
<th>Either two from this group:</th>
</tr>
</thead>
<tbody>
<tr>
<td>22C:116 Operating System Principles 3 s.h.</td>
</tr>
<tr>
<td>22C:122 Advanced Computer Organization and Architecture 3 s.h.</td>
</tr>
<tr>
<td>22C:123 Programming Language Foundations 3 s.h.</td>
</tr>
</tbody>
</table>

| 22C:135 Introduction to Computation Theory 3 s.h. |
| 22C:145 Artificial Intelligence I 3 s.h. |

| 22M:100 Introduction to Ordinary Differential Equations 3 s.h. |
| 22M:101 Introduction to Partial Differential Equations 3 s.h. |

| 22M:119 Complex Variables 3 s.h. |
| 22M:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h. |

| Or one combination from this group: |
| 22M:105-104 Foundations of Mathematics I-II 8 s.h. |
| 22C:110-111 Elementary Topology I-II 8 s.h. |
| 22M:115-116 Introduction to Analysis I-II 8 s.h. |
| 22M:120-121 Abstract Algebra I-II 8 s.h. |
| 22M:130-131 Theoretical Mechanics I-II 8 s.h. |

| Or 22S:165 Introduction to Stochastic Processes 3 s.h. |
| Or 22S:166 Introduction to Mathematical Statistics 3 s.h. |
| 22S:180-181 Actuarial Theory I-II 7 s.h. |

Students should consult the division office concerning courses which may not be applied toward the seven-course requirement. Students who complete the requirements for a secondary teaching certificate may take any two 100-level courses among their seven required courses in mathematics.

#### Bachelor of Science

In addition to the requirements outlined above for the Bachelor of Arts degree, the Bachelor of Science degree requires two one-semester courses from the division, each carrying at least 2 semester hours of credit. The programs described below need not be followed exactly; rather, it is expected that the student and his or her adviser will work out a program reflecting the student's interests. The requirements are flexible enough to accommodate changes in students' interests.

| Suggested Programs | General Program |

Unless a student has a strong interest in a special area in mathematics, a general program is suggested. This type of program should include 22C:7 Introduction to Computability with FORTRAN, preferably along with calculus during the freshman year. The
program should also include a course such as 22M:50 Elements of Group Theory, 22M:55 Fundamental Properties of Spaces and Functions, or 22M:103 Foundations of Mathematics I, and it should include at least a semester's work in statistics and probability. The student should take additional work, in particular the required 100-level courses, in whatever area of mathematical sciences is of most interest to the student. Students contemplating employment in government or industry upon completion of the B.A. degree should consider 22C:17 Programming with PL/1 and courses in numerical analysis, applied statistics, and operations research.

Actuarial Science


Additional courses of direct professional interest to actuaries include 22S:183 Demography and Life Table Construction, 22S:184 Risk Theory, and 22S:185 Theory of Reinsurance. Students are encouraged to take at least one course in computer science and a substantial program of courses from the College of Business Administration. If a student is unable to complete such a program as an undergraduate, he or she may be advised to take a year of graduate work.

Applied Mathematics


Other general courses which may be of interest are 22M:60 Elements of Group Theory, 22M:105 Analysis for Applications, 22M:116 Introduction to Analysis I, 22M:126 Elementary Theory of Numbers, and 22M:150 Metric Theory. Students in applied mathematics should be familiar with computer programming (22C:7 Introduction to Computing with FORTRAN can be taken early along with calculus) and with the basic ideas of probability and statistics (the courses 22S:158 Introduction to Probability and 22S:154 Introduction to Mathematical Statistics I or 22S:120 Probability and Statistics are recommended). To acquire an understanding of how mathematics is used in other areas, it is recommended that the student take a set of courses. Involving mathematics in a significant way, outside the Division of Mathematical Sciences. Students who plan to do graduate work in applied mathematics should take 22M:115 Introduction to Analysis I.

Mathematics Education

Mathematics courses required for students in mathematics education are 22M:26-28 Calculus I-II, 22M:27 Introduction to Linear Algebra, 22M:50 Elements of Group Theory, 22M:55 Fundamental Properties of Spaces and Functions, and 22M:70 Euclidean Plane Geometry. The student may substitute one of these courses in any of the following areas: 22M:103 Introduction to Linear Algebra or 22M:35-37 Engineering Calculus I-II and 22M:38 Differential Equations and Linear Algebra. The courses 22M:100 Introduction to Ordinary Differential Equations, 22M:101 Introduction to Partial Differential Equations, 22M:116 Complex Variables, 22M:130 Optimization Techniques, 22M:170 Numerical Analysis: Nonlinear Equations and Approximation Theory, and 22S:171 Numerical Analysis: Differential Equations and Linear Algebra, are recommended. Additional courses directly concerned with applications of mathematics are 22M:102 Intermediate Differential Equations, 22M:105 Continuum Mathematical Models, 22M:118 Complex Variables, and 22M:151 Discrete Mathematical Models. Other general courses which may be of interest are 22M:60 Elements of Group Theory, 22M:105 Analysis for Applications, 22M:116 Introduction to Analysis I, 22M:126 Elementary Theory of Numbers, and 22M:150 Metric Theory. Students in applied mathematics should be familiar with computer programming (22C:7 Introduction to Computing with FORTRAN can be taken early along with calculus) and with the basic ideas of probability and statistics (the courses 22S:158 Introduction to Probability and 22S:154 Introduction to Mathematical Statistics I or 22S:120 Probability and Statistics are recommended). To acquire an understanding of how mathematics is used in other areas, it is recommended that the student take a set of courses. Involving mathematics in a significant way, outside the Division of Mathematical Sciences. Students who plan to do graduate work in applied mathematics should take 22M:115 Introduction to Analysis I.

Probability and Statistics

The basis for this program in the calculus sequence 22M:25-26 Calculus I-II and 22M:27 Introduction to Linear Algebra, or 22M:35-37 Engineering Calculus I-II, together with one of these three sequences: 22S:153 Introduction to Probability and 22S:154 Introduction to Mathematical Statistics I; 22S:153 Introduction to Probability and 22S:167 Introduction to Stochastic Processes; or 22S:120 Probability and Statistics and 22S:168 Analysis and Design of
Experiments or 22S:182 Regression Analysis.

Students should also select one or two courses in computer science from 22C:7 Introduction to Computing with FORTRAN, 22C:17 Programming with PL/1, or 22C:18 Assembly Language Programming; and one or two courses in mathematical analysis from 22M:55 Fundamental Properties of Spaces and Functions, and 22M:105 Analysis for Applications, and 22M:115 Introduction to Analysis I. Substantial work in one of the biological, social, physical, or engineering sciences is also highly recommended.

Further courses in probability and statistics may be selected from courses in the Department of Statistics numbered 100 and above, excluding 22S:102.


Applied Mathematical Sciences Option

This option is designed to reflect the increasing diversification of applications of mathematics and statistics to the social, biological, and physical sciences, and to management, business, ecology, linguistics, and engineering. The student electing this option must include the following among the seven courses or the five courses in computer science taken beyond the first year of calculus:

Either 22M:27 Introduction to Linear Algebra or 22M:38 Differential Equations and Linear Algebra;
At least three Division of Mathematical Sciences courses numbered 22M:50 or above (excluding 22M:50-81 and including at least one courses numbered 100 or above) or 22S:103 or above; and
At least three additional quantitative courses from one department outside the division, or, at the adviser's discretion, from two closely related departments.

In addition to the above, the Bachelor of Science degree requires two one-semester courses from the division, each carrying at least 2 semester hours of credit.

A student taking this option must include an area of concentration in his or her program, and must acquire some experience in the use of the computer.

Students electing this option are assigned specially-designated program advisers.

Transfer Students

Undergraduate transfer students in mathematics must earn at least 9 semester hours of credit in Division of Mathematical Sciences courses beyond the first year of calculus or 22C:18 Introduction to Programming with PL/1.

Minor

Courses designated as upper-level for the purpose of satisfying minor field requirements in mathematical sciences are 22C:21 Data Structures and above (excluding courses not open to computer science majors for degree credit); 22M:38 Calculus II, 22M:50 Elements of Group Theory and above (excluding 22M:50 Theory of Arithmetic and 22M:81 Geometry for Elementary Teachers); and 22S:103 Introduction to the Design of Sample Surveys and above.

M.B.A. Preparation

An undergraduate student majoring in mathematics and wishing to earn a Master of Business Administration degree in one year of graduate study should consult with his or her adviser and with the associate dean of the College of Business Administration prior to the senior year concerning business courses which should be included in the undergraduate program.

Applied Mathematical Science

Program chair: Kendall E. Atkinson

Faculty: Anil K. Agrawal, Joseph L. Arnold, Edward Haug (Mechanical Engineering), Herbert Hettich (Mathematics), Wilson Vick (Physics), Karl Longnecker (Information Engineering), Paul Wahl (Mathematical Science)

Degree offered: Ph.D.

Applied mathematical scientists formulate scientific concepts and problems in mathematical terms; solve the resultant mathematical problems; discuss, interpret, and evaluate the solutions; explore new ideas for and areas of mathematical application; and develop mathematical theories in areas which have not hitherto been subjected to systematic mathematical treatment.

Career opportunities include faculty positions in colleges and universities, research positions in industrial and governmental laboratories, professional consulting positions, and software computer consulting.

The program in applied mathematical science at The University of Iowa is an autonomous, broadly-based interdisciplinary program leading to the Doctor of Philosophy degree. The program seeks to help the student achieve a basic command of advanced mathematics, at least one science (behavioral, biological, biomedical, engineering, physical, or medical), and the methods of applied mathematics. For his or her thesis research, the student is expected to identify a significant problem within his or her science, develop an appropriate mathematical model for that problem, test the model, and develop improvements if necessary.

Students may enter the program with either a bachelor's or a master's degree. Applicants are expected to have an excellent background in science and mathematics, together with a desire to apply mathematics to the solution of relevant scientific questions.

When a student enters the program, he or she and the program faculty plan a course of study to give the student a basic core of knowledge for work in applied mathematics, and the necessary background knowledge in the area of
Master of Science
A candidate for the M.S. degree in computer science must have completed the following courses or an equivalent proficiency:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>22C:116</td>
<td>Operating System Principles</td>
<td>3 h.</td>
</tr>
<tr>
<td>22C:122</td>
<td>Advanced Computer Organization and Architecture</td>
<td>3 h.</td>
</tr>
<tr>
<td>22C:123</td>
<td>Programming Language Foundations</td>
<td>3 h.</td>
</tr>
<tr>
<td>22C:130</td>
<td>Introduction to Computation Theory</td>
<td>3 h.</td>
</tr>
</tbody>
</table>

A 200-level 22C course and another 22C course selected from 22C:127, 22C:144, 22C:145, 22C:153, 22C:176, or any 200-level course 3 h.

Mathematics and/or statistics courses 6 h.

Additional approved courses 6 h.

Total 30 h.

Recommended mathematics, statistics, and additional courses depend upon the student's career objectives.

The student who intends to pursue applied computer science might profitably elect courses from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>22M:160</td>
<td>Matrix Theory</td>
</tr>
<tr>
<td>22M:162</td>
<td>Theory of Graphs</td>
</tr>
<tr>
<td>22M:170</td>
<td>Numerical Analysis: Nonlinear Equations and Approximation Theory</td>
</tr>
<tr>
<td>22M:171</td>
<td>Numerical Analysis: Differential Equations and Linear Algebra</td>
</tr>
<tr>
<td>22B:149</td>
<td>Introduction to Probability</td>
</tr>
<tr>
<td>22B:164</td>
<td>Introduction to Mathematical Statistics I</td>
</tr>
<tr>
<td>22B:168</td>
<td>Analysis and Design of Experiments</td>
</tr>
</tbody>
</table>

Courses in business administration or industrial engineering.

Any M.S. candidate may elect to write a thesis, and with the advisor's consent may apply 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 examination covering 22C:116 Operating System Principles, 22C:122 Advanced Computer Organization and Architecture, 22C:123 Programming Language Foundations, and 22C:126 Introduction to Computation Theory. The written examination attempts to conform
the interfaces between these four courses as well as the content of the separate courses.

Students should consult the Graduate Handbook for further information.

It is strongly recommended that the applicant for admission to the M.S. program in computer science have a B.A. or B.S. in computer science, mathematics, engineering, or physical science. A student whose undergraduate program does not include equivalents of the courses required in The University of Iowa's computer science undergraduate curriculum is expected to complete these courses prior to admission to graduate courses.

Doctor of Philosophy

Doctoral students are expected to complete 80 to 90 semester hours of graduate work, including a thesis. The student need not have a master's degree when beginning the Ph.D. program, and need not acquire one. Usually, however, the Ph.D. student requires a master's degree either in computer science or in some other mathematical or physical science, during his or her course of study. Every Ph.D. candidate in computer science is expected to be knowledgeable in the following four categories:

- Programming concepts, including programming, program languages, design of algorithms, simulation, artificial intelligence, and numerical analysis;
- Theory of computation, including automata theory, computability and formal languages, and analysis of algorithms;
- Mathematical foundations, including set theory, algebra, analysis, logic, and graph theory; and
- Computer systems, including operating systems, computer architecture, and logical design, and database systems.

Although the plan of study for each student will be drawn up by the student and his or her committee to fit any special needs, every student is expected to complete approximately half of the coursework toward the Ph.D. in the first two categories above.

The student must complete three courses with grades of A or B, at least one of which is at the 200 (advanced) level, in each of two areas.

One area must be selected from:

- Algebra
- Analysis
- Logic and set theory
- Statistics and probability
- Numerical analysis

The second area may be selected from the above, or from:

- Electrical engineering
- Operations research
- Business administration
- Linguistic
- Other related areas as approved by the department

If the student selects statistics and probability as one of the areas, the advanced course may be chosen at the 100 level.

A student is admitted to candidacy for the Ph.D. degree in computer science only after completing the comprehensive examination. In addition, he or she must be recommended by a member of the computer science faculty.

All examinations are described in the Graduate Student's Handbook.

After admission to candidacy, the student will prepare a written research proposal which will be defended in an oral examination administered by the student's committee. The student must demonstrate expertise in the area of the proposed research and must also justify the originality and significance of the proposed contribution. An oral defense of the thesis is required.

The department is highly selective in admitting doctoral students, and normally considers only applicants with a grade-point average above 3.3.

Graduate Service Courses

*Competence and experience in the use of a digital computer in problem solving is useful and often prerequisite to advanced study and research in many disciplines. For most students, the two-semester sequence 200C:108, Introduction to Programming with PL/1 and 200C:107 Programming with PL/1 is recommended. Students in fields in which other programming languages are heavily used may find 200C:100 Introduction to Computing with FORTRAN, 200C:106 Assembly Language Programming, or 200C:109 Programming with COBOL more appropriate. The one-semester PL/1 course 200C:110 Computing with PL/1 is recommended only for students with considerable programming experience using other languages.*

Courses

**Primarily for Undergraduates**

- 200C:200 Computation Education Using Maple 9.5b.
- 200C:201 Survey of Computer Science 3.5b.
- The nature, uses, and limitations of computer and computing as evidenced in a broad sample of applications. Introduction to hardware and software, computer constituting, data representation, maps, and data management, major emphases on programming with FORTRAN.
- 200C:202 Survey of Computer Programming with FORTRAN 3.5b.
- Basic concepts of computer structure and programming techniques, elementary assembly-language programming, algorithms, data representations, maps and data management, major emphases on programming with FORTRAN.
- 200C:205 Programming with COBOL 3.5b.
- Use of the business oriented language COBOL, emphasis on problem solving using FORTRAN; programming techniques for table looking-up, sorting, generation of reports from files, and manipulation of sequential and random-access files. Prerequisite: 200C:202.
- 200C:210 Introduction to Programming with PL/1 4.5b.
- Programming and program design techniques using portions of PL/1: programming language, variables, expressions, structured control constructs, internal subroutine representations and character data: applicability and structures, recursion, procedures.
- 200C:211 Programming with PL/1 4.5b.
- Continuation of 200C:210: list structure, names, scope, memory allocation and design of program structures data structures. Examples: simple, recursive, and cyclic lists; procedure, function, and subprogram; functions, procedures, recursive procedures, programs, and subroutines; implementation and usage of data and use of file, structured testing and debugging; the processing and application of lists. Prerequisite: 200C:210.
- 200C:218 Assembly Language Programming 3.5b.
- Representation of data and computation, CPU organization, addressing, instruction set, and use of basic registers; implementation of program features and structure, indexed, relative, and direct addressing, registers, accumulation, indirect addressing, and computer assembly and disassembly techniques. Program design through operating systems, memory, external addressing, and computer utilities. Prerequisite: 200C:218 or 200C:217.
- 200C:221 Data Structures 3.5b.
- Programming and organization of data and of files and file setting and searching techniques, computer logic models and information, and access and access techniques, searching, sorting, and algorithms; programming for file handling and string processing; numerical method of solving algorithms; programming in the PL1 and extended PL1 languages. Prerequisite: 200C:25.
Mathematics/LIBERAL ARTS

Mathematics

Department chair: Robert H. Oehme


associate professors: David D. Anderson, Alfred J. Baer, George Burke, Jean Failla, Michael A. Gerzygier, Margaret Hintz, John P. Ledbitter, Eugene W. Medlar, George C. Nelson, Dennis M. Rossman, Dean W. Shriver, and Tan Tong

assistant professor: Alan Dinesh, Matilde Mancini

degrees offered: B.A., B.S., M.B., Ph.D.

Undergraduate Programs

See "Division of Mathematical Sciences" in this section of the Catalog.

Graduate Programs

Master of Science

The M.S. programs include one intended primarily for secondary school teachers (I), one intended for students planning to work in industry or government (II), an applied mathematics program (III), and a program designed for students seeking the Ph.D. degree in other disciplines requiring considerable mathematical knowledge (IV). In each, the student must take comprehensive examinations over the material in the required courses. The student may choose other courses from any of the departments in the Division of Mathematical Sciences or from outside the division, with his or her advisor's consent.

Program I

This program is designed for secondary school teachers. Students in this program must take two courses, including either 22M:118 or 22M:211 and either 22M:121 or 22M:206, from each of the following two groups, and must also take two mathematics education courses:

22M:115-116 Introduction to Analysis I-II
211 Analysis I

The program requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in the following:

Any Department of Mathematics course numbered 100 or above, except 22M:105 Application for Analysis

22C:123 Advanced Computer Organization and Architecture
22C:135 Computer Programming Language Foundations
22C:136 Introduction to Computational Theory
22C:146 Artificial Intelligence
Any 200-level course in computer science

22S:153 Introduction to Probability or
22S:154 Introduction to Mathematical Statistics or
22S:167 Introduction to Stochastic Processes or
Any statistics course having any of these three as a prerequisite

Program II

Students in this program must meet the same basic course requirements as for program I, excepting the mathematics education course requirement.

With the permission of the graduate committee, a candidate in this program may substitute an appropriate part of the Ph.D. comprehensive examination for part of the master's examination.

Program III

This program is oriented toward applied mathematicians. Students in this program must take these required courses:

22M:101 Introduction to Partial Differential Equations
22M:102 Intermediate Differential Equations
22M:106 Continuous Mathematical Models
22M:135 Optimization Techniques
22M:170 Numerical Analysis: Linear Equations and Approximation Theory
22M:171 Numerical Analysis: Differntial Equations and Linear Algebra

Two from the following:

22M:118 Complex Variables
22M:150 Matrix Theory
22M:161 Discrete Mathematical Models
22M:163 Theory of Graphs
22C:110 Operating System Principles
22C:153 Design and Analysis of Algorithms
22S:154 Introduction to Mathematical Statistics
22S:155 Introduction to Mathematical Statistics
22S:167 Introduction to Stochastic Processes

The program requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in the Division of Mathematical Sciences. Students who have a course 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 for program II. The student in program IV is considered to have passed the comprehensive examination for the master's degree in mathematics if he or she has maintained a minimum grade-point average of 3.0 in all mathematics courses taken for the master's degree in mathematics and successfully completed the
be in courses numbered 225:103 and above.

Master of Science
Each M.S. candidate will have a committee of three members, which will have the responsibility of recommending action on the candidate’s degree. For nonthesis programs, the committee’s recommendation is usually based upon the two-hour written examinations on topics covered in the required courses. For thesis programs, the committee’s final recommendation is usually based upon an oral defense of the thesis, although it may be based upon a two-hour written examination over the topics covered in the candidate’s program of study.

A student who chooses to earn the M.S. degree with thesis may earn up to six semester hours of credit for thesis preparation. Specific course requirements for the M.S. programs are given below. The minimum grade-point average required for each of these programs is 2.75.

Actuarial Science
(with or without thesis)
225:153 Introduction to Probability
225:154 Introduction to Mathematical Statistics I
225:125 Actuarial Principles of Life
225:180-182 Actuarial Theory I–II
225:177 Numerical Analysis for Actuaries
225:297 Seminar: Actuarial Theory
At least three courses from:
225:183 Demography and Life Table Construction
225:194 Risk Theory
225:186 Theory of Pension Funding
506:141 Operations Research II

Students must take at least one course from outside the Division of Mathematical Sciences, preferably from the College of Business Administration. The 225:153-154 requirement will be waived only if the student has passed Part Two of the Examinations of Society of Actuaries.

Theoretical Statistics and Probability
(with or without thesis)
225:116 Introduction to Analysis I
225:153 Introduction to Probability
225:154-155 Introduction to Mathematical Statistics I–II
225:167 Introduction to Stochastic Processes
At least two of these:
225:172 Topics in Statistics
225:230 Introduction to the Theory of Nonparametric Statistics
254:101 Theory of Statistics I–II
225:235 Linear Models
225:256 Multivariate Analysis
225:264-265 Theory of Probability I–II

Applied Statistics
(without thesis)
225:153 Introduction to Probability
225:154 Introduction to Mathematical Statistics I
225:166 Analysis and Design of Experiments
225:173 Statistical Computation and Consulting
At least two of the following:
225:156 Applied Time Series Analysis
225:161 Application of Multivariate Statistical Techniques
225:162 Regression Analysis
225:166 Analysis and Design of Experiments

Students interested in operations research could choose electives from among:
225:165 Introduction to Mathematical Statistics II
225:160 Applied Statistical Decision Theory
506:141 Operations Research II
506:143 Production-Inventory Models
506:143 Quantitative Investment Analysis
506:149 Digital Systems Simulation I
506:249 Digital Systems Simulation II
506:242-243 Mathematical Programming I–II
506:245 Stochastic Service Systems
506:249 Integer Programming and Network Flows

Programs oriented towards other applied areas are also possible. For a general program in applied mathematics (without area of application), most electives would be chosen in the Department of Statistics. The student should work closely with his or her adviser in developing a program of study tailored to the student’s specific interests. If the student’s interest is a particular applications area is strong, a program in another department may be
Ordinarily involving 3 semester hours of 225:191 Individual Study for two semesters, the typical thesis would be a statistical presentation of the results of a meaningful research project in another field, or a study of the characteristics of a new statistical method.

Doctor of Philosophy
To satisfy the course requirements for a Ph.D. in statistics, a student must successfully complete:

- 225:153 Introduction to Probability
- 225:154-155 Introduction to Mathematical Statistics I-II
- 225:156 Analysis and Design of Experiments

At least two of these:

- 225:156 Applied Time Series Analysis
- 225:168 Analysis and Design of Experiments

At least two of these:

- 225:103 Introduction to the Design of Sample Surveys
- 225:133 Quality Control, Reliability, and Engineering Statistics
- 225:158 Bayesian Statistics I
- 225:165 Introduction to Mathematical Statistics II
- 225:172 Applied Time Series Analysis
- 225:186 Analysis and Design of Experiments

- 225:180 Applied Statistical Decision Theory

- 225:215 Application of Multivariate Statistical Techniques

- 225:173 Statistical Computation and Consulting

- 225:230 Introduction to the Theory of Nonparametric Statistics

- 225:234 Bayesian Statistics II

- 225:235 Linear Models

- 225:298 Multivariate Analysis

- 225:170 Numerical Analysis: Nonlinear Equations and Approximation Theory

The remainder of the program will consist of selections from the above courses or, with the adviser's approval, courses in other fields related to the thesis.

Experiences in a computer language (such as FORTRAN, BASIC, or similar) is required. If the student satisfies the requirement by taking a course, that course may be counted toward the M.S. semester hour requirement.

During the graduate program, students may wish to take coursework or seminars in other departments for the achievement of certain auxiliary goals of the doctoral degree in statistics—to relate his or her area of specialization to other fields of knowledge, to acquire the ability to use electronic digital computing equipment, or to learn the language skills needed to read foreign scientific journals and be able to respond in personal contacts with foreign statisticians.

Each student is required to include in his or her program a component which involves experience in either teaching or statistical consulting.

Students are required to request financial assistance for the third year must have taken the qualifying examination no later than the spring semester of the second year.

The qualifying examination covers topics such as those studied in 225:153 Introduction to Probability, 225:154-155 Introduction to Mathematical Statistics I-II, and 225:156 Analysis and Design of Experiments. The examination may be used in lieu of the master's written examination. Students who are unsuccessful in their first attempt may repeat the qualifying examination one time.

The student requests a comprehensive examination after completing most of the coursework in his or her approved plan of study, typically near the end of the third year.

Students must achieve at least a 3.26 grade-point average on the comprehensive in the plan of study. A program which does not conform to the prescribed requirements, but which is of high excellence, may be approved by the department chair.

Special Features
Because statisticians are often teamed with other scientists in research projects, it is important that students gain experience in group efforts. In several courses, the department tries to provide this experience. In addition, the department houses the Statistical Consulting Center, which provides assistance to members of the University...
Primarily for Graduates

225:335 Analysis of Categorical Data 3 s.h.
Study of the logistic regression model for the analysis of categorical data, hypothesis testing for linear and nonlinear models, maximum likelihood estimation (log-linear models), goodness of fit model checking for logistic and linear categorical data models. Prerequisites: 225:154 and 225:190. Offered fall semester. Same as BI 652. Prerequisite: BI 325.

225:320 Introduction to the Theory of Markovian Models 3 s.h.
Techniques for the analysis of time-dependent data, Markov processes, properties, stationary distribution, maximum likelihood estimation (Markov chain models), goodness of fit model checking for Markov chain models. Prerequisites: 225:154 and 225:190. Offered spring semester. Same as BI 652. Prerequisite: BI 325.

225:220 Review Statistics I 3 s.h.
Prerequisites: 225:104. Same as PS 245.

225:253 Theory of Balsodes 3 s.h.
Lifting distribution theory, sufficiency, introduction to decision theory and Bayes' inference. Prerequisites: 225:104 and 225:115.

225:254 Theory of Statistics 3 s.h.
Theories of estimation and tests of hypotheses, basic concepts, applications to statistics. Prerequisites: 225:220.

225:251 Linear Models 4 s.h.
Linear algebra and matrices, multivariate normal distribution, statistical inference for the multivariate normal distribution, analysis of variance for one and normal rank linear models, optimality of linear estimators for complete random models, normal and Gauss models. Prerequisites: 225:154 and 225:156.

225:250 Mathematical Statistics I 4 s.h.
Statistics estimation, random variables, normal distribution, hypothesis testing, multivariate normal model, growth curve models, discriminant analysis, canonical correlation. Prerequisites: 225:220.

225:244 Theory of Probability I 3 s.h.
Probability spaces and random variables, basic integration theory, distribution functions, convergence in probability, convergence in distribution, laws of large numbers, central limit theorem. Prerequisites: 225:104, Same as 226:362.

225:285 Theory of Probability II 3 s.h.
A sequel to 225:244. Closely related distributions, i.i.d. spaces, Slutsky processes, Martingales. Prerequisite: 225:244.

225:115 Topics in Probability and Statistics 3 s.h.
Selected topics in theory or properties of particular interest to students. Prerequisites: consent of instructor.

225:231 Seminar: Mathematical Statistics 3 s.h.
Prerequisite: consent of instructor.

225:233 Seminar: Probability 3 s.h.
Prerequisite: consent of instructor.

225:250 Seminar: Applied Statistics 3 s.h.
Prerequisite: consent of instructor.

225:237 Seminar: Actuarial Science 3 s.h.
Prerequisite: consent of instructor.

225:239 Seminar: Social Statistics 3 s.h.
Prerequisite: consent of instructor.

225:390 Seminar: Biostatistics 3 s.h.
Prerequisite: consent of instructor.

225:360 Reading Research 3 s.h.
Prerequisite: consent of advisor.

Medical Technology

See "Division of Associated Medical Sciences" in the "College of Medicine" section of the Catalog.

Microbiology

Department chair: living. P. Cawley A.B., M.S., Ph.D.

Microbiology is concerned with the identification, structure, and activities of bacteria, fungi, protozoa, algae, and viruses. It also includes immunology, a discipline dealing with the responses of humans and animals to foreign materials.

Microbiology involves the study of the distribution of microorganisms in the environment, their relationships to other living things, their beneficial and harmful affects on humans, animals, and plants, and the physical and chemical changes they produce in the environment.

All branches of the science—general microbiology, food and dairy microbiology, ecol microbiology, plant microbiology, water and sewage microbiology, medical and veterinary microbiology, dental microbiology, immunology, pharmacological microbiology, marine microbiology, geobiology—have expanded rapidly in recent years and other rewarding career opportunities to qualified persons.

For the graduate with a bachelor's degree in microbiology, research positions are available in government, hospital and public health and industrial control laboratories. Students who continue beyond the bachelor's degree have career opportunities in these same areas, plus college and university teaching, with greater responsibilities and commensurately higher salaries.

Bachelor of Science

The objectives of the undergraduate program in microbiology are to prepare students for careers in science, especially in their chosen major, and to provide them with a broad background in other subjects so they may relate microbiology to other fields of human endeavor.

An undergraduate student majoring in microbiology at The University of Iowa must meet general College of Liberal Arts requirements. The student must complete a minimum of 14 semester hours in microbiology to obtain a B.S. degree; no more than 2 semester hours of special problems (001:161) Problems in Microbiology) may count toward this requirement. Students desiring to apply for certification by the National Registry of Microbiologists are required to earn 30 semester hours of credit in biology, 20 semester hours of which must be in microbiology. Certification is required for employment as a diagnostic microbiologist in some areas. Except under unusual circumstances and with the consent of the advisor, mathematics and sciences courses required by the department for the B.S. degree should be taken for letter grades.

The following is a typical B.S. program. These courses are required:

1. Principles of Chemistry I 3 s.h.
2. Principles of Chemistry II 3 s.h.
3. 16 Elementary Chemistry Laboratory I 1 s.h.
4. 101 Elementary Quantitative Analysis 4 s.h.
5. 121 Organic Chemistry I 3 s.h.
6. 122 Organic Chemistry II 3 s.h.
7. 141 Intermediate Chemistry Laboratory I 2 s.h.
8. 226:10 Mathematics for the Biological Sciences 4 s.h.
9. 226:20 Elementary Functions 3 s.h.
The ROTC Advanced Course for junior and senior students addresses the dynamics of organizational leadership from the small group level to large and diversified organizations. Military history is highlighted in tracing the development of military principles and doctrine utilized in modern military operations and organizations. Practical instruction in developing individual leadership skills is emphasized. Between the junior and senior years, students attend a 14-week, paid, advanced training camp at Fort Lewis, Washington. Selected students may also 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 serve either in active duty or with the National Guard or U.S. Army Reserve near Fort Huachuca. Those choosing active duty serve a minimum of three years.

Students who have not taken the basic course may qualify for the advanced course by attending a basic camp during summer, all expenses paid, or by participating in an on-campus summer program. In addition, students may qualify for the advanced course by taking a compression course approved by the Department during the spring semester.

Credit For Prior Training

Students with prior military training or experience may qualify for basic course credit and be allowed entrance into the Advanced Course. Prior service personnel are given advanced placement within the ROTC program and are eligible for a commission within two years. Although the full Army ROTC program normally spans four years, it can be completed in two, three, or three and one-half years, with departmental approval.

Graduate School

Students commissioned as lieutenants upon graduation from The University of Iowa may apply for a delay of entry on active duty to attend graduate school. No additional time is required on active duty for such delays. Delays of two to three years to attend medical, dental, and law schools are normally accepted.

Special Programs

The Pershing Rifles and Blue Berets are fraternal organizations engaging in intercollegiate military skills competition and service activities. The Cordillera is an auxiliary to Pershing Rifles and members participate with cadets in many activities. The department also sponsors a small-bore rifle team that takes part in national competition. Cadets compete for individual and national honors for leadership, academic achievement, athletics, and military proficiency. The department sponsors military-oriented ceremonial and social activities throughout the year, including the annual Military Ball and an awards ceremony.

Special Facilities

The department uses several areas near Iowa City for practical field problems and military skills instruction. It uses a variety of military equipment, such as helicopters and tanks, in practical leadership exercises and in support of Pershing Rifles. Cadets visit Rock Island Arsenal, Rock Island Corps of Engineers District, and Camp Dodge, near Des Moines, to observe army operations and review equipment. Junior-year cadets also use the Camp Dodge leadership reaction course, orienteering course, and rappelling facilities.

Financial Aid

Reserve Officers Training Corps scholarships providing tuition, books, laboratory fees, and a $100-per-month, tax-free subsistence allowance, are available to high school seniors and students enrolled in military science courses. Scholarships cover a minimum service obligation of four years. All cadets in the advanced course receive a $100-per-month, tax-free subsistence allowance. Cadets attending summer camps are paid while there and receive travel allowances.
Courses

311: Introduction to the Military

An analysis of the role of the military in American society and its impact on the development of military strategy. This course is designed for students who have completed the course, and it is not offered in the fall semester.

313: Military Strategy and Tactics

A survey of military strategy and tactics, with a focus on the development of military strategy and tactics throughout history. This course is offered in the fall semester.

314: Military History

A survey of military history, with a focus on the role of the military in shaping the course of history. This course is offered in the fall semester.

315: Military and Society

An analysis of the role of the military in society, with a focus on the impact of military service on society. This course is offered in the fall semester.

316: Military and the Economy

An analysis of the role of the military in the economy, with a focus on the impact of military spending on the economy. This course is offered in the fall semester.

317: Military and the Environment

An analysis of the role of the military in the environment, with a focus on the impact of military activities on the environment. This course is offered in the fall semester.

318: Military and the Law

An analysis of the role of the military in the law, with a focus on the impact of military service on the law. This course is offered in the fall semester.

319: Military and the Media

An analysis of the role of the military in the media, with a focus on the impact of military service on the media. This course is offered in the fall semester.

320: Museum Research and Practice

321: Museum Education and Interpretation

322: Museum Administration

323: Museum Marketing

324: Museum Finance

325: Museum Law

326: Museum Ethics

327: Museum Planning

328: Museum Leadership

329: Museum Volunteer Management

330: Museum Fundraising

331: Museum Development

332: Museum Exhibits

333: Museum Facilities

334: Museum Collections

335: Museum Marketing and Public Relations

336: Museum Education and Interpretation

337: Museum Administration

338: Museum Finance

339: Museum Law

340: Museum Ethics

341: Museum Planning

342: Museum Leadership

343: Museum Volunteer Management

344: Museum Fundraising

345: Museum Development

346: Museum Exhibits

347: Museum Facilities

348: Museum Collections

Museum Training

The department offers courses which provide a foundational background in the historical development of science museums, exhibit theory and design, exhibit planning and design, and general museum operational procedures. Courses have been offered continuously since 1970; the museum instructional program at The University of Iowa is the oldest of more than 75 university- and college-based curricula in the United States. The museum is expanding, and graduates of the University occupy positions of responsibility as directors, curators, and exhibit specialists in museums throughout the United States and Canada.

A major in one of the natural sciences (biology, geology, or pathology) or anthropology, or general science is recommended for students preparing for museum careers. Courses are offered during the annual eight-week summer session as well as during the regular academic year. These elective courses count as credit toward the B.A. or B.S. degree.

For graduate work, museum courses may be credited as a field minor on concentrations in anthropology or science education, or a Ph.D. degree in science education. Required program details should be directed to the appropriate department.

Courses presented in the institution are of value not only to those intending to pursue careers in science museums, but also as supplemental instruction to students in the arts and humanities with specialized interests. Advanced museum students are offered the opportunity to gain practical work experience by participating directly in the University of Iowa Museum of Natural History exhibit program and through formal internships with other museums.

Courses

All registration by consent of instructor.

120: Museum Techniques

121: Museum Techniques I

122: Museum Techniques II

123: Museum Techniques III

124: Museum Techniques IV

125: Museum Techniques V

126: Museum Techniques VI

127: Museum Techniques VII

128: Museum Techniques VIII

129: Museum Techniques IX

130: Museum Techniques X

131: Museum Techniques XI

132: Museum Techniques XII

133: Museum Techniques XIII

134: Museum Techniques XIV

135: Museum Techniques XV

136: Museum Techniques XVI

137: Museum Techniques XVII

138: Museum Techniques XVIII

139: Museum Techniques XIX

140: Museum Techniques XX

141: Museum Techniques XXI

142: Museum Techniques XXII

143: Museum Techniques XXIII

144: Museum Techniques XXIV

145: Museum Techniques XXV

146: Museum Techniques XXVI

147: Museum Techniques XXVII

148: Museum Techniques XXVIII

149: Museum Techniques XXIX

150: Museum Techniques XXX

151: Museum Techniques XXXI

152: Museum Techniques XXXII

153: Museum Techniques XXXIII

154: Museum Techniques XXXIV

155: Museum Techniques XXXV

156: Museum Techniques XXXVI

157: Museum Techniques XXXVII

158: Museum Techniques XXXVIII

159: Museum Techniques XXXIX

160: Museum Techniques XL
Undergraduate Programs

The School offers the Bachelor of Arts and the Bachelor of Music. Curricula are the same for both, except that candidates for the B.M. degree may, and candidates for the B.A. may not, count more than 50 semester hours of coursework in music toward the 124 semester hours required for graduation; and the foreign language requirement for the B.M. is one year of college-level study, while the requirement for the B.A. is two years. Areas of concentration offered in both programs are performance, music education, music therapy, and composition/production.

General Requirements

All undergraduate programs require School of Music approval. Entering undergraduate students planning to major in music are expected to audition either in person or by taped recording in advance of registration. All transfer students must also take the advisory examination in music theory (see "Graduate Programs" below). Studying with deficiencies in theory must register for 25:11 Review Theory.

All baccalaureate candidates in music must satisfy all College of Liberal Arts general requirements, except the Historical-cultural core requirement (see the "College of Liberal Arts" section of the Catalog for those requirements), and the following course requirements of the School of Music:

25:1-4 Literature and Theory I-II 6 s.h.
25:2-4 Aural Skills I-II 2 s.h.
25:5 Literature and Theory III-IV 6 s.h.
25:7-8 Aural Skills V-VI 2 s.h.
25:21-30 History of Music I-V 6 s.h.
25:71-72 Group Instruction in Piano I-II 2 s.h.

adequate proficiency

25:85 Recital Attendance 0 s.h. (required of wind, percussion, string, and voice majors for seven semesters)
25:144 Senior Recital 0 s.h.

Four semester hours of electives from the following:

25:15 undergraduate Composition 2 s.h.
25:117 Arranging for Band 2 s.h.
25:101 Jazz improvisation I 2 s.h.
25:102 Jazz improvisation II 2 s.h.
25:157 Orchestra 2 s.h.
25:145 Orchestral Forms 3 s.h.
25:147 Tonal Forms 3 s.h.
25:146 Analysis of Music Literature 3 s.h.
1900-1720 3 s.h.
25:149 Analysis of Music Literature, 1720-1820 3 s.h.
25:100 Analysis of Music Literature, 1800-1900 3 s.h.
25:151 Analysis of Music Literature, 1900-present 3 s.h.
25:192 Analysis of Music Literature, Special Topics 3 s.h.
25:153 Keyboard Harmony 2 s.h.
25:212 Gregorian Chant 3 s.h.
25:215 Paganini 3 s.h.
Four years of applied music 3 s.h.
Four years of participation in band, orchestra, or chorus.

Ensemble assignments are made at the discretion of the adviser and the ensemble conductors. Keyboard majors may substitute accompanying in place of large ensemble participation for two semesters during their junior and/or senior years, with the consent of their advisers. Any requests for adjustment of the rules pertaining to performance in large ensembles must be submitted to a reviewing committee. The student may take advanced electives in performance (including chamber music and piano accompanying), theory, composition, music education, music history and literature, orchestra, and conducting.
Vocal and Keyboard Majors

7S:147 Choral Methods and Conducting 
7S:148 Choral Literature and Conducting 
26:116-118 Diction for Singers 
7E:145 Methods and Materials: Elementary School General Music 
7S:142 Methods and Materials: Secondary School General Music 
7:191 Observation and Laboratory Practice in the Secondary School 
7E:192 Laboratory Practice in the Elementary School 
7S:187 Seminar: Curriculum and Student Teaching

Brain, Woodwind, or Percussion Majors

All brass, woodwind, and percussion majors in the music education program must participate in concert band eight semesters, and in marching band for two semesters during the first two years in residence at the University, in the marching band program, students are assigned by the director of bands to either Section I—Football Marching Band, or Section II—Marching Band Techniques. Courses required:

7S:143 Instrumental Techniques 6 s.h.
26:102-108 Instrumental Conducting 
7S:143 Percussion Band Instrument Care and Repair 3 s.h.
7S:142 Band Methods and Materials: Elementary School Instrumental Music 3 s.h.
7S:187 Observation and Laboratory Practice in the Secondary School 6 s.h.
7E:182 Laboratory Practice in the Elementary School 6 s.h.
7S:187 Seminar: Curriculum and Student Teaching 1 s.h.

Music Therapy

Admission to the program in music therapy is based on demonstrated minimum keyboard skills and successful completion of 26:114 Orientation to Music Therapy. The number of students admitted to the program is limited by the types and amounts of clinical experience available on campus. In addition to the specific courses in music therapy listed below, specific courses are required in biology, sociology, abnormal psychology, and social psychology.

A six-month internship in an approved off-campus clinical facility is required before the completion of the degree and certification as a registered music therapist (RMT). For more job opportunities, students also are strongly encouraged to complete the music teacher certification requirements. Complete information on the program is available in the music education office. Course requirements for the major in Music Therapy include:

20 98 Recreational Music Techniques 2 s.h.
26:114 Orientation to Music Therapy 2 s.h.
7S:144 Psychology of Music I 2 s.h.
7S:194 Laboratory: Psychology of Music 2 s.h.
26:136 Music Therapy Techniques: Atypical Children 3 s.h.
26:136 Music Therapy Techniques: Adult Clients 3 s.h.
25:140 Internship in Music Therapy 2 s.h.

Composition/Theory Major

Students are not admitted to this program earlier than the sophomore year. Upon application for admission to the program, the candidate shall be assigned a committee of three faculty members, in consultation with whom a course of study leading to the degree shall be determined. Admission is based on performance and potential for success in the major.
on an evaluation of original compositions submitted to an admission and advisory committee, achievement in theory and composition courses, and keyboard competence, tested by an examination including sight reading (Bach chorales) and performance ( Bach inventions or work of comparative difficulty). Course requirements for the major in composition/theory are:

25:1-2 Literature and Theory I-II 6 s.h.
25:3-4 Aural Skills I-II 2 s.h.
25:5-6 Literature and Theory III-IV 6 s.h.
25:7-8 Aural Skills V-VI 2 s.h.
25:91-92 History of Music I-II 6 s.h.

The thesis replaces the senior recital required of applied music majors, and consists of one or more original compositions, approved by the student’s advisory committee and performed in a regularly scheduled School of Music recital and/or a committee-approved scholarly paper dealing with theoretical issues.

Until admitted to the composition/theory program, the student must take private lessons on his or her major instrument or in voice. Following admission, the student undertakes applied music study as recommended by the advisory committee.

The composition/theory candidate participates in an approved ensemble for four years.

Honors

A student with junior or senior standing may undertake honors work in music with the approval of the director of the College of Liberal Arts honors program, and provided a School of Music faculty member sponsors the student in honors status and the student has maintained a minimum grade-point average of 3.0 on all previous work undertaken at the University. A student maintaining the minimum 3.0 average qualifies for graduation “with honors” by completing satisfactorily from 6 to 8 semester hours in 25:90. Honors in Music. Types of honors projects for which credit is given in 25:90 are honors performances, solo and/or ensemble, honors compositions, orchestrations, arrangements, and
honors essays, research papers, editorials, translations, etc.

A combination of at least two of these types of projects is required. None of the projects may duplicate projects assigned in other courses or required for graduation, such as 25:144 Senior Recital.

Honors students in music are encouraged to take graduate-level courses. Advanced coursework in music history, music theory, and languages in particularly recommended. An honors committee of at least three members is appointed by the honors sponsor to evaluate the student’s work.

Financial Aid

A number of music activity scholarships are available to qualified undergraduate music majors. For information, write to the School of Music.

Graduate Programs

The entering graduate student must take the School of Music advisory examination in music theory (harmony, ear training, forms, and counterpoint), and history and literature, before his or her first registration. The advisory examination is given each session on the two days (excluding Sundays) before registration. A worksheet describing the general content of these tests may be obtained from the director’s office, School of Music. (See general graduate admission, degree, and examination requirements, see the "Graduate College" section of the Catalog.)

Master of Arts

The Master of Arts with thesis is offered in the areas of performance (including conducting), composition, music theory, and music history and literature. The Master of Arts without thesis is offered in the areas of music education and instrumental or vocal pedagogy (including accompanying). Both require a minimum of 30 post-baccalaureate semester hours. Information about specific admission and curricular requirements for each degree is available from the School of Music. All

outlines must include the requirements listed below:

General

25:02 Introduction to Graduate Study in Music

Music Theory

25:145 Conventional Forms
or
25:147 Total Forms

One elective in analysis of music literature (25:145-147) or equivalent

If exempted from either 25:145 or 25:147 as a result of the advisory examination, the student must take the other course and the analysis of music literature elective. If exempted from both 25:145 and 25:147, the student need only take the analysis of music literature elective. Any serious music theory and ear training deficiencies revealed in the advisory examination are to be removed through 25:11 Review Theory.

Music History

25:301-302 Advanced History and Literature of Music I-II

or equivalent, or satisfactory advisory examination score.

If exempted from 25:301 and/or 25:302 as a result of the advisory examination, the student should elect another course from the music history sequence 25:303-314. 25:316-317, 25:322, 25:330-333, and may elect other musicology courses.

Ensemble Participation

25:185 University Choral, Kantorei
25:191 Symphonic Choir
25:192 Orchestra
25:194 Symphony Band, Wind Ensemble, Concert Band

Keyboard majors may substitute an equivalent for participation in a large ensemble, at their advisers’ discretion. Theory, composition, musicology, and music education majors may, with their adviser’s permission, substitute other ensembles. Voice majors, with their advisers’ permission, may be excused from participation in large vocal ensembles during the period in which they are singing major roles in the opera theater. Any requests for
Admission
Before an applicant will be considered for admission, he or she must have submitted supporting materials in his or her indicated area of concentration, as follows:

Composition—representative musical scores
Theory—analytical or research papers
Music education—no materials required
Performance (including compositional)—audition
Music history and musicology—research papers, thesis
Pedagogy—contact School of Music

Information about specific admission and curricular requirements for each area is available from the director's office.

Master of Fine Arts
The M.F.A. is for students of superior ability in the areas of composition, instrumental or vocal performance, conducting, and opera theater directing. It requires a minimum of 48 post-baccalaureate semester hours.

In addition to the entrance and curricular requirements for the Master of Arts degree, the student must also present at least two full-length recitals or programs (25:401 M.F.A. Thesis), for which a maximum of eight semester hours of credit will be granted. The student may earn a Master of Arts degree while working toward the Master of Fine Arts degree, but all requirements for each degree must be met separately, including two thesis examinations, with a minimum combined total of 60 semester hours of graduate credit. (See the "Graduate College" section of the Catalog for further details.)

Doctoral Degrees
General Requirements
All doctoral study in music includes:

Minimum course requirements fixed under the M.A. degree;
One or more additional electives from an analytical studies sequence 25:148-152 or equivalent;
One or more additional courses in the music history/musicalology sequence indicated in the master's degree requirements;
25:295 Physics of Sound and Music or equivalent;
Reading proficiency in at least one foreign language must be completed before comprehensive examination;
music education students must complete two courses in statistics (or its equivalent); and
Dissertation

All doctoral students must be available for participation in a large ensemble (25:245 Opera Theater—Niles); 25:190 University Choir, 25:191 Symphonic Choir, 25:192 Orchestras; 25:194 Symphony Band, Wind Ensemble, Conduct Band during each term of registration unless excused by their advisors. Keyboard majors may substitute accompaniment in place of participation in a large ensemble, at the discretion of their advisors.

Doctor of Philosophy
Areas of concentration for the Ph.D. include composition, music history and musicology, music education, music theory, and music literature.

The music literature program is designed for students who have already achieved a professional level of musical performance. The student is required to audition in his or her major performance area.

Information about specific admissions and curricular requirements for each area is available from the director's office.

Doctor of Musical Arts
Requirements for the D.M.A. degree in performance and pedagogy are the general doctoral requirements of the school, except that the D.M.A. dissertation consists of three full-length recitals or two recitals and a concert performance with orchestra or other appropriate ensemble. Vocalists may substitute the execution of one or more major roles in a large-scale work for one of their recitals. Conductors will present two programs.

D.M.A. candidates must also give evidence of their ability to make a scholarly investigation of limited scope by means of a written essay.

Admission
Before an applicant will be considered for admission to a doctoral program, he or she must have submitted supporting materials in his or her indicated area of concentration, as follows:

Composition—representative musical scores
Theory—analytical or research papers
Music education—research papers and auditions
Performance (including compositional)—audition
Music history and musicology—research papers, theses

Graduate Awards
Qualified graduate students are invited to apply for teaching and research assistantships. Inquiries should be directed to the School of Music.

Opportunities for Performance
The following organizations provide performing opportunities for qualified students:

Camerata Singers
Old Gold Singers
Kantorei
University Choir
University Chorale, University Singers
Opera Theater
College Musician
Chamber Orchestra
Symphony Orchestra
Symphony Band
Wind Ensemble
Concert Band
Marching Band
Jazz Band
Percussion Ensemble
Scottish Highlanders
MUSIC FIELD (open to nonmajors)

Ensemble

No fees are charged for ensemble courses. Courses may be repeated. Prerequisite: consent of instructor. 

- 25110 Vocal
- 25110 Piano
- 25110 French Horn
- 25110 Trumpet
- 25110 Violin
- 25110 Guitar
- 25110 Saxophone
- 25110 French Horn
- 25110 Trumpet

Undergraduate Program

The undergraduate program in philosophy provides knowledge of the basic issues and the main developments in Western philosophy, and strengthens logical skills that are useful in a wide variety of fields. A major in philosophy can provide preparation for the advanced studies necessary for a career in religion or law, for example, as well as for a position in government or business that requires a general education and a capacity for clear and systematic thinking. Advanced degree work is necessary for a college teaching position in philosophy.

An undergraduate major is required in at least 27 semester hours of courses numbered from 251-101 to 251-190, including:

- 251-103 Introduction to Logic
- 251-111 Axiomat Philosophy
- 251-110 Early Modern Philosophy

Nuclear Medicine Technology

See "Division of Associated Medical Sciences" in the "College of Medicine" section of the Catalog.
Honors Program

The department administers an honors program for undergraduate students of superior ability. The student develops an individualized honors program in consultation with his or her advisor in the department. To be eligible for the program, a student must have a cumulative grade-point average of at least 3.0. A student eligible for and interested in the program should consult with his or her advisor as early as possible, preferably in the sophomore year.

Graduate Program

The graduate program in philosophy is designed to train teachers and scholars in philosophy. The main areas in the graduate curriculum are metaphysics, epistemology, history of philosophy, ethics, logic, and philosophy of science.

Master of Arts

The Master of Arts degree requires a minimum of 30 semester hours of graduate credit and may be taken without thesis. Requirements include courses in metaphysics and epistemology, history of philosophy, logic and philosophy of science, and ethics. In addition, the student must pass an oral final examination. There is no foreign language requirement.

Doctor of Philosophy

Candidacy for the doctoral program is formally determined by a vote of the faculty, usually after the student completes three semesters of graduate study. Requirements include courses in metaphysics and epistemology, history of philosophy, logic and philosophy of science, and ethics. In addition, the student must pass a written comprehensive examination consisting of a dissertation area examination, a special area examination, and a general examination. Before taking the comprehensive examination, the student must show competence in French, German, Greek, or Latin. The candidate usually spends the fourth year writing the doctoral dissertation.

Courses

Undergraduates Only

251:1 Problems of Realism
Philosophical study of realism and their implications. 2 h.

251:2 Problems of Logical Reasoning
Philosophical study of correct and incorrect reasoning. 2 h.

251:3 Problems of Political Philosophy
Philosophical study of the public society and the individual as the state. 2 h.

251:4 Problems of Basic Reality
Philosophical study of certain problems of reality and knowledge. 2 h.

252:18 Philosophy of Mind

252:18 Philosophy of Mind

Undergraduates and Graduates

251:1 Introduction to Philosophy
Analytical and historical introduction stressing fundamental issues and experiments. 3 h.

251:2 Introduction to Ethics
Analytical and historical introduction to ethical theory. 3 h.

251:3 Introduction to Logic
Main issues and basic techniques of modern logic. 3 h.

251:4 Introduction to Philosophy of Science
Main issues in contemporary philosophy of science. 3 h.

251:4 Undergraduate Seminar in Philosophy
Introduction to the main issues and problems of philosophy. 3 h.

251:11 Ancient Philosophy
Main issues and major figures such as Plato and Aristotle. 3 h.

251:12 Medieval Philosophy
Main issues and major figures such as Augustine and Aquinas. 3 h.

251:13 Early Modern Philosophy
Main issues and major figures such as Descartes and Kant. 3 h.

251:14 British-Contemporary Philosophy
Main issues and major figures of twentieth-century analytic philosophy. 3 h.

251:15 Russell and Contemporary Philosophy
Main issues and major figures of twentieth-century analytic philosophy. 3 h.

251:2 American Philosophy
Main issues and major figures such as James and Dewey. 3 h.

251:3 Critical Analysis
Main problems in philosophy of the arts. 3 h.

251:4 Political Philosophy
Main problems in political philosophy. 3 h.

251:5 Social Theory
Main problems in philosophy of history. 3 h.

251:6 Philosophy of Religion
Major theories in philosophy of religion. 3 h.

251:7 Philosophy of Science
Philosophical study of the foundations of scientific method. 3 h.

251:8 Existential Philosophy
Main issues in existentialism, stressing Kierkegaard, Heidegger, Nietzsche, and Sartre. 3 h.

251:9 Social Philosophy
Main issues of the major social philosophers of the last century. 3 h.

251:10 Medieval Philosophy
Selected problems in metaphysics. PRE-REQUISITE: consent of instructor. 3 h.

251:11 Modern Philosophy
Main problems in contemporary epistemology. PRE-REQUISITE: consent of instructor. 3 h.

251:12 Logic
Selected topics in contemporary philosophy of mind. PRE-REQUISITE: consent of instructor. 3 h.

251:13 Ethics
Selected topics in contemporary ethics. PRE-REQUISITE: consent of instructor. 3 h.

251:14 History of Philosophy
Selected topics in history of philosophical ideas. PRE-REQUISITE: consent of instructor. 3 h.

251:15 Topics in Philosophy
Selected topics in history of philosophical ideas. PRE-REQUISITE: consent of instructor. 3 h.

251:16 Philosophy of Mathematics
Main issues in contemporary philosophy of mathematics. PRE-REQUISITE: consent of instructor. 3 h.

251:17 Philosophy of Science
Main issues in contemporary philosophy of science. PRE-REQUISITE: consent of instructor. 3 h.

251:18 Philosophy of Art
Main issues in contemporary philosophy of art. PRE-REQUISITE: consent of instructor. 3 h.

251:19 Philosophy of Language
Main issues in contemporary philosophy of language. PRE-REQUISITE: consent of instructor. 3 h.

251:20 Philosophy of Mind
Main issues in contemporary philosophy of mind. PRE-REQUISITE: consent of instructor. 3 h.

251:21 Philosophy of Psychology
Main issues in contemporary philosophy of psychology. PRE-REQUISITE: consent of instructor. 3 h.

251:22 Philosophy of Religion
Main issues in contemporary philosophy of religion. PRE-REQUISITE: consent of instructor. 3 h.

251:23 Philosophy of Education
Main issues in contemporary philosophy of education. PRE-REQUISITE: consent of instructor. 3 h.

251:24 Philosophy of Science
Main issues in contemporary philosophy of science. PRE-REQUISITE: consent of instructor. 3 h.

251:25 Philosophy of Art
Main issues in contemporary philosophy of art. PRE-REQUISITE: consent of instructor. 3 h.

251:26 Philosophy of Religion
Main issues in contemporary philosophy of religion. PRE-REQUISITE: consent of instructor. 3 h.

251:27 Philosophy of Education
Main issues in contemporary philosophy of education. PRE-REQUISITE: consent of instructor. 3 h.

251:28 Philosophy of Science
Main issues in contemporary philosophy of science. PRE-REQUISITE: consent of instructor. 3 h.

251:29 Philosophy of Art
Main issues in contemporary philosophy of art. PRE-REQUISITE: consent of instructor. 3 h.

251:30 Philosophy of Religion
Main issues in contemporary philosophy of religion. PRE-REQUISITE: consent of instructor. 3 h.

251:31 Philosophy of Education
Main issues in contemporary philosophy of education. PRE-REQUISITE: consent of instructor. 3 h.
Physicial Education—Field House

Department chair: Gene M. Argropy

Undergraduate Programs

Bachelor of Science in Teaching and Coaching

The Bachelor of Science degree program in teaching and coaching prepares students for teaching physical education and related subjects in elementary and secondary schools. It is designed for coaching athletic teams. Although the recent job shortage in teaching and coaching has led to a high level of competition among applicants for teaching positions, graduates in physical education from this department have had a high percentage of placement.

Program requirements include:

10:21-22 Physical Education 2.0 a.h.
27:11 Introduction to Physical Education 0.0 a.h.
27:21-22 Teaching of Physical Education 0.0 a.h.
27:21-22 Teaching of Physical Education 0.0 a.h.
27:37 Teaching of Gymastics 2.0 a.h.
27:37 Teaching of Swimming 2.0 a.h.
27:53 Human Anatomy 2.0 a.h.
27:57 First Aid 0.0 a.h.
27:57 Introduction to Athletic Training 2.0 a.h.
27:47 Leadership Training 1.0 a.h.
27:103 Administration of Physical Education and Athletics 2.0 a.h.
27:105 Adapted Physical Education 2.0 a.h.
27:107 Biomechanics of Physical Education 3.0 a.h.
27:108 Psychological Perspectives in Physical Activity and Sport 3.0 a.h.
27:137 School Physical Education Practicum 0.0 a.h.
27:141 Elementary Physical Education 2.0 a.h.
27:147 Knowledge and Performance Tests in Physical Education 2.0 a.h.
72:13 Introduction to Human Physiology 4.0 a.h.
28:142 Contemporary Issues in Health Education 3.0 a.h.

The program also requires one of these seven coaching courses:

27:32 Coaching of Gymnastics 2.0 a.h.
27:33 Coaching of Football 2.0 a.h.
27:34 Coaching of Baseball 2.0 a.h.
27:35 Coaching of Track and Field Athletics 2.0 a.h.
27:38 Coaching of Basketball 2.0 a.h.
27:39 Coaching of Competitive Swimming 2.0 a.h.
27:39 Coaching of Wrestling 2.0 a.h.

These courses are required for teaching certification in physical education:

76:71 Growth and Motor Development 2.0 a.h.
76:72 Methods and Materials in Elementary School Physical Education 2.0 a.h.
27:20 Teaching of Dance 2.0 a.h.
76:75 Educational Psychology and Measurement 3.0 a.h.
76:81 Physical Education Practicum 1.0 a.h.
76:100 Introduction to Secondary School Teaching 2.0 a.h.

Course Prerequisites:

The Bachelor of Science degree program in physical education includes courses in business to prepare students.
for leadership roles in sports clubs, health spas, YMCA-YWCA's, commercial recreation, and industries where physical fitness of employees is emphasized. Students are also prepared for private enterprise, such as the ownership and operation of a sporting goods store.

Program requirements include:

10:21-22 Physical Education

Skills 8 s.h.

(Select from activities that have commercial potential, such as aerobics, archery, badminton, billiards, bowling, canoeing, cycling, dance, jogging, new games, physical fitness, racquetball, self-defense, scuba, swim aerobics, table tennis, tennis, or weight training, and include at least one activity that involves the individual in trip planning, such as rock climbing, sailing, or skiing.)

27:11 Introduction to Physical Education 0 s.h.
27:21 Teaching of Recreational Sports I 2 s.h.
27:31 Teaching of Gymnastics 2 s.h.
27:37 Teaching of Swimming 2 s.h.
27:53 Human Anatomy 3 s.h.
27:56 First Aid 0 s.h.
Red Cross Standard First Aid Card
Cardiopulmonary Resuscitation Certification 2 s.h.
27:57 Introduction to Athletic Training 2 s.h.
27:98 Special Projects 1-3 s.h.
27:107 Biomechanics of Physical Education 3 s.h.
27:109 Psychological Perspectives in Physical Activity and Sport 3 s.h.
27:141 Elementary Exercises in Physiology 2 s.h.
College of Business Administration coursework (students confer with advisor for selection) 9-4 s.h.
17:41 Food, Nutrition, and Men 3 s.h.
72:13 Introduction to Human Physiology 4 s.h.
Two of the following:
104:106 Recreation Program 3 s.h.
104:106 Administration of Recreation I 4 s.h.
104:130 Park and Recreation Facility Management 3 s.h.

104:142 Principles of Outdoor Education 3 s.h.
11-13 semester hours from the following:
27:98 Leadership Training II 1 s.h.
27:98 Practicum in Special Physical Education 3 s.h.
27:103 Administration of Physical Education I and II 2-3 s.h.
27:147 Knowledge and Performance Tests in Physical Education 2 s.h.
28:142 Contemporary Issues in Health Education 3 s.h.
7C:100 Counseling for Related Professions 2-3 s.h.
7E:71 Growth and Motor Development 2 s.h.
7P:108 Child Development 3 s.h.
7P:132 The Adolescent and Young Adult 3 s.h.
31:19 Psychology in Business and Industry 3 s.h.
31:156 Psychology in Management 3 s.h.
7J:120 Drugs: Their Nature, Action, and Use 0-2 s.h.
9C:175 Managerial Economics 3 s.h.
6L:47 Introduction to Law 3 s.h.
19:155 Communication and Public Relations 3 s.h.

The department also recommends that the student earn certification as an exercise leader by the American College of Sports Medicine.

Bachelor of Arts:
Pre-Doctoral Program

The predoctoral Bachelor of Arts program is open only to students with superior academic records. The program is designed to prepare students for graduate work in physical education with emphasis on exercise physiology, adapted physical education, anatomy, biomechanics, or evaluation and statistics.

The curriculum consists of a core of courses in physical education, and selected courses in mathematics, the biological sciences, and the physical sciences, which are basic to advanced study in the area in which the student is interested. Because the student need not meet certification requirements for teaching in the public schools, this curriculum offers considerable latitude in the choice of electives to fit individual interests and needs.

Required foundation courses:
4:13-14 Principles of Chemistry 8 s.h.
4:18 Elementary Chemistry Laboratory I 2 s.h.
4:121 Organic Chemistry I 3 s.h.
22M:2-3 Mathematical Techniques 6 s.h.
22M:20 Elementary Functions 3 s.h.
29:11-12 College Physics 6 s.h.

Required professional courses in physical education and related areas:
27:11 Introduction to Physical Education 0 s.h.
27:21-22 Teaching of Recreational Sports I and II 4 s.h.
27:53 Human Anatomy 2-3 s.h.
27:59 Leadership Training I 1 s.h.
27:05 Adapted Physical Education 2 s.h.
79:75 Educational Psychology and Measurement 3 s.h.
79:146 Methods in Secondary Physical Education 3 s.h.
72:13 Introduction to Human Physiology 4 s.h.
72:202 Exercise Physiology 2 s.h.
72:303 Physiology of Exercise Laboratory 2 s.h.
99:120 The Chemistry of Biological Materials 3 s.h.
99:130 Metabolism 3 s.h.

Minor in Physical Education

The minor requires completion of 16 semester hours from the following courses:
27:98 Special Projects 4 s.h.
27:102 Issues and Trends in Physical Education and Athletics 2 s.h.
27:103 Administration of Physical Education and Athletics 2-3 s.h.
27:107 Biomechanics of Physical Education 3 s.h.
27:108 Psychological Perspectives in Physical Activity and Sport 3 s.h.
27:137 School Physical Education Programs 2 s.h.
27:141 Elementary Exercise Physiology 2 s.h.
27:48 Psychology of Sport 3 s.h.
Endorsement for Coaching
The Iowa Department of Public Instruction has provided for the endorsement of certified teachers for the coaching of athletic teams in schools. This endorsement is intended for teachers who have majors in subjects other than physical education but who wish to coach interscholastic athletic teams. The endorsement does not permit the teacher to teach physical education classes in public schools.

Certification for coaching athletic teams at the junior high and secondary school levels requires satisfactory completion of the following courses:

27:53 Human Anatomy 3 s.h.
27:58 First Aid 0 s.h.
27:57 Introduction to Athletic Training 2 s.h.
27:103 Administration of Physical Education and Athletics 3 s.h.
27:107 Biomechanics of Physical Education 3 s.h.
27:108 Psychological Perspectives in Physical Activity and Sport 3 s.h.
27:141 Elementary Exercise Physiology 2 s.h.
15:192 Observation and Laboratory Practice in the Secondary School 3 s.h.

May be waived on the basis of appropriate coaching experience.

Endorsement for Athletic Trainers
The endorsement is provided for students who want to be certified as trainers for athletic teams at either the secondary school level or a part of their regular teaching duties, or at the college and university level. The courses required are designed to meet the standards for certification as set by the National Athletic Trainers Association, and include:

17:41 Food, Nutrition, and Man 3 s.h.
17:142 Nutrition 3 s.h.
31:11 Elementary Psychology 4 s.h.
7P:75 Educational Psychology and Measurement 3 s.h.
72:13 Introduction to Human Physiology 4 s.h.
28:142 Contemporary Issues of Health Education 3 s.h.
27:53 Human Anatomy 2-3 s.h.
27:56 First Aid 0 s.h.
27:57 Introduction to Athletic Training 2 s.h.
27:105 Adapted Physical Education 2 s.h.
27:107 Biomechanics of Physical Education 3 s.h.
27:141 Elementary Exercise Physiology 2 s.h.
27:17:11 Medical Supervision of Athletics 2-3 s.h.
27:162 Evaluation Techniques in Athletic Training 2 s.h.
27:193 Athlet Training Modalities and Therapeutics 3 s.h.
27:164 Laboratory Practice in Athletic Training 2 s.h.

Pre-Physical Therapy
Students who wish to be considered for admission to a physical therapy training program must complete these courses:

27:21-22 Teaching of Recreational Sports 1-6 s.h.
27:31 Teaching of Gymnastics 3 s.h.
27:37 Teaching of Swimming 2 s.h.
27:53 Human Anatomy 2-3 s.h.
27:56 First Aid 0 s.h.
27:57 Introduction to Athletic Training 2 s.h.
27:58-59 Practicum in Special Physical Education 6 s.h.
27:103 Administration of Physical Education and Athletics 2-3 s.h.
27:105 Adapted Physical Education 2 s.h.
27:107 Biomechanics of Physical Education 3 s.h.
27:108 Psychological Perspectives in Physical Activity and Sport 3 s.h.
27:141 Elementary Exercise Physiology 2 s.h.
27:163 Advanced Anatomy and Kinesiology 2-3, 5 s.h.
47:13-14 Principles of Chemistry I & II 6 s.h.
47:16 Elementary Chemistry Laboratory I 2 s.h.
29:11-12 College Physics 2 s.h.
31:11 Elementary Psychology 4 s.h.
31:13 Introduction to Clinical Psychology 3 s.h.
31:163 Abnormal Psychology 0 s.h.
37:3 Principles of Animal Biology 5 s.h.
27:81 Human Genetics 4 s.h.
31:103 Comparative Vertebrate Anatomy 4 s.h.
28:141 Contemporary Issues of Health Education 3 s.h.
72:13 Introduction to Human Physiology 4 s.h.
A course in mathematics

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 teachers of basic physical education and non-athletics coaches. Emphasis is placed on the application of research findings in the organization, teaching, and evaluation of basic physical education programs for all students in schools and colleges, and to the coaching of interscholastic and intercollegiate athletic teams. The program focuses on problems associated with teaching and coaching in public schools and community colleges in Iowa.

The following undergraduate course work is required background for the nonthesis M.A. program in physical education:

Human anatomy 2 s.h.
Human physiology 3 s.h.
Perusal hygiene (or equivalent) 2 s.h.
Administration of physical education and athletics 2 s.h.
Methods in physical education 2 s.h.
Practice teaching (or equivalent) 3 s.h.
Teaching of gymnastics 1 s.h.
Teaching of swimming 1 s.h.
Coaching (one sport) 1 s.h.
Electives in physical education and related areas 13 s.h.
Total 30 s.h.
Credit may be given for experience and for competence in techniques when such competence is demonstrated by examination.

For the M.A. degree without thesis, the student must complete a minimum of 30 semester hours, at least 24 of which must be in physical education, including 27:301 Non-thesis Seminar and at least...
Candidates who intend to terminate their graduate study with the M.A. degree with thesis should have an undergraduate major in physical education.

These courses are required for the M.A. degree with thesis:

27:140 Professional Preparation in Physical Education 2 s.h.

Two courses outside the area of specialization, from the following:

27:152 Advanced Anatomy and Kinesiology 2 s.h.
72:202 Exercise Physiology 2 s.h.
72:302 Physiology of Exercise Laboratory 2 s.h.

27:205 Advanced Physical Education: Special Topics and Research 3-4 s.h.
27:242 Supervision of Physical Education 3 s.h.
27:257 Biomechanics of Human Motion 4 s.h.
27:285 Advanced Measurement and Evaluation in Physical Education 3 s.h.
27:306 Human Perceptual-Motor Performance 3 s.h.
27:327 Seminar in Research in Physical Education Curriculum 3 s.h.

These tools of research:
75:143 Introduction to Statistical Methods 3 s.h.
63:161 Introduction to Biostatistics 3 s.h.
27:120 Introduction to Computing with FORTRAN 3 s.h.
or
27:248 Data Processing 3 s.h.

Specialization area:
27:401 Seminar in Scientific Writing 1 s.h.
27:404 Thesis M.A. 4 s.h.
Courses approved by adviser 5-7 s.h.
Electives 4-6 s.h.

Total 36-50 s.h.

Doctor of Philosophy

A Ph.D. candidate in physical education should have a general knowledge of all areas of physical education, a working knowledge of the research techniques applicable to problems in physical education, and knowledge in at least one area of specialization in physical education.

The areas of specialization offered in physical education are adapted physical education, administration and supervision in physical education, anatomy, biomechanics, curriculum in physical education, exercise physiology, measurement and evaluation in physical education, motor behavior, and therapeutics.

The thesis program for the M.A. degree is physical education, together with the Ph.D. core courses, provide the required background for the Ph.D. candidate's specialization. The candidate must complete at least 30 semester hours of graduate study in the specialization of his or her choice, must write a thesis on a problem in that area, and must submit the thesis to an approved professional journal for publication.

Most of the courses in the areas of specialization are offered by departments other than the Department of Physical Education—Field House. Professors from these departments participate in writing and evaluating the comprehensive examinations, serve on thesis committees for the initial presentation of the proposed problem, and participate in the final examination in which the candidate defends his or her thesis.

In addition to writing a comprehensive examination in physical education, the candidate specializing in exercise physiology with a specialization in cardiovascular examination prepares and evaluates by faculty members of the Department of Physiology and Biophysics in the College of Medicine. Such candidates graduate with a minor in physiology.

The Ph.D. core requirements include:

27:405 Thesis: Ph.D. 12 s.h.
75:242 Selected Applications of Statistical Techniques 3 s.h.
or
63:162 Design and Analysis of Experiments in Biomedical Sciences 3 s.h.
and
27:203 Practicum in College Teaching 3 s.h.

The foreign language requirement differs for each area of specialization. All...
candidates not required to demonstrate proficiency in a foreign language must satisfactorily complete TP248 Data Processing or TP2100 Introduction to Computing with FORTRAN.

The candidate must complete a minimum of 30 semester hours of required and elective courses in his or her area of specialization. The courses required by area of specialization are:

Adapted Physical Education
7U:130 Exceptional Children 3 s.h.
7U:201 Research 3-6 s.h.
7U:206 Adapted Physical Education: Special Topics and Research 3-4 s.h.
60:108 Human Anatomy 4 s.h.
60:109 Human Anatomy and Neuroanatomy 4 s.h.

Administration and Supervision in Physical Education
7U:242 Supervision of Physical Education 3 s.h.
7U:201 Foundations of School Administration 3 s.h.
7U:221 Research 4 s.h.
7U:220 Advanced Administration of Physical Education 2 s.h.
7U:222 Advanced Administration of Athletics 2 s.h.

Anatomy
60:203 Gross Human Anatomy for Graduate Students 8 s.h.
or
60:108 Human Anatomy and Neuroanatomy 4 s.h.
60:109 Human Anatomy and Neuroanatomy 4 s.h.

7U:112 Cell, Tissue, and Organ Biology 6 s.h.
27:153 Advanced Anatomy and Kinesiology 5 s.h.
27:245 Electrophysiology in Kinesiology and Biomechanics 3 s.h.

Biomechanics
627:150 Readings in Energy Engineering 6 s.h.
(Include mechanics of fluids, transfer processes, and deformable bodies)
568:155 Intermediate Dynamics 3 s.h.
64:203 Biomechanics 3 s.h.
60:108 Human Anatomy 4 s.h.
27:202 Practicum in College Teaching 1-4 s.h.
27:245 Electrophysiology in Kinesiology and Biomechanics 3 s.h.

27:387 Research Techniques in Biomechanics 4 s.h.

Curriculum in Physical Education
7U:330 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 3 s.h.
7U:201 Secondary School Curriculum 3 s.h.
7U:181 Introduction to Theory of Learning 3 s.h.
27:301 Research 3 s.h.
27:338 Seminar: Models and Theory in Curriculum 2 s.h.
28:243 Philosophical Aspects of Curriculum Construction 3 s.h.

Exercise Physiology
37:112 Cell, Tissue, and Organ Biology 5 s.h.
or
60:206 Microscopic Anatomy for Graduate Students 5 s.h.
37:162 Endocrinology Laboratory 2 s.h.
71:106 Pharmacology for Health Sciences Medical 3 s.h.
72:202 Exercise Physiology 2 s.h.
27:302 Physiology of Exercise Laboratory 2 s.h.
72:212 Medical Physiology 3 s.h.
72:274 Advanced Exercise Physiology Seminar 1 s.h.
27:303 Advanced Exercise Physiology Laboratory 3 s.h.
99:130 Metabolism 3 s.h.

Measurement and Evaluation
22C:100 Introduction to Computing with FORTRAN 3 s.h.
7P:243 Intermediate Statistical Methods 4 s.h.
or
7P:244 Correlation Methods 3 s.h.
22S:153 Introduction to Probability 3 s.h.
and
22S:154 Introduction to Mathematical Statistics 3 s.h.
7P:245 Design of Experiments 4 s.h.
7P:255 Construction and Use of Evaluation Instruments 3 s.h.
7P:357 Educational Measurement and Evaluation 3 s.h.

7U:387 Seminar: Research in Measurement and Evaluation in Physical Education 3 s.h.

Motor Behavior and Learning
27:312 Selected Issues in Learning Processing and in Motor Coordination 3 s.h.
27:314 Seminar in Motor Behavior Research 3 s.h.
31:223 Information Processing in Psychology 3 s.h.
Therapeutics
101:214 Principles of Human Motion II on-226 Analysis of Scientific Literature 2 s.h.
101:327 Research in Therapeutics 3 s.h.
101:280 Teaching Practicum 3 s.h.
or
101:282 Clinical Educational Practicum 3 s.h.
or
101:284 Practicum in Research 3 s.h.
7W:121 Designing and Developing Instructional Materials 3 s.h.

Admission
Admission to the Ph.D. program is based on the applicant's grade-point average on work completed for the M.A. or M.S. degree, and his or her score on the Graduate Record Examination Aptitude Test. To be considered for admission, the student must have earned a grade-point average of 3.0 or higher on all graduate work undertaken.

Facilities
The Recreation Building and Field House provide excellent facilities for use in the physical education skills program, in the undergraduate and graduate instructional programs, and for student participation in intramural, sports, recreational activities, and athletics. Research laboratories for physiology of exercise, stress, motor behavior, and biomechanics are located in the Field House and provide excellent facilities for instruction and research at both the undergraduate and graduate levels. Because of our cooperative efforts with other departments to facilitate specialization, physical education students use additional special facilities in other departments on the campus.
Physical Education and Dance—Halsey Gym

Chair: N. Peggy Burke
Faculty: Professor: Lisa L. Zuck
Assistant Professor: Margaret D. Fox, M. Shady Scott
Assistant Professor: Judith H. Allen, N. Peggy Burke, Christine H. Grant, Jeanette L. Kuhnel, Carol L. Stavne

The Department of Physical Education and Dance—Halsey Gym offers bachelor’s degree programs in physical education (teaching and non-teaching majors), the coaching of sports, the teaching of dance, dance performance, pre-physical therapy, and sports communications.

It offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees in physical education.

Physical Education Undergraduate Programs

Each undergraduate student in physical education elects a wide variety of courses and activities in preparation for careers in business and industry, sports journalism and broadcasting, fitness and health clubs, sport speciality and sports marketing, professional dance and theater, and public school teaching and coaching.

The student acquires theoretical background through anatomy, kinesiology, physiology, and health coerequisites, with implications for the performance and teaching of movement skills.

The undergraduate programs are also designed to prepare the student for graduate work in physical education. (See "Graduate Programs" for areas of specialization.)
75:100 Introduction: Secondary School Teaching 2 s.h.
72:167 Seminar: Curriculum and Student Teaching 1 s.h.
75:191 Observation and Laboratory Practice in the Secondary School 6 s.h.
75:192 Laboratory Practice in the Elementary School 6 s.h.
75:196 Coaching Practicum 1-3 s.h. (optional)

Areas of Specialization
Students must complete one of these two areas:

Physical Education Area
28:25 Teaching of Sports 2 s.h.
(Team and Individual)
28:27 Teaching of Dance 2 s.h.
28:31 Officializing 1 s.h.
28:107 Physical Education for the Atypical 5 s.h.
28:113 Measurement 2 s.h.
28:118 Methods and Administration of Physical Education 3 s.h.
28:165 Internships 1-2 s.h.
28:167 Psycho-Social Dimensions of Sport 2 s.h.

Team Sports 3 s.h.
(1 semester hour must be in a field sport, 1 semester hour in an Intermediate-level course, elect from basketball, volleyball, field hockey, field sports, softball)

Individual or dual sports 4 s.h.
(1 semester hour must be a racquet sport, 1 semester hour in an Intermediate-level course, elect from tennis, wrestling, track and field, tennis, golf, wrestling, dance, bowling, archery)

Rhythms 2 s.h.
(1 semester hour of ballet dance, 1 semester hour of modern dance or jazz)

Dance Education Area
28:26 Rhythmic Analysis of Dance 2 s.h.
28:23 Composition I 2 s.h.
28:74 Composition II 2 s.h.
28:111 Methods and Materials of Teaching Children's Dance 3 s.h.

One of the following:
28:26 Dance Production 3 s.h.
28:118 Twentieth-Century Dance 3 s.h.
28:120 Dance & Education 2 s.h.

28:136 Teaching of Modern Dance 2 s.h.
At least 7 semester hours of the following:
28:8 Modern Dance 1-2 s.h.
28:9 Modern Dance I 3 s.h.
28:9 Jazz 1-2 s.h.
28:10 Ballet 2 s.h.
28:11 Major Ballet I 2 s.h.
28:12 Major Ballet II 3 s.h.
28:12 Major Ballet III 3 s.h.
28:13 Modern Dance II 3 s.h.

Team sports 1 s.h.
Individual or dual sports 5 s.h.
Rhythms 2 s.h.
(1 semester hour of ballet dance, 1 semester hour of folk and square dancing)

Gymnastics 1 s.h.

Physical Education and Sport (nonteaching)
Physical Education Core Requirements
28:19 Introduction to Human Movement 1 s.h.
28:80 Anatomy 3 s.h.
28:81 Kinesiology 3 s.h.
28:106 Physiological Implications for Teaching Physical Education 3 s.h.
28:113 Measurement 2 s.h.
28:116 Methods and Administration of Physical Education 3 s.h.
28:121 History and Philosophy of Physical Education 2 s.h.
28:125 Psycho-Social Dimensions of Sport 3 s.h.

Sport Skills Requirements
Option 1
5 beginning skills
2 Intermediate skills
1 officiating

Option 2
5 beginning skills
2 intermediate skills
1 advanced skill

Option 3
5 beginning skills
3 intermediate skills

Electives
At least 6 semester hours from:
28:14 Coaching Women's Sports 2 s.h.
28:25 Teaching of Sports 2 s.h.
28:37 Advanced First Aid 3 s.h.
28:71 Growth and Motor Development 2 s.h.
28:105 Care of Athletic Injuries 2-3 s.h.
28:142 Contemporary Issues of Health Education 3 s.h.
28:163 Sports Analysis 3 s.h.

Recommended
17:1 Nutrition 3 s.h.
6A:1 Introduction to Financial Accounting 3 s.h.
6F:15 Introductory Financial Management 3 s.h.
6M:31 Introduction to Marketing 3 s.h.
6L:61 Administrative Management 3 s.h.
6E:1 Principles of Economics 3 s.h.

Internship Requirement
The student may elect to complete one internship for 6 semester hours of credit, or two internships for 3 semester hours each, in the following specializations:
Sports specialist
Fitness specialist
Sports administration
Sports marketing

Endorsement in Coaching
28:16 Coaching Women's Sports 2 s.h.
or
28:318 Advanced Coaching 2 s.h.
28:61 Kinesiology 3 s.h.
28:105 Care of Athletic Injuries 2 s.h.
28:106 Physiological Implications for Teaching Physical Education 3 s.h.
7E:11 Growth and Motor Development 2 s.h.
or
7P:106 Child Development 3 s.h.
75:196 Coaching Practicum 1-3 s.h.

General Studies Program
The B.D.Ed. program in health, physical education, and recreation requires a minimum of 18 semester hours of coursework in physical education and an additional 20 semester hours in such other areas as art, dramatic art, dance, environmental health, home economics, music, psychology, recreation, and/or sociology. The student may take additional coursework in physical education. At least 18 of the required 36
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-10 Growth and Development of the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>17-41 Food, Nutrition, and Man</td>
<td>3</td>
</tr>
<tr>
<td>27-53 Human Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>or 28-80 Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>48-56 Non-Prescription Drugs</td>
<td>2</td>
</tr>
<tr>
<td>or 27-96 First Aid</td>
<td>0</td>
</tr>
<tr>
<td>or 29-97 Advanced First Aid</td>
<td>3</td>
</tr>
<tr>
<td>or Red Cross Certification</td>
<td>3</td>
</tr>
<tr>
<td>72-13 Introduction to Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>7C-112 Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>28-142 Contemporary Issues of Health Education</td>
<td>3</td>
</tr>
<tr>
<td>28-144 Administration of School Health Program</td>
<td>3</td>
</tr>
<tr>
<td>28-146 Methods: Health Instruction for Secondary Grades</td>
<td>3</td>
</tr>
</tbody>
</table>

**Graduate Programs**

This department was one of the pioneers in providing graduate physical education programs for women, especially at the doctoral level. It has awarded over 400 master's degrees and over 150 doctoral degrees during the past half century. These graduates have gone on to provide distinguished service through teaching, coaching, research, administration, and other leadership roles in physical education, dance, and athletics. The department's proud heritage of producing leaders has been furthered by recent graduates, and we continue to encourage high aspirations of both the young women and men we currently serve.

The curricula assume previous education in the respective fields. A program is planned with the individual in light of his or her previous education and anticipated future career. Completion of the graduate degree usually leads to teaching, coaching, administration, or supervision in the schools or in a university. Research preparation is provided for anyone who wishes a career in that area.

The outstanding characteristics of the graduate programs are the flexibility of program planning for the individual student and the diversity of areas of research available to the student. Attendance at summer sessions is helpful in obtaining full opportunities for a variety of instruction.

The graduate student works primarily in the Department of Physical Education and Dance, but the resources of the entire university are available, as needed, for the individual student. Work outside the department provides a broader view and enrichment for the selected specialization of the master's or doctoral candidate.

The most common area of specialization is in athletics and physical education, coaching, measurement and evaluation, history and philosophy of physical education and sport, sociology of sport, psychology of sport, and sports communication.

Internships are available in many areas, and are strongly encouraged for specializations in administration, coaching, and communication.

The graduate student group is cosmopolitan and international in make-up.

A research laboratory is available in Halsey Gymnasium, it is equipped primarily for psychological measurement, and for learning research. Other equipment needs may be met on an interdepartmental shared-use basis. A computer terminal is available at Halsey Gymnasium, and complete University computer service is available as needed for research.

**Master of Arts**

The M.A. degree is awarded on completion of at least 30 semester hours of graduate work including thesis, or 36 hours of coursework without thesis. The curriculum may lead to teaching, administration, supervision in the schools, coaching certification, or preparation for advanced degree work in the chosen area of specialization. Student must demonstrate competency in anatomy, kinesiology, physiology, and
at least three of the following areas: adaptive, measurement, history of physical education or sport, methods and principles, administration of physical education or athletics, curriculum, motor learning, motor development, or psychosocial dimensions of physical activity. Competency may be demonstrated by completion of a course or satisfactory performance on a written examination.

Required Courses
28:205 Techniques of Research 3-4 s.h.
28:302 Seminar: Perspectives in Human Movement 2 s.h.
(For students on thesis option)

Program Options
The M.A. student may select either a general curriculum or a specialization in adaptive physical education, administration of athletics/physical education, coaching, dance, measurement and evaluation, methods and supervision, philosophy of physical education/sports, psychology of sport, sociology of sport, or sport communication. Students desiring other specializations are encouraged to submit a course of study to the graduate committee for consideration.

Students in both the general curriculum and in an area of specialization work with an adviser in developing their program according to guidelines that have been set by the departmental graduate committee.

Doctor of Philosophy
The Ph.D. degree is awarded on completion of approximately 90 semester hours of graduate work, including the minimum requirements for the master's degree and credit for the dissertation.

Prerequisites
Competency in the areas noted under the M.A. program is also required for doctoral enrollment. Any deficiencies in these areas must be remedied at the earliest possible time.

Tools of Research
All doctoral students are required to take a statistics course at an appropriate level at The University of Iowa. As their second research tool, students may choose either language or computer science.

The language requirement may be satisfied by taking two seminars of a given language with a minimum grade of C, by passing a Graduate Record Examination test in a given language, or by passing a Ph.D. language examination.

The computer tool requirement option may be satisfied by taking three semester hours as approved by the departmental graduate committee.

Required Courses
28:205 Techniques of Research 3-4 s.h.
28:302 Seminar: Perspectives in Human Movement 2 s.h.

Specialization
The student must complete a specialization of 30 semester hours, including dissertation. A student must also take approximately 20 semester hours in one or more departments other than physical education. If appropriate, some of these may be counted toward the specialization. The following specialization areas have been approved: administration of physical education/athletics, measurement and evaluation, psychology of sport, and sociology of sport. Specializations in adaptive physical education and history of sport are in the development stage. Students desiring an area not listed should submit a plan of study for consideration.

Comprehensive Examination
The student writes an examination in the area of specialization and may also be asked to do a part of the examination orally. The student and adviser set the date of the examination, and it is conducted according to the policies established by the departmental graduate committee. The program of study and dissertation topic must be filed and the tool requirements met prior to taking the specialization examination.

Dissertation
All doctoral students are required to complete a dissertation. A final two-hour examination is held with an appropriate committee.

Residency Requirement
Two semesters of at least 9 semester hours in residence are required.

Dance
Bachelor of Arts

Required
28:206 Dance Production 3 s.h.
28:209 Rhythmic Analysis of Dance 2 s.h.
28:73 Composition I 2 s.h.
28:74 Composition II 2 s.h.
28:90 Anatomy 3 s.h.
28:91 Kinesiology 3 s.h.
28:14 History and Appreciation of Dance 3 s.h.
28:115 Twentieth-Century Dance 3 s.h.
28:173 Composition III 2 s.h.
28:174 Composition IV 2 s.h.
28:177 Beginning Labanotation 3 s.h.
28:105 Dramatic Art Laboratory 4 s.h.

Electives
Twelve semester hours from the following:
28:111 Methods and Materials of Teaching Children's Dance (same as 75:125) 2-3 s.h.
28:113 Ballet Pointe 1-2 s.h.
28:117 Ballet Pedagogy 2 s.h.
28:120 Dance in Education (same as 75:120) 2 s.h.
28:126 Dance Production Laboratory 1-2 s.h.
28:130 Improvisation 1 s.h.
28:136 Teaching of Modern Dance 2 s.h.
28:141 Introduction to Movement: Dynamics and Personality Growth 3 s.h.
28:142 Introduction to Movement: Dynamics and Personality Growth 3 s.h.
28:151 Intensive Training for the Male Dancer 2-3 s.h.
28:170 Readings in Dance 2 s.h.
28:175 Dance Theory 3 s.h.
28:176 Criticism of Dance 3 s.h.
28:178 Intermediate Labanotation 3 s.h.
28:181 Dance Company Class 0-1 s.h.
28:191 Independent Study arr.
28:192 Workshop: Aerial in Residence 1-4 s.h.
Dance majors must take a technique class each semester, with a maximum of 14 semester hours allowed toward a degree, and including a minimum of 4 semester hours of ballet and 4 semester hours of modern dance from the following:

<table>
<thead>
<tr>
<th>Dance Education</th>
<th>Major Arts (Dance Specialization)</th>
</tr>
</thead>
<tbody>
<tr>
<td>See the B.S. in physical education (dance specialization) program.</td>
<td></td>
</tr>
</tbody>
</table>

**Master of Arts (Dance Specialization)**

The M.A. degree in physical education (dance specialization) is awarded on completion of at least 36 semester hours of graduate work including thesis. The curriculum may lead to teaching of dance or to further work toward a dance career.

**Prerequisites**

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Art of Choreography</th>
<th>Dance Production</th>
<th>History and Appreciation of Dance</th>
</tr>
</thead>
<tbody>
<tr>
<td>28:30 Anatomy</td>
<td>3 s.h.</td>
<td>3 s.h.</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>28:31 Kinesiology</td>
<td>3 s.h.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28:36 Rhythmical Analysis of Dance</td>
<td>3 s.h.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Required Courses**

- Two semester hours from these four courses:
  - 28:145 Graduate Technique Tap
  - 28:148 Graduate Technique Modern Dance
  - 28:149 Graduate Technique Jazz
  - 28:150 Graduate Technique Ballet

- 28:173 Composition I
- 28:174 Composition II
- 28:177 Beginning Labanotation

**Courses**

**Physical Education**

**Primarily for Undergraduates**

- 28:216 Physiological Functioning in Physical Education
- 28:205 Techniques of Research
- 28:215 Twentieth-Century Dance
- 28:176 Dance Theory
- 28:178 Criticism of Dance
- 28:204 Seminar in Dance
- 28:202 Seminar: Perspectives in Human Movement
- 28:401 Thesis

Elective courses may be taken in related fields of physical education, music, theater, and/or art with the consent of the adviser.

**Faculty**

The faculty represents diversified backgrounds and specializations. Abilities and interest are complementary. Most faculty members hold advanced degrees. Several bring educational backgrounds from abroad. All are experienced teachers. Graduate faculty members are experienced in research and writing and are available for the guidance of graduate students in their areas of specialization. Many hold significant leadership positions and are frequently called upon for lectures, speeches, and research presentations.

**Facilities**

Gymnasiums, dance studios, special exercise rooms, and pools are used in the various programs in Harvey Gymnasium, North Hall, the Field House, the Recreation Building, and the recreation area at the Memorial Union. The field for outdoor sports and land-surfaced tennis courts are near the Harvey Gymnasium. The proximity of the river makes canoeing instruction feasible on a regular class schedule. The archery range is located along the river in a rustic setting; outdoor fields and a track are available between the Field House and the Recreation Building. The University golf course is used for some classes and for the women's intercollegiate golf team.

**Liberal Arts/Physical Education and Dance—Halsey Gym**

**Technique Requirement**

Dance majors must take a technique class each semester, with a maximum of 14 semester hours allowed toward a degree, and including a minimum of 4 semester hours of ballet and 4 semester hours of modern dance from the following:

<table>
<thead>
<tr>
<th>Dance Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technique requirement</td>
</tr>
</tbody>
</table>

- 28:216 Physiological Functioning in Physical Education
- 28:205 Techniques of Research
- 28:215 Twentieth-Century Dance
- 28:176 Dance Theory
- 28:178 Criticism of Dance
- 28:204 Seminar in Dance
- 28:202 Seminar: Perspectives in Human Movement
- 28:401 Thesis

Elective courses may be taken in related fields of physical education, music, theater, and/or art with the consent of the adviser.

**Courses**

**Physical Education**

**Primarily for Undergraduates**

- 28:216 Physiological Functioning in Physical Education
- 28:205 Techniques of Research
- 28:215 Twentieth-Century Dance
- 28:176 Dance Theory
- 28:178 Criticism of Dance
- 28:204 Seminar in Dance
- 28:202 Seminar: Perspectives in Human Movement
- 28:401 Thesis

Elective courses may be taken in related fields of physical education, music, theater, and/or art with the consent of the adviser.

**Faculty**

The faculty represents diversified backgrounds and specializations. Abilities and interest are complementary. Most faculty members hold advanced degrees. Several bring educational backgrounds from abroad. All are experienced teachers. Graduate faculty members are experienced in research and writing and are available for the guidance of graduate students in their areas of specialization. Many hold significant leadership positions and are frequently called upon for lectures, speeches, and research presentations.

**Facilities**

Gymnasiums, dance studios, special exercise rooms, and pools are used in the various programs in Harvey Gymnasium, North Hall, the Field House, the Recreation Building, and the recreation area at the Memorial Union. The field for outdoor sports and land-surfaced tennis courts are near the Harvey Gymnasium. The proximity of the river makes canoeing instruction feasible on a regular class schedule. The archery range is located along the river in a rustic setting; outdoor fields and a track are available between the Field House and the Recreation Building. The University golf course is used for some classes and for the women's intercollegiate golf team.

**Liberal Arts/Physical Education and Dance—Halsey Gym**

**Technique Requirement**

Dance majors must take a technique class each semester, with a maximum of 14 semester hours allowed toward a degree, and including a minimum of 4 semester hours of ballet and 4 semester hours of modern dance from the following:

<table>
<thead>
<tr>
<th>Dance Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technique requirement</td>
</tr>
</tbody>
</table>

- 28:216 Physiological Functioning in Physical Education
- 28:205 Techniques of Research
- 28:215 Twentieth-Century Dance
- 28:176 Dance Theory
- 28:178 Criticism of Dance
- 28:204 Seminar in Dance
- 28:202 Seminar: Perspectives in Human Movement
- 28:401 Thesis

Elective courses may be taken in related fields of physical education, music, theater, and/or art with the consent of the adviser.

**Courses**

**Physical Education**

**Primarily for Undergraduates**

- 28:216 Physiological Functioning in Physical Education
- 28:205 Techniques of Research
- 28:215 Twentieth-Century Dance
- 28:176 Dance Theory
- 28:178 Criticism of Dance
- 28:204 Seminar in Dance
- 28:202 Seminar: Perspectives in Human Movement
- 28:401 Thesis

Elective courses may be taken in related fields of physical education, music, theater, and/or art with the consent of the adviser.

**Faculty**

The faculty represents diversified backgrounds and specializations. Abilities and interest are complementary. Most faculty members hold advanced degrees. Several bring educational backgrounds from abroad. All are experienced teachers. Graduate faculty members are experienced in research and writing and are available for the guidance of graduate students in their areas of specialization. Many hold significant leadership positions and are frequently called upon for lectures, speeches, and research presentations.

**Facilities**

Gymnasiums, dance studios, special exercise rooms, and pools are used in the various programs in Harvey Gymnasium, North Hall, the Field House, the Recreation Building, and the recreation area at the Memorial Union. The field for outdoor sports and land-surfaced tennis courts are near the Harvey Gymnasium. The proximity of the river makes canoeing instruction feasible on a regular class schedule. The archery range is located along the river in a rustic setting; outdoor fields and a track are available between the Field House and the Recreation Building. The University golf course is used for some classes and for the women's intercollegiate golf team.

**Liberal Arts/Physical Education and Dance—Halsey Gym**

**Technique Requirement**

Dance majors must take a technique class each semester, with a maximum of 14 semester hours allowed toward a degree, and including a minimum of 4 semester hours of ballet and 4 semester hours of modern dance from the following:

<table>
<thead>
<tr>
<th>Dance Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technique requirement</td>
</tr>
</tbody>
</table>

- 28:216 Physiological Functioning in Physical Education
- 28:205 Techniques of Research
- 28:215 Twentieth-Century Dance
- 28:176 Dance Theory
- 28:178 Criticism of Dance
- 28:204 Seminar in Dance
- 28:202 Seminar: Perspectives in Human Movement
- 28:401 Thesis

Elective courses may be taken in related fields of physical education, music, theater, and/or art with the consent of the adviser.

**Courses**

**Physical Education**

**Primarily for Undergraduates**

- 28:216 Physiological Functioning in Physical Education
- 28:205 Techniques of Research
- 28:215 Twentieth-Century Dance
- 28:176 Dance Theory
- 28:178 Criticism of Dance
- 28:204 Seminar in Dance
- 28:202 Seminar: Perspectives in Human Movement
- 28:401 Thesis

Elective courses may be taken in related fields of physical education, music, theater, and/or art with the consent of the adviser.

**Faculty**

The faculty represents diversified backgrounds and specializations. Abilities and interest are complementary. Most faculty members hold advanced degrees. Several bring educational backgrounds from abroad. All are experienced teachers. Graduate faculty members are experienced in research and writing and are available for the guidance of graduate students in their areas of specialization. Many hold significant leadership positions and are frequently called upon for lectures, speeches, and research presentations.

**Facilities**

Gymnasiums, dance studios, special exercise rooms, and pools are used in the various programs in Harvey Gymnasium, North Hall, the Field House, the Recreation Building, and the recreation area at the Memorial Union. The field for outdoor sports and land-surfaced tennis courts are near the Harvey Gymnasium. The proximity of the river makes canoeing instruction feasible on a regular class schedule. The archery range is located along the river in a rustic setting; outdoor fields and a track are available between the Field House and the Recreation Building. The University golf course is used for some classes and for the women's intercollegiate golf team.
39:07 Recreational Sports 1.0 h.
39:08 Golf 1.0 h.
39:09 For students with previous experience and/or instruction in golf.
39:30 Sociology 1.0 h.
39:36 Individual 1.0 h.
39:40 Individual 1.0 h.
39:50 Individual 1.0 h.
42:07 Growth and Motor Development 2.0 h.
42:08 Measurement; and selection of athletic education. Required fall semester. Offered fall and spring semesters. Prerequisite: 42:11:1 T. Same as 75:1.
42:73 Methods and Materials in Elementary School Physical Education 3.0 h.
42:75 Methods and curriculum planning for physical education. An overview of elementary school physical education, Officer spring semester. Prerequisite: 42:11:1 or 75:1.
42:84 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
42:86 Dance 3.0 h.
Physics Therapy

See "Division of Associated Medical Sciences" in the "College of Medicine" section of the Catalog.

Physician's Assistant Program

See "Division of Associated Medical Sciences" in the "College of Medicine" section of the Catalog.

Physics and Astronomy

Department head: James A. Van Allen
Assistant head and undergraduate advisor: Edward B. Vader

The Department of Physics and Astronomy provides comprehensive and rigorous instruction in all basic aspects of these subjects. In addition, it provides research facilities and guidance for individual scholarly work at an advanced level in selected specialties.

Total departmental enrollments are typically 1,500 student-registrations during each semester of the academic year and 130 during the summer session. All courses and advanced laboratories are taught by full-time members of the faculty. Senior members of the faculty teach the elementary courses and supervise the associated laboratories.

Beyond the elementary level, typical course enrollments are 20, and there is ample opportunity for individual work. Special introductory courses having similar enrollments are offered for majors in physics and for others with special interest in the subject. There are about 60 undergraduate majors—25 of whom are honors students—and 35 graduate students in physics or astronomy.

About 40 percent of the graduates with bachelor's degrees pursue advanced study. Others find positions in secondary school teaching and in government and industrial laboratories, or use their physics training as the basis for a career in another field.

Graduates of The University of Iowa with M.S. or Ph.D. degrees in physics or astronomy continue to find satisfactory employment in universities, colleges, and research laboratories in government and in industry, despite a recent national shrinkage in such opportunities.

Undergraduate Major in Physics

The Bachelor of Science program is designed to serve either as preparation for graduate study in physics and related sciences, or as preparation for employment in industry.

The Bachelor of Arts program is designed for students who wish to gain a considerable knowledge of physics but who do not plan a research-oriented career in physics. This degree program can be useful to those planning careers in medicine, law, science-related administration, business or technical writing, or secondary-school science teaching. The B.A. program requires fewer courses in physics and mathematics than the B.S. program, and must provides for a wider choice of electives.

Bachelor of Science

The following courses or their equivalents are required for the Bachelor of Science degree with a major in physics:

- 23M:25-26 Calculus I-II
- 23M:35-36 Engineering Calculus I-II
- 22:9:12-18 Introductory Physics I-II
- 22:11-12 College Physics I-II
- 22:19 Introductory Physics III
- 22:16 Statistical Physics
- 22:12 Electromagnetics
- 22:53-55 Engineering Calculus
Undergraduate Major in Astronomy

Astronomy includes the subdisciplines of astrophysics, classical astronomy, and space astronomy. A balanced and integrated program of astrophysics, physics, and mathematics courses is required for the Bachelor of Arts degree in astronomy. The purpose of this program is to prepare the student for a career or advanced study in astrophysics, radio astronomy, or space astronomy.

The following courses or their equivalents are required for the Bachelor of Arts degree with a major in astronomy:

22M/22-26 Calculus I-II 8 s.h.
and
22M/27 Introduction to Linear Algebra 4 s.h.
and
22M/28 Calculus III 4 s.h.
or
22M/35-36 Engineering Calculus I-II 12 s.h.
and
22M/38 Differential Equations and Linear Algebra 4 s.h.

29/17-18 Introductory Physics I-II 12 s.h.
29/61-62 General Astronomy 8 s.h.
29/115 Intermediate Mechanics 3 s.h.
29/116 Introductory Quantum Mechanics 3 s.h.
29/119-120 Introduction to Astrophysics I-II 6 s.h.
29/129-130 Electricity and Magnetism 8 s.h.
29/132 Intermediate Laboratory (two semesters) 4 s.h.
29/137 Astronomical Laboratory 2 s.h.
29/191 Atomic Physics 3 s.h.

Undergraduate majors in astronomy who plan to pursue graduate study in astrophysics are advised to go beyond the minimum requirements listed above to the greatest feasible extent, and have:

29/117 Optics 3 s.h.
29/118 Statistical Physics 3 s.h.
29/171-172 Mathematical Methods of Physics 6 s.h.

A program of courses suitable for a minor in physics or astronomy for baccalaureate candidates can be put together out of upper level courses offered for undergraduate and graduate. A few of courses approved for credit toward a minor is available in the department office.

For general requirements of the College of Liberal Arts, see the "College of Liberal Arts" section of the Catalog.

Honors

Selected junior and senior majors may take six to eight semester hours of 29/28 Honors Seminar and conduct an investigation with the guidance of a faculty member as part of their program for the Bachelor of Arts or Bachelor of Science with honors in physics or astronomy.

Graduate Program

Two advanced degrees are offered in physics, the Master of Science (with or without thesis) and the Doctor of Philosophy, and one in astronomy, the Master of Science (with or without thesis). A student who wishes to pursue a program in astronomy beyond the M.S. level may qualify for a Doctor of Philosophy degree in physics with specialization and dissertation in astronomy or astrophysics.

An M.S. degree is not prerequisite to the Ph.D.

The Department of Physics and Astronomy cooperates in interdisciplinary doctoral programs with the Program in Applied Mathematical Sciences (see the "Graduate College" section of the Catalog).

An interdepartmental program leading in the M.S. and Ph.D. degrees in chemical physics is also available.

Each entering graduate student is assigned to a faculty adviser who will assist in preparing a plan of study and in guiding the student's progress. A graduate student becomes a candidate for an advanced degree in physics or astronomy only after passing a qualifying examination in all principal areas of the subject at the level of advanced undergraduate work. The examination is given during the first week of the second semester each year and must be taken by first-year graduate students. After a student has selected a research specialty, the appropriate thesis or essay adviser becomes the candidate's general adviser and the chair of the final examination committee.

Master of Science in Physics

The M.S. degree in physics is offered with thesis or without thesis. Either degree may be an intermediate step toward a Ph.D. degree, or a terminal degree. The final examination in either case is an oral one, 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 and a thesis based on an original experimental or theoretical investigation by the candidate. No more than 6 of the minimal 30 semester hours may be taken from research (29/261 Research: Physics).

The program for the M.S. degree without thesis requires 30 semester hours of graduate work, an independent study of the literature on a chosen topic, and the preparation of a critical essay on that topic. No more than 4 of the minimal 30 semester hours may be for the critical essay (29/320 Special 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, engineering, etc.

The candidate for either of the M.S. degrees must have satisfactorily completed the following courses or their equivalents as an undergraduate or a graduate:

29/115 Intermediate Mechanics 3 s.h.
29/118 Introductory Quantum Mechanics 3 s.h.
29/117 Optics 3 s.h.
29/118 Statistical Physics 3 s.h.
Doctor of Philosophy in Physics

The program of study for the Ph.D. degree with a major in physics includes:

Thorough coursework in both classical and modern theoretical physics for all candidates, whether their specialized research is to be in an experimental or a theoretical area;

Comprehensive examinations:

- Participation in advanced seminars;
- Original research in experimental physics, theoretical physics, or astrophysics; and
- Preparation and defense of a written dissertation based on this work.

All candidates for the Ph.D. must take at least 27 semester hours of 200-level courses in the department, excluding 20:220, 20:281, and seminars. The following minimum program is recommended as preparation for the comprehensive examinations:

<table>
<thead>
<tr>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>20:155 Intermediate Mechanics</td>
</tr>
<tr>
<td>20:166 Introductory Quantum Mechanics</td>
</tr>
<tr>
<td>20:177 Optics</td>
</tr>
<tr>
<td>20:186 Statistical Physics</td>
</tr>
<tr>
<td>20:189-191 Introduction to Astrophysics</td>
</tr>
<tr>
<td>20:121 Solar System Astrophysics</td>
</tr>
<tr>
<td>20:190-192 Electricity and Magnetism</td>
</tr>
<tr>
<td>20:133 Advanced Laboratory</td>
</tr>
<tr>
<td>20:137 Astronomical Laboratory</td>
</tr>
<tr>
<td>20:171-172 Mathematical Methods of Physics</td>
</tr>
<tr>
<td>20:191 Atomic Physics</td>
</tr>
</tbody>
</table>

A student who intends to continue for a Ph.D. in physics with an astrophysics specialization should take the following courses as early in his or her master's program as possible:

- 20:131 Radio Astronomy | 3 s.h. |
- 20:232-232 Theoretical Astrophysics | 8 s.h. |
- 20:234 Stellar Structure and Evolution | 4 s.h. |
- 20:235 Special Topics in Astrophysics | 2 s.h. |
- 20:283 Seminar: Astrophysics | 2 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 20:171-172 Mathematical Methods of Physics. The selection of less advanced courses will depend on the adequacy of the student's preparatory graduate work; the student's choice of more advanced and specialized courses will depend on the direction in which he or her interests develop. No more than 30 of the minimal 72 semester hours may be in research and seminars.

A candidate for the Ph.D. degree will not be recommended for the degree until he or she has written the dissertation in proper form for formal publication and has submitted it, with the approval of the research adviser, to a widely distributed scientific journal for publication.

Financial Assistance

Persons qualified for graduate study are encouraged to apply for fellowships and assistantships. Inquiries should be directed to the head of the department.

Research and Facilities

The department has an excellent library and a number of well-equipped laboratories and observatories. The associated facilities of the University's Weeg Computing Center are available for research by students and staff of the department, and several other computers are available within the department. The central machine shop is fully equipped and staffed with skilled instrument makers and machinists, and there are several electronics and machine shops for the use of advanced students and the research staff.

Experimental research is conducted in astronomy (optical and radio); low energy nuclear physics; plasma physics; solid state physics; magnetic properties; solar-terrestrial, interplanetary, and planetary physics; atomic and molecular physics; low temperature physics; laser physics; and acoustics of musical instruments.

A major experimental space physics program is conducted in the department. Extensive facilities are available for the construction of equipment for satellites and spacecraft, for the reception of satellite telemetry, and for the simulated decoding and analysis of data.

An unusually versatile 60-MV Van de Graaff accelerator, which has been modified for energies up to 14 MeV, is used in studies of nuclear reactions induced by protons, helium, lithium, deuterons, and beryllium nuclei. Experiments on fundamental thermal, electrical, and magnetic properties of metals, alloys, and compounds are included in the experimental solid state program, as are surface studies of metals and semiconductors. Several experimental double plasma devices are used to study confinement, nonlinear waves, and turbulence effects in low-temperature, steady-state plasmas. A variety of laser spectroscopy and molecular beam
studies are carried out at the Iowa laser facility.

The department is well equipped for research in observational astronomy. The primary instrument, a 24-inch reflector with a scanning spectrometer, is used for stellar and cometary studies. Research programs in galactic and extragalactic radioastronomy are carried out on the 18.3-meter paraboloid reflector located at the North Liberty Radio Observatory near Iowa City. Current long-term research activities include interstellar VLB and spectral studies of OH masers. A 34-MHz Mills Cross array, one of the largest radio telescopes in the world, located at Clark Lake in California, is available for studies of the interplanetary medium.

Theoretical research is devoted to elementary particles and high-energy physics; plasma physics; astrophysics; atmospheric, space, and planetary physics; solid state physics; nuclear physics; and atomic and molecular physics.

Courses

Prerequisites and corequisites are specified as guides and may be waivered by the instructor. An elementary course may not be repeated for credit or grade points if the student has already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite. Courses 29-5, 29-8, 29-11-12, 29-17-18, 29-30, and/or 29-81-82 are accepted toward the College of Liberal Arts core requirement in the natural sciences.

Physics

Primarily for Undergraduates

29-01 General Physics

3 a.h. Three lectures per week. No laboratory. Intended primarily for students in the College of Liberal Arts but open to others; prerequisite: junior high school arithmetic. Credit is given for this course in any area.

29-02 Physical Electricity and Electronics

3 a.h. Basic principles and practical experience necessary to equip the student for work in the fields of electrical engineering, electronics, communications, television, electroacoustics, radio and TV, sound recording and reproduction, electrical control systems, and computers. Each class meeting gives practical experience, discussion, demonstration, and laboratory problems.

29-10 Basic Physics

6 a.h. Corequisite: 29-11. (Offered alternate years.)

29-11 College Physics I

4.5 a.h. 29-11 and 29-12 comprise a complete introductory course in physics for scientists, technicians, and problem work in mechanics, heat, and sound. Prerequisite or corequisite: 29-01-02 or 29-03-04.

29-12 College Physics II

4.5 a.h. 29-11 and 29-12 comprise a complete introductory course in physics for scientists, technicians, and problem work in mechanics, heat, and sound. Prerequisite or corequisite: 29-01-02 or 29-03-04.

29-15 College Physics


29-16 Introductory Quantum Mechanics

3 a.h. Corequisite: 29-11. (Offered alternate years.)

29-17 Introductory Mechanics

3 a.h. Principles and practical experience necessary to equip the student for work in the fields of electrical engineering, generation and distribution of electricity, the electronics, radio, television, and cable television. Credit is given for this course in any area.

29-18 Statistical Mechanics

3 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-30 Introductory Modern Physics

3 a.h. Corequisite: 29-11. (Offered alternate years.)

29-31 Introductory Modern Physics I

3 a.h. Mechanics, heat, and sound. Prerequisite or corequisite: 29-01-02 or 29-03-04.

29-32 Introductory Modern Physics II


29-38 Introductory Physics III


29-22 Physics of Water and Oceans

3 a.h. General properties of water, mechanical waves, underwater acoustics, optics and radiometry. Prerequisites: 29-11 and 29-12, or 29-01-02 or 29-03-04.

29-39 Introductory Modern Physics

4 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-40 Reading in Physics

1 a. One letter per week. Students who wish to work will be given assignments.

29-41 Undergraduate Seminar

1 a. Students desiring to present a selected topic in physics or astronomy under guidance of an instructor. The topic and instructor will be announced, and registration is on a first-come, first-served basis. May be repeated.

29-42 Seminar in Physics Seminar

1 a. Supervised open research project leading to write-up report and oral defense. For junior and senior physics majors or graduate students who have not previously taken a course in physics or astronomy.

For Undergraduates and Graduates

29-43 Honors Physics

4 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-44 Physics of Sound and Light

3 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-45 Physics of Sound and Light

3 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-46 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-47 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-48 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-49 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-50 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-51 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-52 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-53 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-54 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-55 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-56 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-57 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-58 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-59 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-60 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-61 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-62 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-63 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-64 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-65 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-66 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-67 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-68 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-69 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-70 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-71 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-72 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-73 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-74 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-75 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-76 Honors Physics

4.5 a.h. Corequisites: 29-11 and 29-12. (Offered alternate years.)

29-77 Honors Physics
Undergraduate Programs

Bachelor of Arts
A student seeking the B.A. degree with a major in political science must complete 27 semester hours of coursework in political science and 12 in one of these departments: economics, geography, history, journalism, philosophy, psychology, sociology, and anthropology.

The coursework in political science must include:

- 30:1 Introduction to American Politics
- 30:2 Introduction to Politics

The department also has a program leading to the B.A. degree with honors. It is open to a limited number of students with a minimum general grade-point average of 3.0 on at least 12 semester hours of work in political science. To graduate with honors, the student must maintain a minimum grade-point average in all political science courses taken at The University of Iowa, and in all courses in the related departmental areas of concentration.

Bachelor of Science
Major requirements for the B.S. in political science are the same as for the B.A., except that two semesters of college-level courses (or the equivalent) in a foreign language are required, and the student must take three semesters of mathematics or statistics. Courses recommended for the mathematics/statistics requirement:

- 26 Calculus I
- 225:130 Introduction to Statistical Methods
- 225:140 Intermediate Statistical Methods

Other courses may be used, with the written approval of the director of undergraduate studies in political science.

Teaching Major

Undergraduates planning to teach in the social sciences with an emphasis on political science must meet these requirements:

- Same political science course requirements as for the B.A. and B.S., except that the minimum requirement in political science courses numbered above 100 is 8 semester hours.
- Twelve semester hours of courses in each of two of these areas: American history, world history, economics, geography, and sociology. Twenty semester hours are required for psychology as a related field.
- Completion of the sequence of professional education courses leading to certification (see the "College of Education" section of the Catalog).

Honor's

The department also has a program leading to the B.A. degree with honors. It is open to a limited number of students with a minimum general grade-point average of 3.0 on at least 12 semester hours of work in political science. To graduate with honors, the student must maintain at least a 3.2 grade-point average in all political science courses taken at The University of Iowa, and in all courses in the related departmental areas of concentration.

Political Science

Department chair: R. Robert Boyse


Political Science offers B.A., B.S., M.A. Ph.D.
prepare for careers in government service, public affairs, or civic education teaching in secondary schools or junior and community colleges. The general M.A. degree is normally pursued by persons who wish a terminal degree objective is the Ph.D.

Master of Arts in Public Affairs

Although all students in the public affairs program must take the core courses indicated in the schedule below, elective opportunities make possible several areas of specialization. Students interested in public administration may use their elective credit to take further courses in public administration, administrative theory and behavior, or quantitative analysis. Students interested in public policy analysis may use their elective credit to take courses in quantitative research methods, and courses dealing with substantive policy fields such as economic policy, health policy, natural resources policy, or social policy.

The M.A. in public affairs is a two-year program. The student must complete at least 36 hours of coursework with at least a 3.0 grade-point average, and must pass all written examinations. Although the schedule suggested below implies completion within a year, the program is sufficiently flexible to accommodate students who may require additional time to meet all degree requirements.

Fall Semester
30:229 Administrative Theory and Public Policy 3 s.h.
8E:118 Economics of the Government Sector 3 s.h.
Electives 9 s.h.

Spring Semester
30:222 American Public Policies 4 s.h.
30:228 Public Problems in Public Administration and Policy 4 s.h.
Electives 4 s.h.

Summer Session
30:121 Urban Administration 3 s.h.
or 30:362 Practicum in Public Policy and Administration 3 s.h.

Effective 3 s.h.
Total 36 s.h.

Students are expected to choose at least one elective numbered 300 or above. In addition to a wide range of options in political science, the student may choose electives including economics, business administration, urban and regional planning, sociology, geography, higher education, social studies education, civil engineering, and law.

Master of Arts with Thesis

Except for the M.A. in public affairs and the M.A. offered under a joint program with the College of Law (see the "College of Law" section of the Catalog), the department normally offers the M.A. only as a preliminary step toward the Ph.D.

The student usually obtains the M.A. degree by completing at least 30 semester hours with a grade-point average of at least 3.0, submitting a thesis, and passing a final oral examination. No more than 8 semester hours of credit for thesis preparation will be counted toward the 30-semester-hour minimum requirement for the general M.A.

The final oral examination covers both thesis and coursework.

M.A. without Thesis

If a student's first-year evaluation committee finds that his or her coursework and research papers provide sufficient evidence of the student's capability, the committee may recommend that he or she be allowed to proceed with a doctoral program without writing a thesis. The requirements for the M.A. without thesis include completion of at least 30 semester hours of graduate work with a grade-point average of at least 3.0, and review of the student's record by a final examination committee, which may waive the final oral examination. The same requirements apply where a first-year evaluation committee finds the quality of a student's work inadequate for recommending continuation toward the Ph.D. but adequate for proceeding with the master's program, and recommends that the student be permitted to seek the nonthesis M.A. as a terminal degree.

Doctor of Philosophy

The student seeking a Ph.D. degree must demonstrate command of one foreign language or other tool of research, selected with the approval of the doctoral committee. If the tool is other than a foreign language, the student's doctoral committee will specify the criteria to determine whether the requirement has been met. The tool requirement must be met before the student takes the comprehensive examination.

Comprehensive Examination

Students must take the comprehensive examination after completing the eighth semester of residence, or in the first examination period following their attainment of 45 hours of graduate credit, whichever comes first.

Candidates for the Ph.D. take written examinations in three of these areas:

American politics
Comparative politics
International politics
Political theory
Public policy and administration
Philosophy and methods of political research

Before taking the written examinations, candidates must present a written dissertation proposal, which must explain and defend the proposal in an oral examination, which may also deal with any matter relevant to the written examinations.

Each Ph.D. candidate in political science must take at least one semester of special supervised training in teaching and in research. This instruction is normally given given in the form of 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 admission and degree requirements, see
the "Graduate College" section of the Catalog.

Facilities

The Laboratory for Political Research provides logistical and technical support for undergraduate and graduate teaching and research programs undertaken by the Department of Political Science. The laboratory assists faculty members in utilizing quantitative data and the computer for their undergraduate instruction. This assistance is provided to social scientists at The University of Iowa and at 12 other institutions which make up the Iowa Regional Computer Network. The laboratory is an integral part of graduate education in the department, and is involved at every level of advanced study.

The Social Science Data Archive holds more than 450 data collections, and the laboratory is a user contact site for data from the 1970 United States Census. The facilities of the laboratory include a card-reader/line-printer/telex communications terminal, three card punchers, and a counter-store. The laboratory also administers the College of Liberal Arts Mini-Computer Terminal Center for the social sciences, which houses terminals for access to one of the University's Hewlett-Packard 2020F educational computers.

The Comparative Legislative Research Center of the Department of Political Science is an instrument to promote comparative studies of legislative institutions and behavior in a wide variety of political systems. The main activities of the center include bibliographic and archival work, data collection, collaborative research with foreign scholars, training of students in legislative research, conferences and seminars, and publication of research. The center also publishes the Legislative Studies Quarterly.

Courses

30220 Cooperative Education Training Assignment 6 h.
30222 Cooperative Education Training Assignment 6 h.
30230 Cooperative Education Training Assignment 6 h.
30240 Cooperative Education Training Assignment 6 h.
30250 Cooperative Education Training Assignment 6 h.
30260 Cooperative Education Training Assignment 6 h.
30270 Cooperative Education Training Assignment 6 h.
30280 Cooperative Education Training Assignment 6 h.
30290 Cooperative Education Training Assignment 6 h.
30300 Cooperative Education Training Assignment 6 h.
30310 Introduction to Political Science 3 h.
30320 Introduction to American Politics 3 h.
30330 Introduction to International Relations 3 h.
30340 Introduction to Public Policy 3 h.
30350 Introduction to Public Administration 3 h.
30360 Introduction to Public Opinion 3 h.
30370 Introduction to Political Behavior 3 h.
30380 Introduction to Political Parties 3 h.
30390 Introduction to Public Administration 3 h.
30400 Introduction to Political Theory 3 h.
30410 Introduction to Political Science 3 h.
30420 Introduction to Political Science 3 h.
30430 Introduction to Political Science 3 h.
30440 Introduction to Political Science 3 h.
30450 Introduction to Political Science 3 h.
30460 Introduction to Political Science 3 h.
30470 Introduction to Political Science 3 h.
30480 Introduction to Political Science 3 h.
30490 Introduction to Political Science 3 h.
30500 Introduction to Political Science 3 h.
30510 Introduction to Political Science 3 h.
30520 Introduction to Political Science 3 h.
30530 Introduction to Political Science 3 h.
30540 Introduction to Political Science 3 h.
30550 Introduction to Political Science 3 h.
30560 Introduction to Political Science 3 h.
30570 Introduction to Political Science 3 h.
30580 Introduction to Political Science 3 h.
30590 Introduction to Political Science 3 h.
30600 Introduction to Political Science 3 h.
30610 Introduction to Political Science 3 h.
30620 Introduction to Political Science 3 h.
30630 Introduction to Political Science 3 h.
30640 Introduction to Political Science 3 h.
30650 Introduction to Political Science 3 h.
30660 Introduction to Political Science 3 h.
30670 Introduction to Political Science 3 h.
30680 Introduction to Political Science 3 h.
30690 Introduction to Political Science 3 h.
30700 Introduction to Political Science 3 h.
30710 Introduction to Political Science 3 h.
30720 Introduction to Political Science 3 h.
30730 Introduction to Political Science 3 h.
30740 Introduction to Political Science 3 h.
30750 Introduction to Political Science 3 h.
30760 Introduction to Political Science 3 h.
30770 Introduction to Political Science 3 h.
30780 Introduction to Political Science 3 h.
30790 Introduction to Political Science 3 h.
30800 Introduction to Political Science 3 h.
30810 Introduction to Political Science 3 h.
30820 Introduction to Political Science 3 h.
30830 Introduction to Political Science 3 h.
30840 Introduction to Political Science 3 h.
30850 Introduction to Political Science 3 h.
30860 Introduction to Political Science 3 h.
30870 Introduction to Political Science 3 h.
30880 Introduction to Political Science 3 h.
30890 Introduction to Political Science 3 h.
30900 Introduction to Political Science 3 h.
30910 Introduction to Political Science 3 h.
30920 Introduction to Political Science 3 h.
30930 Introduction to Political Science 3 h.
30940 Introduction to Political Science 3 h.
30950 Introduction to Political Science 3 h.
30960 Introduction to Political Science 3 h.
30970 Introduction to Political Science 3 h.
30980 Introduction to Political Science 3 h.
30990 Introduction to Political Science 3 h.
31000 Introduction to Political Science 3 h.
31010 Introduction to Political Science 3 h.
31020 Introduction to Political Science 3 h.
31030 Introduction to Political Science 3 h.
31040 Introduction to Political Science 3 h.
31050 Introduction to Political Science 3 h.
31060 Introduction to Political Science 3 h.
31070 Introduction to Political Science 3 h.
31080 Introduction to Political Science 3 h.
31090 Introduction to Political Science 3 h.
31100 Introduction to Political Science 3 h.
31110 Introduction to Political Science 3 h.
31120 Introduction to Political Science 3 h.
31130 Introduction to Political Science 3 h.
31140 Introduction to Political Science 3 h.
31150 Introduction to Political Science 3 h.
31160 Introduction to Political Science 3 h.
31170 Introduction to Political Science 3 h.
31180 Introduction to Political Science 3 h.
31190 Introduction to Political Science 3 h.
31200 Introduction to Political Science 3 h.
31210 Introduction to Political Science 3 h.
31220 Introduction to Political Science 3 h.
31230 Introduction to Political Science 3 h.
31240 Introduction to Political Science 3 h.
31250 Introduction to Political Science 3 h.
31260 Introduction to Political Science 3 h.
31270 Introduction to Political Science 3 h.
31280 Introduction to Political Science 3 h.
Psychology/LIBERAL ARTS

Joining to their undergraduate teaching the excitement that such vitality engenders. Minor opportunities exist for interested and capable students to participate in some of the research projects being carried on in the department.

The department offers a minor program which should be attractive to students from a variety of disciplines. At least 9 of the 15 semester hours for a minor in psychology must be completed in this department. Courses in at least three of the five areas identified below must be included in a minor program. Departmental advisory can assist students in identifying sequences of courses for a minor which appropriately complement the student's major.

Bachelor of Arts

The student must satisfy the general College of Liberal Arts requirements for the B.A. degree and must complete at least 25 semester hours in psychology. At least 15 semester hours of the major must be completed in this department.

The B.A. program must include: 31:1 Elementary Psychology; or 41:3 General Psychology, or equivalent; 31:43 Evaluating Psychological Research, or equivalent; one area elective course or two courses from the five area groupings given below.

The 31:43 requirement may be satisfied by a combination of 31:43 Introduction to Statistical Methods and 31:120 Experimental Psychology I, or equivalents. This alternative is strongly recommended to students in the B.A. program who plan to pursue graduate work in psychology or a related area.

Bachelor of Science

The student must satisfy the general College of Liberal Arts requirements for the B.S. degree and must complete at least 32 semester hours of course credit in psychology. At least 15 semester hours of the major must be completed in this department.

The B.S. program must include the following course, or equivalent; 31:1 Elementary Psychology or 31:3 General Psychology; 31:143 Introduction to Statistical Methods; 31:120 Experimental Psychology I; 31:127 Experimental Psychology II; and one elective course from each of four or the five area groupings given below, with at least three of these four area electives being 100-level courses.

Candidates for the B.S. degree in psychology must satisfy the College of Liberal Arts natural science core requirement with two semesters of chemistry, or two semesters of physics, or one semester each of chemistry and physics, or one semester each of inorganic and organic chemistry. The student should consult with his or her adviser concerning specific courses which will satisfy this requirement.

Students preparing for the B.S. must also complete either one semester of calculus and two semesters of one foreign language, or two semesters of mathematics through analytic geometry and four semesters of one foreign language.

The course in natural science and mathematics required for the B.S. degree cannot be taken pass-fail.

Area Electives

Biopsychology and Physiological Psychology
31:50 Comparative Psychology and Ethology 3 s.h.
31:123 Psychology of Learning 3 s.h.
31:125 Brain Function and Learning 3 s.h.
31:238 Physiological Psychology and Psychophysiology 3 s.h.
31:129 Introduction to Behavioral Pharmacology 3 s.h.
31:129 Bilingual Aspects of Behavior 3 s.h.
31:135 Operant Behavior Analysis 3 s.h.

Clinical Psychology
31:13 Introduction to Clinical Psychology 3 s.h.
31:125 Personality 3 s.h.
31:161 Current Theories of Abnormality, or 3 s.h.
31:157 Clinical Psychology or 3 s.h.
31:158 Abnormal Behavior Modification 3 s.h.

Behavior Modification 3 s.h.

Child and Developmental Psychology
31:14 Introduction to Child Psychology 3 s.h.
31:12 Development of Social Judgment 3 s.h.
31:14 Cognitive Development of Children 3 s.h.
31:166 Psychology of Sex Differences 3 s.h.
31:167 Individual Differences in Developmental Psychology 3 s.h.
31:153 Psychology of Language 3 s.h.

General Experimental Psychology
31:16 Introduction to Mental Processes 3 s.h.
31:102 Psychology as a Science 2 s.h.
31:115 Learning and Motivation in Children 3 s.h.
31:113 Psychology of Language 3 s.h.
31:119 Human Memory, Learning, and Conceptual Processes 3 s.h.
31:132 Motivation 3 s.h.
31:133 Perception 3 s.h.

Social Psychology
31:15 Introduction to Social Psychology 3 s.h.
31:103 Development of Children’s Social Behavior 3 s.h.
31:106 Attitude Change 3 s.h.
31:125 Small Group Processes 3 s.h.
*Only one of these courses can be used to satisfy all area requirements.

Honors

The department has an active honors program open to majors with at least a 3.5 grade-point average in psychology courses and 3.0 overall. The program includes research seminars and individual research collaboration with faculty members. Students ordinarily are selected to participate in the department’s 31:95 Honors Seminar in Psychology during the spring semester of the junior year. Interested majors should contact the department honors adviser early in the junior year.

Graduate Program

A graduate program in psychology is designed to provide comprehensive training leading to the Ph.D. degree with emphasis in one of the following areas:
animal learning and biopsychology, child and development psychology, clinical psychology, general experimental psychology, social psychology, and social psychology. The program is designed to provide both general training and specialty training, with sufficient flexibility to encompass a wide spectrum of student interests.

The primary purpose of the program is to produce graduates who are deeply committed to the study of behavior, familiar with fundamental knowledge about behavioral processes, thoroughly trained in the methods and techniques for careful investigation of basic and applied problems, and determined to make significant contributions to the discipline of psychology and to society generally.

The most appropriate jobs for graduates of this program are in academic, governmental, business, or private institutions which provide opportunities for continuing analysis and investigation of fundamental questions about behavior, for teaching about research results and methodologies, and for application of psychological knowledge and techniques to the solution of important practical problems. Prospective applicants should understand that the number of such positions is sharply limited and the competition for available openings is intense.

The graduate program in psychology is designed as a four-year program leading to the Ph.D. degree. Students in the clinical area ordinarily have an additional off-campus internship year. A student entering with a master’s degree from another institution will complete at least two additional years in this department, depending on the nature and extent of previous research activity.

Master of Arts with Thesis

The Master of Arts degree with thesis in psychology is required for all students who intend to earn the Ph.D. in this department, as in a few special cases, this degree may be the primary objective for an individual pursuing a joint program of graduate work in another discipline, e.g., law, medicine, or special education. This degree is granted after satisfactory completion of at least 30 semester hours of graduate credit, including requirements specified by the department; preparation of an acceptable scholarly thesis; and successful oral defense of the thesis. Typically, work for this degree should be completed after four semesters in the department.

Master of Arts without Thesis

The Master of Arts degree without thesis is also available and ordinarily is the degree taken by students who decide to terminate their work in this department after four semesters. The M.A. without thesis requires satisfactory completion of at least 30 semester hours of graduate credit, including courses required by the department, and successfully perform an oral examination of a written and/or oral examination covering the student’s area of specialization.

During the first three semesters, each incoming graduate student follows a curriculum involving both required and elective courses designed to develop understanding of the content, theory, research methods, and investigative techniques appropriate to the specialty area. All students also engage in a supervised research project during each of these semesters.

By the end of the third semester, each incoming student is expected to have demonstrated competence in coursework and in research practice, and to have participated effectively in the teaching, research, and service functions of the department. In addition, each student intending to proceed toward the Ph.D. is expected to have made substantial progress in planning for the master’s research project. A faculty-wide review of each student’s progress is conducted at this point in the student’s program.

Doctor of Philosophy

The Ph.D. degree in this department requires satisfactory completion of at least 72 semester hours of graduate credit, including at least 33 in the department. The student must satisfy requirements in statistics and in writing, and is expected to take sufficient work outside the specialty area to develop a reasonably broad background in the discipline of psychology as a whole.

The student is encouraged to become familiar with the history and philosophy of psychology. The nature of these requirements and their placement within the graduate program varies somewhat among the training areas, and depends also on the individual student’s background and interests.

Formal advancement of a student to Ph.D. candidacy follows a review conducted after the fifth semester. By this time the student must have completed and defended the master’s thesis, demonstrated an ability to approach psychological problems in an independent and creative manner, and passed a comprehensive examination. During the latter part of the third year and the first part of the fourth year, and while continuing selected coursework and advanced seminars, the student develops a prospectus for the dissertation research. Following approval of the prospectus, work toward the Ph.D. proceeds with the conflict of the doctoral study, preparation of the dissertation and, finally, the Ph.D. final examination, which is an oral defense of the dissertation.

More specific information about training area programs, degree requirements, policies and procedures for evaluation of student progress and performance, and other matters of concern to graduate students, is set forth in the department’s Graduate Handbook, which is provided to each student at the time of initial registration.

Graduate Specialty Areas

Animal Learning and Biopsychology

The focus of the program in animal learning and biopsychology is on the analysis of learning and motivation, primarily in nonhuman subjects, through the application of behavioral and biological principles. Students in this program will have the opportunity to learn the most modern analytical and laboratory methods in computer-assisted experimentation, electronic instrumentation, learning and histological techniques, and biochemical assay procedures. Special faculty...
aesthetics are in the fields of classical and open-ended conditioning, comparative psychology, motivation, neuropharmacology, neuroendocrinology, and neuroendocrine.

Child and Developmental Psychology
The child and developmental psychology program provides opportunities for students to acquire a general understanding of the child-developmental field, as well as a focused understanding of developmental trends within a specific field. Specialized topics include sensory and perceptual processes, verbal processes and memory, learning and thinking, social processes, and psychopathology.

Social Psychology
The social psychology program offers specialized training in three subareas: social influences on behavior, attitude formation and change, and the psychology of groups. The list of these includes each phenomenon as social learning, imitation, conformity, social facilitation, behavioral contagion, and social reinforcement. The second includes attitude acquisition, cognitive consistency, and the analysis of commitment, persuasion, and attribution. Under the third subarea, one might focus on group versus individual performance, on interdependence, or on topics in the area of social interaction.

In addition to thorough training in the basic disciplines of experimental psychology, statistical analysis, computer processing, etc., the student in the social area has ample opportunity to handle instrumented observation laboratories and to develop skill in the conduct of field investigations.

Clinical Psychology
The clinical program strongly emphasizes an empirical approach to the study of psychopathology. It is designed for students who are primarily interested in developing scholarly understanding of psychopathologies and acquiring research skills necessary to the systematic investigation of such phenomena.

Recognizing that students must become familiar with clinical material and competent in clinical skills, the department closely integrates practical experience in its Carl E. Sesame Psychology Clinic with coursework in the content, theory, and research methods of psychology, and with supervised research experience. Students may develop special competence in such areas as psychopathology, aggression, psychopathy, behavior therapy, schizophrenic, psychodiagnosis, depression, and clinical-developmental psychology.

A special training program provided jointly by faculty members from the clinical area and from the child and developmental area is available for students with interests in clinical aspects of childrenhood and development. Similar joint programs combining clinical training, with substantial work in one of the department's other graduate training areas can be arranged.

Advanced students have opportunities for gains from additional practicum experience through placements in clinical facilities maintained by local, state, and university agencies. Students ordinarily begin a one-year internship at an accredited clinical facility either before or after completion of the four-year academic program. The clinical training program is fully approved by the American Psychological Association.

General Experimental Psychology
The general experimental program focuses entirely on the study of human behavior. These major subareas are represented: cognitive processes, sensation and perception, and experimental child psychology. Students specializing in cognitive processes acquire expertise in areas such as information processing and decision making, learning and memory, and concept formation and language behavior. Students with interests in sensation and perception may concentrate on visual perception, auditory processes, or mathematical models in perception and psychophysics. Students in experimental child psychology specialize in areas such as discrimination learning, problem solving, and transfer of training.

Research in the general experimental program develops sophistication about laboratory techniques, computer controlled data acquisition and reduction systems, and electronic instrumentation. In addition, they acquire a solid background in statistical techniques and in the historical and contemporary theoretical framework of psychology.

Facilities
The department's facilities for graduate training and research are among the finest in the country. The Kenneth W. Speice Laboratories of Psychology and adjoining space in East Hall, include three seminar rooms, seminar facilities, a psychology laboratory, a number of small laboratory rooms, and computerized data acquisition and reduction systems, observation rooms with remote audiovisual control and recording equipment, soundproof chambers, closed-circuit TV systems, electrophysiological recording rooms, conditioning laboratories, the Carl E. Sesame Psychology Clinic, and well-equipped electronic, mechanical, and woodworking shops. Specialized equipment research facilities are available for use in studies conducted at schools and other locations.

The University's Wadsworth-Corning IBM 370-158 and four PRIME 760 computers. Students and faculty have ready access to these systems through terminals in the department and through a satellite computer facility in East Hall. Office space for graduate students and faculty is provided in East Hall, and the psychology-education branch of the University's main library is conveniently located in the west wing of East Hall.

The research and teaching activities of the department are greatly benefited by the facilities and staff of other university and local agencies, including the University's Early Childhood Education Center, the University's General, Children's, and Psychiatric Hospitals, the Veterans Administration Hospital, the University Counseling Center, the Child Development Clinic, the Speech
and Hearing Clinic, and the Institute of Urban and Regional Research.

Financial Assistance
All students admitted to the graduate training program in psychology automatically are considered for the basis of merit. For financial support, as may be available in the form of teaching assistantships, research assistantships, scholarships, tuition scholarships, etc. No separate application for financial aid is required.

Graduate Admission
As is evident from the preceding paragraphs, the graduate program in psychology is geared primarily to students seeking the Ph.D. degree; all applicants are considered on this basis. A very small number of qualified applicants interested in advanced work only through the M.A. level may be admitted, primarily those who intend to pursue a joint graduate program involving psychology and another discipline or profession. Joint programs must be especially designed and the individual must apply to and be accepted by each program.

Applications may be submitted at any time but are considered only once each year—between February 15 and March 15—for admission the following fall. Admission decisions are based on a careful consideration of prior academic performance, publication record, and references, scores on the verbal and quantitative sections of the Graduate Record Examination, and the applicant's statement of reasons for pursuing advanced work in psychology. Initial review of admission materials is done by faculty members in the specialty area in which the applicant expresses primary interest.

An undergraduate major in psychology, including a laboratory course in experimental psychology, a course in statistics, and additional work in the natural sciences and mathematics, is considered but is not required. Students who have not had such a background but are strongly qualified in other areas may be admitted, but will be expected to rectify deficiencies through special coursework or independent study prior to enrolling in 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 significant single length of research and scholarly writing. This material and the record of previous graduate coursework 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 substantive 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, and there are no foreign language requirements for either the M.A. or the Ph.D. degree in psychology.

Special Faculty Strengths
National rankings of graduate programs in psychology consistently have shown this department to be among the top 20 in the nation. The weekly recognized commitment of the faculty to research and scholarship is manifested in the publication of some 150 articles, books, and chapters each year, and in the fact that many of the faculty members are, or have been, active as editors, associate editors, and regular contributing editors for major psychological journals.

Courses For Undergraduates
Either 311:1 or 311:3 is prerequisite to all other courses in psychology except 311:17 and 311:143.

Subject to this general prerequisite and to specific prerequisites for particular areas, all psychology courses are open to freshmen. Either 311:1 or 311:3, but not both, may be taken toward the College of Liberal Arts social science core requirement, and only one may be applied toward one major in psychology.

311: Elementary Psychology 3-4 hr.

Psychology as a behavioral science; students are required to become familiar with major areas of psychology through participation in demonstrative demonstrations and actual research studies; in theory and research papers of research reports. May not be taken pass-fail.

311:2 Elementary Psychology 3-4 hr.

Same as 311; specifically designed for approach to various aspects of human behavior, with emphasis on study of development of behavior and methods of correlating data for b.S. majors in psychology. Not open to all human science majors, and the knowledge and skills in psychology for students with permission or instructor.

311:5 Introduction to Clinical Psychology 3 hr.

Survey of careers and technical developments in clinical psychology; consideration of contemporary methods in assessment and treatment of psychological disorders.

311:6 Introduction to Abnormal Psychology 3 hr.

Survey of recent research and theory in biological, psychological, cognitive, and social aspects of development from infancy through adulthood.

311:7 Introduction to Social Psychology 3 hr.

Research relating behavior of individual humans to factors; in social processes; associations and interactions, attitudes, activities, and concepts; social processes, social interactions; contributions by philosophers and anthropologists.

311:8 Introduction to Social Process 3 hr.

Survey of the study of individual human support of individual, interaction, memory, language, learning, motivation, problem solving, decision making, and thought, combined with information processing; development of behavior, society, and social institutions, with emphasis on stresses and stress reduction.

311:13 Educational Psychology and Measurement 3 hr.

Same as 311:2.

311:15 Psychology in Business and Industry 3 hr.

Applications of psychology to problems in the world of work; analysis of personal selection, testing, training, and performance.

311:16 Personality Psychological Research 2-3 hr.

Current and potential methods of measurement of behavioral variables contributed to behavior and applied to personality; research methodology, including sampling, measurement, data collection, and analysis.

311:17 Personality Measurement 2-3 hr.

Current and potential methods of measuring personality variables; contributing to behavior and applied to personality; research methodology, including sampling, measurement, data collection, and analysis.

311:18 Language and Personality 2-3 hr.

Influence of language, structure, function, form, and performance; includes linguistic studies, communication and measurement of personality variables, cross-cultural, language, and sociolinguistic change.

311:19 Language and Culture 2-3 hr.

Influence of language, structure, function, form, and performance; includes linguistic studies, communication and measurement of personality variables, cross-cultural, language, and sociolinguistic change.

311:20 Social Foundations in Psychology 3 hr.

Small group in this field is similar research program, including selection, training, learning, memory, development, research, analysis, and evaluation. Seminars or discussion of major problems; emphasis on communication and observation of human behavior. Pass-fail grading.

315: Special Topics and Projects 1-6 hr. for undergraduates majoring in psychology, Pass-grading; approved credit number of department chair, Pass-fail grading.

324:5 Modern Society in Psychology 3 hr.

Laws, values, attitudes, and concepts in a variety of societies, research in psychology, applied to the study of major for human projects. Pass-fail grading.

344:1 Social Psychology 2-3 hr.

Social psychology as an approach to the study of social behavior; students are required to become familiar with major areas of psychology through participation in demonstrative demonstrations and actual research studies; in theory and research papers of research reports. May not be taken pass-fail.
For Undergraduates and Graduates

511/12 Social Psychology 3 x h
- Recent research and review of social psychology, with emphasis on laboratory study of social behavior, critical evaluation of contemporary theories and methodologies.

511/12 Psychology as a Science 3 x h
- Analysis of the scope of the concepts, laws, and theories of modern psychology, with discussion of the role of research and hypothesis, exercises in evaluating psychological research. Preparatory, junior or senior standing or consent of instructor.

511/12 Development of Children's Social Behavior 3 x h
- Survey processes affecting children's responses to the social environment; attachment, dependence, social-environmental, internalization, social, emotional development.

511/12 Personality 3 x h
- Definitions, correlates, consequences of dispositional tendencies and personality development.

511/12 Adult Change 3 x h
- Current psychological approaches to attitude change; laboratory and field methods of research; consideration of basic processes of change within personality development.

511/12 Emotional Stress 3 x h
- Psychological understanding of the stress response to life events; appraisal, coping, adaptation, and energized response to stress.

511/12 General Process 3 x h
- Analysis of major processes in health psychology. Pathways to cause, prevention, and treatment of major medical problems. Preparatory: junior or senior standing or consent of instructor.

511/12 Pathology of Aggression 3 x h
- Examination of major theories and concepts on aggression behavior in human and animal species. Preparatory: junior or senior standing or consent of instructor.

511/12 Learning in Children 3 x h
- Survey of research and teaching on children's learning, motivation, memory, and transfer of training, and methods of instruction.

511/12 Child Development 3 x h
- Study of development. Same as PS 370.

511/12 Development of Social Judgment 3 x h
- Considerations of cognitive theories of the development of aggression in children and adolescents. Preparatory: junior or senior standing or consent of instructor.

511/12 Methodology 3 x h

511/12 Cognitive Development of Children 3 x h
- Developmental research and theory concerning cognitive, perceptual, and motor processes of children.

511/12 Educational Psychology 3 x h
- Focus on PS 371.

511/12 Psychology of the Different (Terms 1 and 2) 3 x h
- Topics in the nature of sex differences in behavior, possible causes of these differences, and the development of sex roles. Preparatory: junior or senior standing or consent of instructor. Note: offered in the fall term.

511/12 Exceptional Children 3 x h
- Focus on PS 390.

511/12 Family 3 x h
- Psychodynamic development of the unit, including perception, projection, and object-relations.

511/12 Human Memory, Learning, and Cognition 3 x h
- Introduction to contemporary psychological theory and research on human memory, attention, perception, sensation, learning, and social cognition. Preparatory: junior or senior standing or consent of instructor.

511/12 Developmental Psychology I 3 x h
- Focus on PS 100.

511/12 Developmental Psychology II 3 x h
- Focus on PS 101.

511/12 Psychological Factors in Health 3 x h
- Laboratory study of psychological factors in health psychology. Focus on specific conditions, such as the role of anxiety, motivation, personality, social behavior, and physiological processes. Preparatory: junior or senior standing or consent of instructor. Some sections involve specific psychological or medical laboratories.

511/12 Psychology of Learning 3 x h
- Theoretical and empirical bases of learning in animal and human behavior. Preparatory: PS 314 or PS 315 or consent of instructor.

511/12 Variable-As-Mathematical Models in Psychology 3 x h
- Introduction to the use of mathematical models in the exploration of the dynamic behavior of psychological systems, including statistics and experimental physics.

511/12 Clinical Psychology and Psychopathology 3 x h
- Examination of major theories and concepts of abnormal behavior, and their applications to the analysis of personality, psychopathological processes, and treatment of psychological disorders.

511/12 Drugs and Behavior 3 x h
- Focus on PS 324.

511/12 Clinical Psychopharmacology 3 x h
- Introduction to drugs and behavior. Focus on PS 324.

511/12 Industrial and Organizational Psychology 3 x h
- Focus on PS 325.

511/12 Health Psychology 3 x h
- Focus on PS 328.

511/12 Behavior Therapy 3 x h
- Focus on PS 330.

511/12 Social Psychology 3 x h
- Focus on PS 340.

511/12 Child Development 3 x h
- Focus on PS 360.

511/12 Family Therapy 3 x h
- Focus on PS 370.

511/12 Personality 3 x h
- Focus on PS 380.

511/12 Research Methods in Psychology 3 x h
- Focus on PS 390.

511/12 Research Methods in Psychology I 3 x h
- Focus on PS 391.

511/12 Research Methods in Psychology II 3 x h
- Focus on PS 392.

511/12 Research Methods in Psychology III 3 x h
- Focus on PS 393.

511/12 Research Methods in Psychology IV 3 x h
- Focus on PS 394.

511/12 Research Methods in Psychology V 3 x h
- Focus on PS 395.

511/12 Research Methods in Psychology VI 3 x h
- Focus on PS 396.

511/12 Research Methods in Psychology VII 3 x h
- Focus on PS 397.
park and recreation settings; voluntary and social agency recreation programs; therapeutic recreation programs; school, military service, commercial, and industrial recreation programs; and teaching and research.

In its recreation aspect, the profession deals with activities ranging from music and drama to sports and tourism. The park aspect deals with the planning, design, maintenance, and management of recreational and facilities.

In addition to professional preparation, the Program in Recreation Education offers courses in leisure research, the sociology of cultural views and attitudes toward free time, and the study of leisure as a contemporary social and cultural issue.

The department serves and consults with numerous systems throughout Iowas and the nation.

Bachelor of Science

The student must take 54 semester hours of professional core courses, including:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>101:40</td>
<td>Foundations of Recreation</td>
</tr>
<tr>
<td>101:51</td>
<td>Recreation Leadership</td>
</tr>
<tr>
<td>101:55</td>
<td>Introduction to Therapeutic Recreation</td>
</tr>
<tr>
<td>104:10</td>
<td>Recreation Programming</td>
</tr>
<tr>
<td>104:20</td>
<td>Administration of Recreation</td>
</tr>
<tr>
<td>104:188</td>
<td>Internship in Recreation</td>
</tr>
<tr>
<td>27:58</td>
<td>First Aid</td>
</tr>
</tbody>
</table>

The student must also take 9 to 18 semester hours of courses 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 oriented primarily to municipal, district, and county-level recreation and park departments.

Courses required for this area of concentration are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>104:101</td>
<td>Park and Recreation Facility Management</td>
</tr>
<tr>
<td>104:134</td>
<td>Introduction to Planning and Design of Recreation and Park Areas and Facilities</td>
</tr>
</tbody>
</table>

Therapeutic Recreation

Therapeutic recreation involves on preparing students for organizations, plan, and lead recreation programs in treatment and containment settings for people who are ill, handicapped, aged, disabled, and disadvantaged.

Courses required for this concentration are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>104:120</td>
<td>Orientation to Rehabilitation Settings</td>
</tr>
<tr>
<td>104:121</td>
<td>Orientation to Special Populations</td>
</tr>
<tr>
<td>104:125</td>
<td>Role of Therapeutic Recreation in Rehabilitation</td>
</tr>
</tbody>
</table>

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 as a contemporary social issue, or an interest in diverse fields of recreation, such as outdoor, industrial recreation, etc. It is the most flexible of all concentrations, and makes the maximum use of courses outside of the Program in Recreation Education. It is also ideal for students wishing to obtain a minor in recreation education.

Internship Opportunities

The recreation education program places special emphasis on practical experience and student involvement with the profession and practitioners. Students are encouraged to attend state and national professional conferences, and every class in the professional core includes lectures by working professionals, as well as opportunities for field experience related to course content.

Recreation Administration

This area focuses on the development and administration of recreational programs in settings such as municipal departments, schools, volunteer organizations, churches, the armed forces, social agencies, private organizations, etc. The emphasis within these programs may be on special population groups, such as inner-city and poverty groups, the aged, children, and youth, or upon the meaning of leisure as a social phenomenon, with...
study of the historical, philosophical, and social basis of leisure. Public administration and urban social planning are particular aspects of this area. To provide this emphasis, significant population groups, the program draws heavily from other disciplines such as public administration, social work, urban and regional planning, sociology, geography, and psychology.

Therapeutic Recreation Administration

Therapeutic recreation relates to the development and administration of programs serving the mentally retarded, physically disabled, emotionally disturbed, and aging in both institutional and community settings.

The program is directed toward understanding recreation's role in a comprehensive rehabilitation process, including both clinical and community facets, and thus prepares the student to work with a broad range of disability areas in either a medical setting or in the community. Through the use of related area courses, strengths in specific disability areas may be developed.

It is recommended that the student have had 10 to 12 semester hours of undergraduate credit in courses such as abnormal psychology, psychology of development, sociology of leisure, as well as recreation-related knowledge, such as reading, and aging. The student also should have skills in at least two program fields.

Financial Aid

Assistance is available in the form of graduate assistantships, research assistantships, teaching assistantships, and post-master's assistantships for doctoral candidates. The student may obtain assistance through the department, or through a special program in Therapeutic Recreation Service for Handicapped Children.

Facilities

Students majoring in recreation education have the opportunity to gain extensive experience from paid or voluntary, through independent research in these and other locations. The University of Iowa Psychiatric Hospital and Hospital Schools, University Recreation Services, Iowa City Parks and Recreation Department, Systems Unlimited, various retirement and convalescence homes, and the Community Recreation Department of Parks and Recreation.

Courses

Primarily for Undergraduates

1015 Recreation: Fundamentals

Basic philosophy, historical development, and teaching of basic recreation; development and theories of community recreation and leisure of recreation and park services concept and recreation.

1031 Recreation Administration

Leadership principles and techniques program activities.

1530 Orientation to Recreation Settings

Setting community recreation programs through psychological, related, physically handicapped, convalescent, aging and aged.

For Undergraduates and Graduates

1041-1049 Leisure Research

Research concepts and method.

1315 Introduction to Therapeutic Recreation

Planning and developing recreation program, recreation, technique, identification, use facilities, and leadership.

1350 Administration of Recreation

Programming, personnel, financial, and leisure services, facilities, and facilities.

1351 Orientation to Special Populations

Designed to enable group growth and development of persons with special needs for living, learning, and leisure through individualized recreation planning. Examples include persons with special needs.

1352 Introduction to Therapeutic Recreation

Practicum in therapeutic recreation in total institutional and community rehabilitation; specific training in corrective aspects of therapeutic recreation.

1357 Senior Seminar in Therapeutic Recreation

For majors with program emphasis in therapeutic recreation, primary focus on contemporary issues, major therapeutic recreation program.

1360 Park and Recreation Facility Management

Introduction to recreation and park facilities management personnel, planning, financing, design, and administration.

1361 Introduction to Planning and Design of Recreation and Park Areas and Facilities

Principles of introductory knowledge of recreation, recreation, evaluation, design, and park areas and facilities.

1454 Recreation Education/LIBERAL ARTS
Religion

Academic rather than vocational in its orientation, the undergraduate major in religion provides a foundation for advanced academic degree work, or for study at a theological seminary. The school’s graduate program provides preparation for the study and teaching of religion as an academic discipline. Many University students majoring in other fields elect religious courses in religion, as part of their general education; some elect religion as a second major.

Bachelor of Arts

For a major in religion, undergraduate students elect at least 24 semester hours of coursework in religion according to their own interests, provided they take a minimum of four (4) religion courses in religion, one of which is ordinarily the major’s senior major, among which students majoring in religion elect 12 semester hours in related courses, such as anthropology, art, classics, history, philosophy, psychology, or sociology. The student must also fulfill the requirements of the College of Liberal Arts (see the “Catalog” of the Catalog). The selection of the foreign language must be approved by the advisor.

Honor
Religion majors eligible for the liberal arts honors program may obtain a degree with honors through satisfactory completion of an honors essay during the senior year.

Graduate Programs

The School of Religion seeks to prepare a select and limited number of graduate students to become specialists in the study and teaching of religion. Graduate study is offered in five areas, including

1. Jewish and Christian Scripture
2. History and Textual Criticism

Early to 1500

Modern (since 1500)

Religious Studies

Theology and Ethics

Jewish

Roman Catholic

Protestant World Religions

Methodology

Religion in India, China, or Japan

Religion and Personality

Religion and Personality Development

Religion and Health

Master of Arts

Candidates for the M.A. in Religion must complete 30 semester hours of courses, with a minimum of 10 semester hours in each of three areas of graduate study. A maximum of 6 semester hours of graduate credit may be transferred from another institution toward the M.A. degree. Four hours may be thesis research. The comprehensive examination is ordinarily taken before writing the M.A. thesis.

The master’s candidate must demonstrate a reading knowledge of French or German. With the approval of the advisory committee, another language may be substituted for French or German when appropriate to the student’s program of study. A thesis is required. Its purpose is to enable the student to demonstrate a mastery of the tools and techniques of scholarly work in one field.

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 Hospitals and Clinics provide the setting for research and training in this program.

Candidates for the Master of Arts in religion and health must complete 30 semester hours of coursework. Four may be cross-listed courses. The thesis may be transferred from another accredited graduate or professional school.
The program includes required courses in religion and personality, in related fields of ethics, religion in America, and other relevant fields outside the School of Religion. The student ordinarily takes the comprehensive examination before writing the thesis. Knowledge of a foreign language, statistics, or another research tool may be required, at the discretion of the student's advisory committee.

In addition to the general requirements for admission outlined below, the school generally requires an on-campus interview of applicants to the M.A. program in religion and health; however, the interview may be conducted off campus by an accredited member of the Association for Clinical Pastoral Education.

**Doctor of Philosophy**

Candidates for the doctorate must complete a minimum of 72 semester hours of graduate coursework. A maximum of 12 semester hours will be allowed for the dissertation. The student must elect one of two options for doctoral study.

In the first option, in consultation with the School of Religion faculty, the student develops a broad program which will give him or her a knowledge of three of the five areas in which the school offers graduate study.

Qualifying examinations, covering coursework and readings in each of the three areas, provide an initial determination of the student's progress. Students entering with a master's degree or its equivalent must take qualifying examinations within two years of beginning doctoral work; other students must take them within three years.

Doctoral students must demonstrate competence in either French or German before taking the qualifying examinations. Competence in both languages must be demonstrated at least 12 months before the comprehensive examinations. With faculty approval, another language may be substituted for either French or German. In some areas, however, there are special additional language requirements.

Doctoral students prepare for the oral and written comprehensive examinations under the supervision of a three-member faculty committee. The committee will determine three subjects for the comprehensive examinations, including one subject closely related to the student's dissertation topic. The doctoral candidate must pass an oral examination on the dissertation.

A student choosing the second option pursues one of five separate programs:

- Judaism and Christianity in the Hellenistic World
- History of theology and religious thought in the West
- Contemporary theology and religious thought
- Studies relating theology and other academic disciplines
- History of Asian religions

Application for admission to these programs may be made before or after enrolling for graduate study.

The student is expected to have passed the doctoral language requirements by the end of the second year of graduate study and at least 12 months before taking the comprehensive examinations.

Each of the programs is supervised by a faculty committee. Beginning with the third semester of graduate work and continuing up to the semester of the comprehensive examinations, the student must submit to the supervising faculty the paper best representing his or her work that semester.

Depending on the student's program, the comprehensive examination will cover three or four fields. One field will be directly pertinent to the student's dissertation subject.

A student who fails the doctoral comprehensive examination may, with approval of the faculty, complete a thesis for a terminal Master of Arts degree.

More detailed information on degree requirements and graduate study policies of the School of Religion are in information for Graduate Students, which is made available to all applicants. It is regularly updated. Inquiries about any of the programs may be made to the director of the school.

**Facilities**

The University Hospital and Clinics provide clinical opportunities for students in religion and personality, particularly in clinical pastoral education and the M.A. program in religion and health. Individual courses in such topics as death and dying and medical ethics also utilize hospital personnel and facilities.

**Graduate Financial Aid**

The School of Religion has available three types of departmental financial aid: teaching, research fellowships; teaching assistantships; and research assistantships.

Awards are made annually on a competitive basis. First-year students are ordinarily appointed only as research assistants.

**Graduate Admissions**

All applicants for admission to graduate study must meet the general requirements of the Graduate College. In addition, the School of Religion ordinarily requires a score of 1030 on the Graduate Record Examination (GRE) in the Combined Test and a 3.0 grade-point average for admission to the M.A. program, and a Graduate Record Examination score of 1100 and a grade-point average of 3.2 for admission to the Ph.D. program.

**Courses**

**Primarily for Undergraduates**

- OT Old Testament Survey
- General Through 5 Samuel
- OT New Testament Survey
- Acts Through II Chronicles
- I&II Kings
- Literature of New Testament in Its Historical Setting
- NT Introduction to Scholastic
- Principal teachings of the Orthodox Faith: Gregorian and Eastern works are available at the Catholic Church; development since Version II.
Rhetoric

Coordinator: Dorene J. Ohta
Faculty: professors Margaret M. McDowell, Dorene J. Ohta
associate professors William D. Clark, Richard B. Hodman, Louis H. Mann, Beatrice M. Tatsi
assistant professors Sylwe N. Kopka, Claire Martin, Dennis W. Mores

The Rhetoric Program offers students direct opportunities, through their own oral and written communication, to evaluate their experiences and to explore and formulate possibilities for their personal and intellectual growth.

Responsibly using various sources of information and investigating, analyzing, evaluating, and responding to the ideas, beliefs, and attitudes of other writers and speakers are integral functions of rhetorical coursework. Rhetoric instructors' primary responsibility, however, is to help students clarify their own thinking and improve their own communication.

Satisfactory performance in rhetoric is a requirement for baccalaureate graduation from the College of Liberal Arts (see the "College of Liberal Arts" section of the Catalog). The Rhetoric Program's reading and writing labs are available to all University students, as a voluntary basis (see the "Services for Students" section of the Catalog).

Courses

101. Rhetoric 4.5 h.
Instruction and practice in speaking, writing, and critical reading, with the focus on expression and critical analysis. Develops competence in analyzing, organizing, and developing ideas, reading and using texts, designing effective writing and oral presentation ideas, according to context to readers and audience.

102. Rhetoric 4.5 h.
Continued instruction and practice in speech and writing, focusing on ideas, organization, critical thinking, research, and analysis. Develops competence in research, speaking, and writing with research, ideas, and critical thinking. Develops competence in the further development of oral and written presentations, with emphasis on research and development of written, and oral presentation ideas, according to context to readers and audience.

104. Rhetoric 1.0 h.
Instruction and practice in written communication only. See 103 for course information.

105. Rhetoric 1.0 h.
Students using and/or difficulty with college-level reading and writing are encouraged to study through this course. Regular assignments include the development of effective reading skills, vocabulary growth, reading comprehension, essay writing, and development of ideas. Open to any student of good academic standing who has difficulty with one or more of these areas.

106. Rhetoric 0.5 h.
After an initial review of rhetoric, instructors focus on the particular needs and concerns of the specific student. May be repeated in another rhetoric course.

109. Rhetoric Internship in College Writing 0.5 h.
For students who need intensive work toward the development of both writing abilities before 101.

Russian

Department chair: Ray J. Pardue, Jr.
Faculty: professor Roman Lazarevitch
assistant professors Mary L. Bender, Mary H. Weitz, Andrew J. Warme
associate professor Ray J. Pardue, Jr., Henry B. Wilken, Christopher A. Vonito
instructors Mikhail Bagryan, Werner J. Getman
Degrees offered: B.A., M.A.

The purpose of the Russian program is to give students training in both the written and spoken Russian language and in Russian literature. An important secondary objective of the program is to give students an understanding and appreciation of Russian civilization and culture. A knowledge of Russian is seldom an end in itself but rather a means to some other vocation. The department encourages all of its beginning students to pursue a joint major and to develop their interest in other fields.

With the increasing importance of Russia as a language of science and commerce, many students find that training in the language is an important asset to careers in the natural and physical sciences, engineering, medicine, and business. Students of journalism, library science, and the social sciences also have strengthened their career preparation through the study of Russian. Some students major in Russian before going into law, international relations, or another profession; others study Russian as preparation for graduate work in Slavic languages and literatures, comparative literature, English, or other humanistic disciplines.

Russian majors with the B.A. and the required education courses occasionally seek teaching careers in secondary schools. A number of governmental agencies regularly interview job candidates who have advanced training in Russian. Students who develop an excellent facility with the language may pursue careers in communications, literary and technical translation, and interpretation.

Bachelor of Arts

Students who major in Russian must meet the general College 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 courses. Required courses are:

411:111-411 Intermediate Composition and Conversation 8.0 h.
411:113 Advanced Composition and Conversation 3.0 h.
411:171-412 Reading in Representative Russian Literature 8.0 h.

Three of the following:
411:151 Russian Literature in Translation 1800-1850 3.0 h.
411:152 Russian Literature in Translation 1850-1917 3.0 h.
411:158 Tolstoy and Dostoevsky 3.0 h.
411:181 Soviet Literature 3.0 h.
411:188 Russian Culture 3.0 h.
411:191 Russian Civilization 3.0 h.

Students majoring in Russian are urged to include related courses in economics, geography, history, or political science among their electives.

All students majoring in Russian are strongly encouraged to enroll in the guaranteed-service course 411:127 Phonetics and Pronunciation. With the consent of the instructor, students may enroll in 411:106 Special Readings for instruction in business Russian.

For a minor in Russian the student must complete a minimum of 18 semester hours in the department, 12 of which must be advanced courses selected with the approval of the department.
Honors

Russian majors of junior or senior standing with a grade-point average of at least 3.0 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 constitute each honors work unit of two semester hours. Students may take up to eight semester hours of honors in Russian.

Summer and Study Abroad Programs

The department regularly encourages undergraduate and graduate students to participate in intensive programs of language study both in the United States and the Soviet Union. In recent years an increasing number of students have studied in summer and semester programs at Lingncted State University under the auspices of the Council on International Educational Exchange. Other students have accelerated and refined their Russian language skills in various intensive summer programs at major American universities. Inquiries should be directed to the Russian department office.

Master of Arts

Offered with or without thesis, the M.A. program in Russian offers two major emphases, in literary or in language study. The focus in literary studies is on the development of Russian literature, both as a national phenomenon and as a part of European culture. Students are expected to analyze writers’ styles, perceive literary techniques, recognize literary influences, and develop the ability for sound criticism of form, content, and language of works in all genres. Students electing an emphasis on language studies focus on the historical development of Russian, and do advanced study of contemporary phonology, morphology, syntax, and stylistics. Candidates for the master’s degree must have completed the equivalent of the undergraduate major in Russian. Deficiencies in previous training may be made up by taking appropriate courses. Candidates for the master’s degree are required to complete a minimum of 30 semester hours of graduate work, with or without thesis. The program should include courses in related fields such as comparative literature, history, philosophy, and other languages. A student in the thesis program may earn from four to eight semester hours of credit for thesis preparation. Candidates for the M.A. must write a thesis and an oral examination; they must also demonstrate a reading knowledge of 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. It is awarded annually on a competitive basis to the best qualified applicants. Ordinarily teaching assistantships are not awarded to first-year students, though exceptions are sometimes made on the basis of advanced language skills. Applications are considered only from students who have been admitted to the Graduate College. Inquiries should be addressed to the departmental office.

Coursework for Nonmajors

The department offers special reading courses designed for students from other fields who need a reading proficiency in Russian in either the social or natural sciences. A scientific Russian course is offered for students in sciences who need to develop reading ability for research purposes. Some cases are open to University students from all departments and are offered in English. These include survey courses in Russian literature, culture, and civilization, readings in Soviet literature, and monograph courses on Tolstoy and Dostoevsky.

Special Activities

Each year the department presents several guest lectures and sponsored films. Students sometimes put on Russian plays. Russian Circle is an organization open to graduates and undergraduates for social activities. Participation in Russian Circle also provides students with the opportunity to practice speaking Russian with other members of the department.

Language Laboratory

The University’s Language Laboratory provides facilities for language learning, teaching, and research. Equipment in the lab includes standard and short-wave radios, tape recorders, record players, soundproof recording rooms, and drum rooms. In electronic classrooms, a soundproof workshop, and a library of tape and disc recordings are also available.

Courses

For Undergraduates and Graduates

41101 Elementary Russian 4 a.h.
41102 Elementary Russian 4 a.h.
Prerequisites: 41101 or equivalent.
41203 Russian for Reading 3 a.h.
Emphasis on reading scientific and technical Russian material for students, especially those majoring in sciences, who need to develop reading ability for research purposes. Inquiries should be directed to the Russian department office.
41204 Russian for Reading 3 a.h.
Prerequisites: 41203 or equivalent.
41205 Intermediate Russian 4 a.h.
Standard second-year course recommended for students studying their foreign language again. Both reading and speaking are stressed. Further reading is in active use of the language. Prerequisites: 41102 or equivalent.
41206 Second-Year Russian 4 a.h.
Prerequisites: 41205 or equivalent.
41208 Special Readings 2-4 a.h.
41306 Elementary Spanish 4 a.h.
41400 Intermediate Russian 3 a.h.
Prerequisites: 41203 or equivalent.
41700 Russian Composition 4 a.h.
Prerequisites: 41203 or equivalent.
41913 Advanced Composition and Conversation 4 a.h.
41915 Advanced Composition and Conversation 4 a.h.
Prerequisites: 41913 or equivalent.
41916 Advanced Composition and Conversation 3 a.h.
Prerequisites: 41915 or equivalent.
Science Education

Science Education Programs

Undergraduate Programs

The undergraduate program in science education represents a transdisciplinary major in science for all students while providing an appropriate option for students interested in science teaching, one of the medical professions, an allied health field, specific preparation for optometry or mortuary science training, or some areas in scientific journalism and law.

The science education major is not intended to prepare students for advanced study in any one area of science. When graduates of the Science Education Program elect to pursue graduate studies in a single area of science, it is often necessary for them to complete additional courses in that discipline after admission to the Graduate College.

Since the Bachelor of Arts degree in general science requires a minimum of 44 semester hours and the Bachelor of Science degree requires 46 (see "Curricular Science" in this section of the catalog), the 58-semester-hour emphasis area in science education qualifies graduates for either degree. The language proficiency requirements are the only differences between the two degrees.

All of the emphasis areas in science education have the following characteristics in common:

- Depth in a general area of science, equivalent to five or six years of study at the entering level (two years of chemistry and three years of a natural science other than chemistry).
- Preparation in a second area of pure science, equivalent to two years of laboratory and three years of study at the entering level.
- Introduction to two or three fields of science.

A specified proficiency in mathematics as a tool of science (more mathematics is required for the physical science emphasis than the biological one).

A view of science from an historical/philosophical/cultural perspective and experience with the application of scientific knowledge in a technological sense.

Primary for Graduates

Science Education

Science Education Programs

Undergraduate Programs

The undergraduate program in science education represents a transdisciplinary major in science for all students while providing an appropriate option for students interested in science teaching, one of the medical professions, an allied health field, specific preparation for optometry or mortuary science training, or some areas in scientific journalism and law.

The science education major is not intended to prepare students for advanced study in any one area of science. When graduates of the Science Education Program elect to pursue graduate studies in a single area of science, it is often necessary for them to complete additional courses in that discipline after admission to the Graduate College.

Since the Bachelor of Arts degree in general science requires a minimum of 44 semester hours and the Bachelor of Science degree requires 46 (see "Curricular Science" in this section of the catalog), the 58-semester-hour emphasis area in science education qualifies graduates for either degree. The language proficiency requirements are the only differences between the two degrees.

All of the emphasis areas in science education have the following characteristics in common:

- Depth in a general area of science, equivalent to five or six years of study at the entering level (two years of chemistry and three years of a natural science other than chemistry).
- Preparation in a second area of pure science, equivalent to two years of laboratory and three years of study at the entering level.
- Introduction to two or three fields of science.

A specified proficiency in mathematics as a tool of science (more mathematics is required for the physical science emphasis than the biological one).

A view of science from an historical/philosophical/cultural perspective and experience with the application of scientific knowledge in a technological sense.
Students who wish to qualify for secondary teaching certificates with endorsement to teach science must complete a total of 26 semester hours of credit in specified courses (see "Secondary Education" in the "College of Education" section of the Catalog). Outlines for the five areas of emphasis offered in science education are as follows:

**Biologv Emphasis**

Courses in Biology

2:1 Introduction to Botany 4 s.h.
37:3 Principles of Animal Biology 5 s.h.
2:129 Fundamental Genetics 3 s.h.
(same as 37:129)
2:131 Evolution 4 s.h.
(same as 37:191)
2:132 Ecology 4 s.h.
(same as 37:132)
72:150 Intermediate Physiology 4 s.h.

Total 24 s.h.

Courses in Chemistry

4:13-14 Principles of Chemistry I-II 8 s.h.
4:16 Elementary Chemistry Laboratory I 2 s.h.
4:21-22 Organic Chemistry I-II 6 s.h.

Total 14 s.h.

Courses in Geology and Physics

25:9 Basic Physics 4 s.h.
12:3 Principles of Physical Geology 2 s.h.

Total 6 s.h.

(Mathematics as a Tool

22M:15 Mathematics for the Biological Sciences 4 s.h.

Additional courses are recommended.

Application of Science

Two approved courses (4 semester hours) chosen with the advisor’s assistance; a wide variety of transfer courses from such applied areas as engineering, agriculture, and technical schools satisfy this requirement.

**History/Philosophy/Sociology of Science**

97:128 Measuring of Science 2-3 s.h.
97:130 Science in Historical Perspective 2-3 s.h.

**Earth Science Emphasis**

Courses in Geology

12:9 Introduction to Geology 4 s.h.
or
11:23 Earth History and Resources 4 s.h.
or
11:24 Man and His Physical Environment 4 s.h.
12:6 Evolution of the Earth 4 s.h.
12:9 Geology of Iowa 2 s.h.
12:41 Mineralogy 4 s.h.
12:108 Introduction to Oceanography 2 s.h.
(Elective course(s) 4 s.h.

Total 20 s.h.

Supporting Science Courses

4:13-14 Principles of Chemistry I-II 6 s.h.
29:11-12 College Physics 4 s.h.
29:50 Modern Astronomy 4 s.h.

Total 10 s.h.

Courses in Geography

44:101 Introduction to Weather and Climate 3 s.h.
44:116 Natural Environmental Issues 2 s.h.

Total 5-6 s.h.

(Mathematics as a Tool

22M:20 Elementary Functions 3 s.h.

Additional courses are recommended.

Application of Science

Two approved courses (5 semester hours) chosen with the advisor’s assistance; a wide variety of transfer courses from such applied areas as engineering, agriculture, and technical schools satisfy this requirement.

**History/Philosophy/Sociology of Science**

97:128 Measuring of Science 2-3 s.h.
97:130 Science in Historical Perspective 2-3 s.h.

**Environmental Studies Emphasis**

Courses in Biology

2:1 Introduction to Botany 4 s.h.
37:9 Principles of Animal Biology 5 s.h.
2:128 Fundamental Genetics (same as 37:128) 3 s.h.
2:131 Evolution (same as 37:131) 4 s.h.
2:132 Ecology (same as 37:132) 4 s.h.

Total 20 s.h.

Courses in Chemistry

4:13-14 Principles of Chemistry I-II 8 s.h.
12:1-12 Organic Chemistry I-II 6 s.h.

Total 16 s.h.

Other Environmental Courses

Twelve semester hours from the following:

44:19 Natural Environmental Issues 2 s.h.
or
44:19 Natural Environmental Issues 2 s.h.

Total 20 s.h.

Courses in Geology and Physics

25:9 Basic Physics 4 s.h.
12:3 Principles of Physical Geology 2 s.h.

Total 6 s.h.

(Mathematics as a Tool

22M:15 Mathematics for the Biological Sciences 4 s.h.

Additional courses are recommended.

Application of Science

Two approved courses (4 semester hours) chosen with the advisor’s assistance; a wide variety of transfer courses from such applied areas as engineering, agriculture, and technical schools satisfy this requirement.

**History/Philosophy/Sociology of Science**

97:128 Measuring of Science 2-3 s.h.
97:130 Science in Historical Perspective 2-3 s.h.

**Environmental Studies Emphasis**

Courses in Biology

2:1 Introduction to Botany 4 s.h.
37:9 Principles of Animal Biology 5 s.h.
2:128 Fundamental Genetics (same as 37:128) 3 s.h.
2:131 Evolution (same as 37:131) 4 s.h.
2:132 Ecology (same as 37:132) 4 s.h.

Total 20 s.h.

Courses in Chemistry

4:13-14 Principles of Chemistry I-II 8 s.h.
12:1-12 Organic Chemistry I-II 6 s.h.

Total 16 s.h.

Other Environmental Courses

Twelve semester hours from the following:

44:19 Natural Environmental Issues 2 s.h.
or
44:19 Natural Environmental Issues 2 s.h.

Total 20 s.h.

Courses in Geology and Physics

25:9 Basic Physics 4 s.h.
12:3 Principles of Physical Geology 2 s.h.

Total 6 s.h.

(Mathematics as a Tool

22M:15 Mathematics for the Biological Sciences 4 s.h.

Additional courses are recommended.
Application of Science
Two approved courses (4 semester hours) chosen with the adviser's assistance; a wide variety of transfer courses from such applied areas as engineering, agriculture, and technical schools will satisfy this requirement.

History/Philosophy/Sociology of Science
97:128 Meaning of Science 2-3 s.h.
97:130 Science in Historical Perspective 2-3 s.h.

Health Emphasis
Courses in Biology
97:3 Principles of Animal Biology 5 s.h.
97:116 Peadontology 4 s.h.
61:157 General Microbiology 4 s.h.
72:150 Introductory Physiology 4 s.h.
96:110 Biochemistry 3 s.h.
Total 20 s.h.

Courses in Chemistry
4:13-14 Principles of Chemistry I 8 s.h.
4:121-122 Organic Chemistry I 8 s.h.
Total 16 s.h.

Related Science Courses
63:101 Dynamics of Health 3 s.h.
63:106 Community Health 2 s.h.
42:112 Human Sexuality 3 s.h.
17:121 Human Development and the Family 3 s.h.
17:41 Food, Nutrition, and Man 3 s.h.
17:106 Basic Aspects of Aging 2-3 s.h.
71:150 Drugs: Their Nature, Action, and Use 4 s.h.
Total 14 s.h.

Other Science Courses
12:2 Lectures in Men and His Physical Environment 2 s.h.
29:8 Basic Physics 4 s.h.

Mathematics as a Tool
22M:15 Mathematics for the Biological Sciences 4 s.h.

Additional courses are recommended.

History/Philosophy/Sociology of Science
97:128 Meaning of Science 2-3 s.h.
97:130 Science in Historical Perspective 2-3 s.h.

Physical Science Emphasis
In the physical science emphasis, the student chooses either a chemistry or a physics concentration and completes the courses listed for that concentration. Students in both concentrations complete all other courses listed for the physical science emphasis.

Chemistry Concentration
4:13 Principles of Chemistry I 3 s.h.
4:14 Principles of Chemistry II 3 s.h.
4:16 Elementary Chemistry Laboratory I 2 s.h.
4:101 Elementary Quantitative Analysis 4 s.h.
4:121 Organic Chemistry I 3 s.h.
4:122 Organic Chemistry II 3 s.h.
4:130 Physical Chemistry for the Life Sciences 3 s.h.
20:11 College Physics 4 s.h.
20:12 College Physics 4 s.h.
20:19 Introductory Physics III 4 s.h.
20:115 Intermediate Mechanics 3 s.h.

Physics Concentration
20:11 College Physics 4 s.h.
20:12 College Physics 4 s.h.
20:19 Introductory Physics III 4 s.h.
20:115 Intermediate Mechanics 3 s.h.

Course in Earth Science
20:50 Moon Astronomy 4 s.h.

Mathematics as a Tool
22M:25 Calculus I 4 s.h.
22M:26 Calculus II 4 s.h.

Application of Science
Two approved courses (4 semester hours) chosen with the adviser's assistance; a wide variety of transfer courses from such applied areas as engineering, agriculture, and technical schools will satisfy this requirement.

History/Philosophy/Sociology of Science
97:128 Meaning of Science 2-3 s.h.
97:130 Science in Historical Perspective 2-3 s.h.

Honors
A student matriculating in science education may earn an honors degree by completing all general requirements of the honors program. Requirements include four semesters of 97:110 Seminar: Selected Science and Education Topics, at least 4 semester hours of credit in 97:98 Honors Research Project, and completion of a significant research project approved by a faculty adviser and described in a final paper prepared for the science education library.

Minors
Basically, the minor in science education have the same minimum requirements as general science (see "General Science" in this section of the Catalog). An education minor is designed to provide a set of courses necessary to qualify the student for a secondary teaching certificate in a particular area of science. All science teaching minors must include:
75:151 Science Methods I: Individualized instruction in Science 2 s.h.
75:152 Science Methods II: Resources and Teaching Strategies 2 s.h.
75:191 Observation and Laboratory Practice in the Secondary School 3 s.h.
97:128 Meaning of Science 2 s.h.
97:130 Science in Historical Perspective 2 s.h.

Additionally, the student must meet the science emphasis areas in his or her science coursework.

Biology
2:1 Introduction to Botany 4 s.h.
37:3 Principles of Animal Biology 5 s.h.
97:103 Societal and Educational Applications of Biological Concepts 3 s.h.
Botany and zoology electives 9 s.h.
Chemistry
4:13-14 Principles of Chemistry 10 a.h.
4:16 Elementary Chemistry Laboratory 1 2 a.h.
97:105 Societal and Educational Applications of Chemical Concepts arr.
Chemistry electives 10 a.h.

Physics
29:11-12 College Physics 8 a.h.
97:105 Societal and Educational Applications of Selected Concepts of Physics arr.
Physics electives 10 a.h.

General Science
2:1 Introduction to Botany 4 a.h.
29:61 General Astronomy 4 a.h.
12:5 Principles of Physical Geology 2 a.h.
or
12:4 Principles of Historical Geology 2 a.h.
4:13 Principles of Chemistry I 3 a.h.
29:11 College Physics 4 a.h.

Environmental Studies Emphasis
2:1 Introduction to Botany 4 a.h.
31:3 Principles of Animal Biology 5 a.h.
37:132 Ecology 2, 4 a.h.
4:13 Principles of Chemistry I 3 a.h.
Electives in environmental engineering 3 a.h.
97:140 Problems in Integrating the Teaching of Environmental Science 3 a.h.

Earth Science
12:5 Principles of Physical Geology 2 a.h.
12:4 Principles of Historical Geology 2 a.h.
29:61 General Astronomy 4 a.h.
Geology and astronomy electives 10 a.h.
97:102 Societal and Educational Applications of Earth Science Concepts and Topics arr.

Iowa-UPSTEP
Iowa-UPSTEP is a continuing program for UI undergraduate students interested in exploring science teaching as a career option. Students register for program seminars and a variety of practicum experiences. In addition to experiences with youth, with seminarians, and with regular courses, students are involved in excursions, social activities, and special action projects.

Graduate Programs
The Science Education Program offers graduate study leading to the degrees of Master of Arts in Teaching, Master of Science, Educational Specialist, and Doctor of Philosophy. The M.A.T. program is designed for persons who have had strong undergraduate preparation in science and have decided after receiving the bachelor's degrees that they wish to teach science in secondary schools.

Iowa-UPSTEP is a special program for talented secondary school students. The student registrants as a special UI undergraduate student prior to high school graduation. The program includes research participation, enrichment courses, and/or field experiences.

Iowa-UPSTEP
Iowa-UPSTEP is a continuing program for UI undergraduate students interested in exploring science teaching as a career option. Students register for program seminars and a variety of practicum experiences. In addition to experiences with youth, with seminarians, and with regular courses, students are involved in excursions, social activities, and special action projects.

Graduate Programs
The Science Education Program offers graduate study leading to the degrees of Master of Arts in Teaching, Master of Science, Educational Specialist, and Doctor of Philosophy. The M.A.T. program is designed for persons who have had strong undergraduate preparation in science and have decided after receiving the bachelor's degrees that they wish to teach science in secondary schools.

The other graduate programs in science education are for persons desiring additional preparation in science and education for K-12 teaching, for persons interested in supervisory and/or administrative positions in schools, for persons interested in educational evaluation, for persons wishing to teach science and/or science education at the college level, and for persons interested in developing instruction programs in science, industrial, and/or related settings.

The graduate programs in science education continue the philosophy and pattern of the undergraduate programs outlined above. Specific components of each of the graduate programs are as follows:

Master of Arts in Teaching
- Professional education sequence 26 a.h.
- History/philosophy of science 4 a.h.
- Science (beyond 50-semester-hour undergraduate requirement) 10 a.h.
- Minimum total 36 a.h.

Master of Science with Thesis
Advanced science education 12 a.h.
Major field of science (beyond emphasis area for undergraduate major) 12-18 a.h.
Applied science 4 a.h.
Minor science field 10 a.h.
Minimum total 38 a.h.

Doctor of Philosophy
Advanced science education 18 a.h.
Research 6 a.h.
Major area of science 28 a.h.
Correlative studies 16 a.h.
Minimum total beyond master's degree 72 a.h.

Admission
Requirements for admission to graduate study in science education are identical with those of the Graduate College. The admission process is coordinated with the College of Education.
Special Programs

Iowa-ASSIST

Iowa-ASSIST is a special program in science education which involves 600 in-service teachers each year in special curriculum development and implementation efforts. Summer and academic year workshops provide the basic mode of operation for the program. Associated with Iowa-ASSIST is a materials center which provides printed and laboratory materials for workshop and school program implementations.

In addition, Iowa-ASSIST administers a fall Science and Education Conference that attracts more than 300 teachers and students from Iowa schools; sponsors a spring Science and Humanities Symposium, jointly with the U.S. Army Research Office, for about 400 high-school students and their teachers; sponsors several conferences for the improvement of science teaching and public awareness of science-facility issues; and each summer sponsors special workshops utilizing local authorities and enrolling 200 teachers, supervisors, and administrators.

Chautauqua Short Course Programs

The Science Education Center also administers the NSF-supported and JABS-organized Chautauqua Short Course programs for college science teachers and college instructors of science are involved in such continuing education activities.

Research

Each faculty member in science education is responsible for one or more lines of research. Major areas of faculty and graduate-student research includes:

- Philosophy and sociology of science
- Values education in science
- Individualized learning
- Educational technology
- Computer-assisted learning
- Simulation systems
- Classroom interaction studies
- Creativity

Plagiarism development psychology
Cross-cultural experiences
Health education
Instructional psychology
Teacher behavior
Mathematical activity
Inquiry processes
Instructional modes
Concept formation
Adapting X Treatment Interaction (ATI)
Attitudinal and other affective outcomes of instruction
Classroom sociometrics and climate

International Programs

Another dimension of the Science Education Center is its emphasis upon international issues. A sizable number of foreign students is enrolled. The faculty has been involved in extended periods in international programs and projects as well.

Facilities

The physical facilities for science education programs at The University of Iowa are exemplary.

The Science Education Center is located in the modern Physics Building near the center of the University campus.

Facilities on the fourth floor include the main office of the Science Education Center; a photographic laboratory; a library; a conference room; a library; and a counseling center; a suite of offices for student program activities; space for the elementary school science program office; a laboratory for the elementary school science methods course; and two large teaching laboratories for the foundations of science sequence.

Third-floor facilities include an interactive curricular and secondary methods laboratory; a curriculum and materials resource center; an office for coordinating Iowa-ASSIST; a model in-service program for assisting schools in implementing new national curriculum in Iowa schools; and a resource center including two living and expendable materials.

The seventh floor includes central offices for the history and philosophy of science, the science education and secondary school teacher education programs; an instructional laboratory including laboratory and audiovisual materials; a large seminar room used as an instructional and research for some of the secondary school teacher education sessions, including many faculty of the Iowa-USPSTEP model; multiple offices for graduate assistants; a common area for small group discussions and individual work; and two large areas for small group and committee work.

Courses

The following are special courses offered by the Science Education Program to supplement the undergraduate emphasis areas in science education and to provide science options for elementary and special education majors. The College of Education offers many basic courses in science education, for a list of specific offerings, inquire at the Science Education Program Office.

Primary for Undergraduates

4172 Investigation in Science (Fall) 3 cr.
Special problems in science for high-school secondary science students.
4141 Science Survey (Fall) 4 cr.
4164 Science Survey (Spring) 4 cr.
4175 Science Foundations I (Fall) 3-4 cr.
4176 Science Foundations II (Spring) 3-4 cr.
4179 Seminar Research Project (Fall) 3 cr.
Research experiences required of undergraduates pursuing honors degree.

For Undergraduates and Graduates

5101 Societal and Ethical Applications of Ethics (Fall) 3 cr.
Review of major ethical principles of the scientific method and applications of moral principles in today's society.
The student may elect to take the master's degree with or without thesis, under either of two plans, both requiring 38 semester hours of credit in graduate courses.

In one plan the student completes at least ten semester hours of coursework in each of three of the seven cooperating departments, and may complete the remaining eight semester hours in one or among all of the three. In the other plan the student completes at least ten semester hours of coursework in two social sciences and not more than ten in education, and may complete the remaining eight semester hours in either of both of his or her social science fields. Both plans require at least nine semester hours of credit earned in courses numbered 200 or above, including one such course in each of the student's three fields of emphasis. All candidates must also complete 98:201 Individual Instruction in Social Studies Education and/or 98:202 Seminar: Social Studies Education. The candidate must pass an oral and written comprehensive examination. The program offers a wide variety of educational experiences, depending on the candidate's fields of study. Possibilities include small group instruction, seminar work, independent study reading, computer experience, internships, and laboratory work.

Admission Requirements
A student wishing to major in social studies education for a master's degree must have earned at least 30 semester hours of undergraduate credit in one area of social studies at an accredited institution, and must have a minimum grade-point average of 2.75 on all work undertaken in social studies up to the time of application. After declaring a social studies education major, the M.A. candidate must maintain at least a 3.75 grade-point average.

Doctor of Philosophy
Some graduates of the social studies education program have gone into administration in institutions of
higher education and are serving as presidents, provosts, or deans of faculty or graduate studies. Some are department chairs in colleges of education or other colleges of large school districts. Many are engaged in teacher education programs in colleges and universities, while others are college instructors in their areas of academic concentration. The program consists of a minimum of 90 semester hours of coursework and dissertation credit beyond the bachelor's degree, exclusive of total requirements established by the College of Education. These credits are to be distributed among two of the cooperating disciplines—anthropology, economics, geography, history, political science, psychology, and sociology—and professional education. Depending upon the background and needs of the candidate, work in the two disciplines chosen will comprise between 80 and 75 percent of the total 90 semester hours, work in education between 25 and 40 percent. Depending upon the areas of study he or she chooses, the candidate will have an opportunity for regular classroom, small group instruction, internship, independent study, fieldwork, and laboratory and computer experience. Seminar and advanced work in courses numbered 200 or above is required in each of the two disciplines. All candidates must complete 46-201 Individual Studies Education and/or 46-405 Seminar. Social Studies Education. After completing most of his or her coursework, the candidate must take a qualifying examination covering each of his or her fields of emphasis. The candidate must complete and defend a dissertation based on original research in either of his or her academic fields of study or on some aspect of social studies education.

Admission Requirements

Admission to doctoral study in social studies education requires a bachelor's degree in history or a social science or an accredited institution; a master's degree in history, a social science, or education; satisfactory performance on the Graduate Record Examination; and an academic record showing promise of scholarly success.

Facilities

Students in social studies education have access to the facilities and libraries of the seven cooperating departments and the College of Education. Special agencies and services are also 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 Reading Clinic, the Weig Consorting Center, and other facilities.

The faculty members who serve as social studies education advisers and coordinators are experienced classroom teachers whose advanced degrees have been earned in History, the social sciences, and education. They are active in professional organizations, consultative work, and in working with interns in curricular revision.

Courses

60251 Individual Instruction in Social Studies Education 3 H. Individualized readings, field studies, and individual projects; focus is history and social sciences or an approved area of professional education. May be repeated for credit up to 15 hours. 3 credits.

8020 Seminar: Social Studies Education 3 Reading and discussion on significant developments in History, social sciences, and social studies education; for accredited social studies graduate students. Prerequisite: consent or instructor. Offered fall semester. Same as 46-207.

Social Work

Director: Ruth A. Brandwein

Department of Social Work

Professor of Social Work

Charles M. Jorgenson, J.D., M.A., PDF, Associate Professor of Social Work

Kenneth W. Martin, Ph.D., MSW, Associate Professor of Social Work

Judith R. Shulman, Ph.D., MSW, Associate Professor of Social Work

J. Michael Johnson, Ph.D., MSW, Associate Professor of Social Work

Social Work provides an academic and professional training at the baccalaureate and master's level. This program is designed to provide a professional approach to the social services field. Students who complete the B.A. program may be employed in social service agencies, government agencies, and other organizations.

Bachelor of Arts

The B.A. program prepares students for beginning professional social work practice. The goals of the program are to prepare students for employment in social services using B.A. graduates, such as public welfare, group services, and corrections; to provide a base for graduate study in social work or allied professions; and to prepare students for informed community participation in social welfare issues. The program is accredited by the Council on Social Work Education.
History
Home Economics
Journalism
Political Science
Psychology
Recreation Education
Religion
Sociology
Spanish

Honors

The School of Social Work has a honors program leading to a Bachelor of Arts with honors in social work. Students interested in such a program should contact the school.

Admission

Admission to the undergraduate program in social work requires:
- Completion, with at least a C grade, of 42:22 Introduction to Social Work, which can be taken the sophomore year;
- At least a 2.25 grade-point average on a 4-point scale; and
- Completion of the application process.

For more information, contact the coordinator of the undergraduate program in social work.

Master of Social Work

The M.S.W. program prepares social workers for leadership in the protection and for advanced social work practice, either as generalists or in one of three concentrations. The comprehensive and practice-oriented core curriculum, as well as program options and specializations, are designed to enable students to meet and facilitate the dynamics of human development and change; commit themselves to working human service organizations responsive to people; understand the linkages between the community and the individual; and acquire intervention skills for working with individuals, families, small groups, organizations, and communities.

The Master of Social Work degree requires at least 80 semester hours of credit in graduate courses approved by the school including at least 36 semester hours earned after admission.

The student may obtain advanced standing for up to 12 semester hours of graduate study completed before admission to the program. Students who have completed an accredited undergraduate major in social work are eligible for a 12-hour reduction of credit requirements. With their advisors, they may play an active role in assisting students in their educational planning, students should explore additional mechanisms for waiving courses.

The School operates a 12-month program. The summer term is considered one semester. Full-time students may enroll for a maximum of 13 semester hours each semester.

Therefore, students entering the program with an accredited undergraduate social work degree and/or with advanced standing may expect to complete the program in three or four semesters (i.e., the summer or fall semester following fall admission). Students requiring more than 80 semester hours after admission generally complete the program the spring semester of their second year.

Students must maintain at least a 2.5 cumulative grade-point average on a 4-point scale, and must successfully complete a final explication project in lieu of the comprehensive examination the Graduate College generally requires. The student may elect a thesis option for credit, and can substitute the thesis work for the final examination project.

The following is an outline of the M.S.W. degree requirements:

Core courses:

42:140 Human Behavior in the Social Environment 3 s.h.
42:143 Social Welfare Policy 3 s.h.
42:144 Social Work Research 3 s.h.

Total 12 s.h.

Other required courses:

42:224 Interpersonal Communication and Change: Advanced Practice 3 s.h.
42:240 Human Services Administration 3 s.h.
42:201 Community Organization 3 s.h.
Concentrations

After admission, students may choose one of four plans of study. They may elect either to pursue advanced work as a social work generalist or to choose from among three concentrations. Concentrations focus on intervention at one of three levels of social systems.

The generalist option is designed to provide students with basic knowledge and skills in all three concentrations. It is especially suitable for students who expect to practice in rural communities where they will be expected to perform a variety of functions. It may also be a suitable choice for students who want to focus on a particular level of system of intervention. Generalists are required to take 6 semester hours of coursework in each concentration, including the required advanced practice course in each. Other courses which can serve to meet the requirement will be made available upon entry into the program. Practicum will include some opportunities for practice experiences at each system level.

The concentration in individual, family, and small group services prepares students for intervention with these client groups. It seeks to develop practice competence in students both as enablers of personal change and as brokers/advocates for individuals and families. Topics include family law and welfare, work with children, marriage and family counseling, and theories of personality.

The concentration in organizational practice is designed to develop practice competence for a variety of administrative roles in human service agencies as well as to enable students to act effectively in making such organizations more responsive to their clients. Topics include program evaluation, grant development, administrative law, and health and family policy.

The social work concentration is designed to prepare students for intervention in neighborhoods, communities, and social institutions. An international perspective is part of this concentration. It focuses both on developing more humanistic forms of organization and social norms, and on mobilizing the alienated and oppressed to obtain equity. Topics include international social welfare, social planning, women's roles, and organizational change.

Concentrators complete a minimum of 6 semester hours of practicum in their concentration. In lieu of either the advanced research course or the final project, students must be related to their concentration.

Satellite Centers

In addition to offerings on the Iowa City campus, the school offers both class work and practicum learning in Des Moines, Sioux City, and Quad Cities satellite centers. Regular School of Social Work faculty are available for distance advising and to teach all required courses.

The centers have three major purposes: to enrich the educational programs of full-time students by providing greater diversity of practice opportunities; to make pursuit of the graduate degree in social work geographically accessible to students unable to relocate to Iowa City; and to provide continuing education opportunities throughout the state for non-degree students.

For full-time students, the general plan is to begin the program in the fall semester in Iowa City. Depending on whether the student chooses a concurrent (three semesters) or block (two semesters) practice, practicum begins in the second or third semester in the program. Some students remain in the Iowa City-Cedar Rapids area for the remainder of their programs, but most are assigned to the Des Moines or Quad Cities Centers. This generally involves the student's relocation.

The Des Moines Center, 115 miles from Iowa City, is the location of the state capitol. It is also the largest city in the state. Many fine practice opportunities are available in state government offices, child and family agencies, mental health programs, and a variety of other settings.

The Quad Cities Center is located on the Mississippi River in Davenport, 60 miles from Iowa City. As part of the Quad Cities metropolitan area of 718,000 people, this center also provides a wealth of practice opportunities available in Iowa City.

Regional and advocacy planning, agencies serving racial and ethnic minorities, and programs for the elderly are just a few examples. Students relocating in the Quad Cities also have the opportunity to commute to Iowa City for some classes and special events.

The Siouxland Center, located in Sioux City in the northwest corner of the state, provides opportunities for part-time degree study and continuing education. It is one of the others in that a full program is unavailable there.

Intensive, short-term, split session courses are offered at the Iowa City campus in the summer to facilitate students from other centers taking on-campus courses.

Part-Time Program

The School of Social Work has one of the largest part-time programs in the nation. Admission and degree requirements are the same as for full-time students but the program includes single parents, working people, and others unable to pursue a degree on a full-time basis to complete the program over a period of time not less than seven semesters (36 months) or more.
Graduate Admissions

The criteria for admission for full-time and part-time study in the M.S.W. program are:

A bachelor's degree from an accredited college or university, with a reasonable distribution of courses in the social sciences and humanities;

At least a 3.0 grade-point average for the junior and senior years of undergraduate study, or for 12 semester hours of letter-graded graduate coursework (exceptions noted below);

Three positive letters of reference, including one regarding academic abilities and one or more regarding social services or other work experience, and

A personal statement from the applicant about his or her interests and career objectives.

In addition, the school prefers that applicants for admission to the M.S.W. program have two years of work experience in social services; it requires personal interviews with applicants for admission to part-time study; and it requires that foreign applicants 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 M.S.W. class with grade-point averages below 3.0. Those who are especially strong candidates on the basis of the other criteria may be selected as admissible. Since the school seeks to maintain a heterogeneous student body, it makes special efforts to admit students representing a diversity of racial, ethnic, and socioeconomic backgrounds. Students with special conditions are also encouraged to apply. Applications for full-time study are accepted beginning September 1 for the next academic year. Applications for part-time study may be made at any time.

Continuing Education

Through the Saturday and Evening Class Program in Iowa City and the School of Social Work's Des Moines, Cedar City, and Siouxland Centers, non-degree students may enroll for courses and workshops. Twelve credits of graduate coursework may be applied to the master's degree requirements for students who later enroll in the program.

Courses

Primarily for Undergraduates

4223 Introduction to Social Work

Social welfare as an ethical issue, social institutions, organizations, and the economics of social work practice; the policies, programs, and services of the social welfare system and the role of government in addressing human needs; and the role of federal, state, and local government in meeting social welfare needs. This course includes a seminar of 40 hours weekly. Prerequisities: English composition or equivalent content of the following courses as 24:22.

42:181 Aging and Social Work

Differential characteristics of aging, aging policies and programs, and practices with the elderly client, including trends in aging, mental health, group work, welfare, aging, family, and social work programs, etc. Prerequisities: Franciscan junior standing.

42:171 Social Work Field Seminar

Individual student field orientation; individual learning; social work ethics; and specific course work directed toward skill development, such as interviewing, plans of action, and negotiation, with emphasis on their application in agency practice. Requires 40 hours of volunteer experience. Prerequisities: 42:141.

42:170 Social Work Process


42:185 Field Experience Seminar

This course is designed for helping students to develop skills in identifying and making on-the-job learning experiences from a variety of placements and evaluating the integration of lessons from prior courses with 12 credits. Prerequisities: 42:180. Corequisities: 42:180.

42:195 Individual Study

Project related to student's interest, carried out under direction of faculty member, sometimes including group participation. May be repeated.

42:190 Honors in Social Work

Supervised independent research. May be repeated. Prerequisities: admission to Honors Program.

42:192 Field Experience


42:194 Senior Seminar


For Graduates and Undergraduates

Courses with numbers preceded by asterisks are required in the M.S.W. program.
43-110 Human Sexuality

43-113 Community Mental Health
An overview of mental health assessment, diagnosis, treatment, and prevention. Emphasis on the history of the mental health movement, mental health legislation and policy making, and mental health practice. Prerequisites: 20-140 or consent of instructor.

43-118 Social Work and Dispensation
Examination of policies and issues related to dispensation among selected subgroups within American society, such as racial/ethnic minorities, women, elderly, children, physically handicapped, mentally retarded, and homosexuals. Prerequisite: 20-110.

43-121 Social Work Practice in Public Social Services
Types of services which occur in the public social services agencies, role of the social worker as advocate, protector, worker, and consultant. Prerequisite: 20-120, graduate standing, or consent of instructor.

43-127 Social Work and Women
Examination of research on minority cultures, manifestations of personal and institutional racism, historical roles of women, methods of operating, rationales in social service delivery systems and community services for women. Prerequisites: junior, senior, or graduate standing.

43-129 Alcoholism and the Social Service
Public and private treatment methods, alcoholism and psychosomatic illness, legal aspects of alcoholism and alcoholics, suicide prevention, process and techniques. Prerequisites: junior, senior, or graduate standing.

43-140 Human Behavior in the Social Environment
Introduces the social work student to various theoretical conceptualizations of human behavior. explores social systems approach as the organization of the course. Prerequisites: 20-120, graduate standing, or consent of instructor.

43-141 Social Work Practice I
Introduces students to a general framework for social work practice. explores the roles of the social worker in the helping process. Prerequisites: 20-140, junior, and senior standing. Prerequisite: junior or senior standing.

43-142 Social Work Practice II
Continues the development of professional skills in social work practice and includes field training and practicum experiences. Prerequisites: 20-140, 43-141, graduate standing or consent of instructor.

43-144 Social Work Practice III
Continues the development of professional skills in social work practice and includes field training and practicum experiences. Prerequisites: 20-140, 43-141, graduate standing or consent of instructor.

43-145 Social Research
Survey research, questionnaire techniques, sampling methods, research design, and methodology. Application of basic statistical techniques and experiences. Prerequisites: senior or graduate standing, or consent of instructor.

43-146 Probate and Family Law
Probate and family law as practiced. Prerequisites: 20-152, 20-156.

43-157 Federal Welfare Policies
Analysis of preferences about welfare policy in relationship to welfare policy practices. Focus on the evolution of federal welfare policies under differing political and social trends underlying different preferences for social welfare programs.

43-164 Law and Social Service Agencies
Administrative law as it affects social service; the difference between administrative law and common law, and the administrative process as it affects social service practice. Prerequisite: 20-112 or consent of instructor.

43-171 Social Work Practice I-Child Welfare
Introduction to the practice of social work in the mental health field. Emphasis on the understanding of the field's activities and how this field interacts with other social services in the provision of services to children. Prerequisite: junior or senior standing.

43-173 Issues in Criminal Justice and Corrections
Analysis of contemporary programs, organizations, structures, and administrative processes in criminal justice, particular corrections, and the social policy which influences the practice of social work in criminal justice. Prerequisite: 20-140.

43-174 Legal Issues in Human Rights
The human rights movement, the history, and the issues of human rights. Prerequisite: 20-140.

43-177 Criminal Behavior
Crisis and psychosocial disorder and the impact of society on the individual. Prerequisites: 20-140 and 43-141, or equivalent.

43-178 Criminal Justice
Research and changes in corrections and rehabilitation. Prerequisites: 20-140 and 43-141, or equivalent.

43-180 Workshop in Social Work and Social Welfare Practice
A workshop for selected workers concentrating the social work practice in public and mental health agencies. Prerequisite: consent of instructor.

43-186 Social Research Methods in the Social Sciences
An introduction to research in the social sciences. Prerequisites: 20-120, 20-140, and 43-141, or consent of instructor.

43-187 Critical Thinking
A seminar in the art of critical thinking. Prerequisite: 20-140, 20-141, or consent of instructor.

43-190 Group Training Process
Designing and developing models for introducing ethical group processes, styles of leadership, and the characteristics of a successful group. Prerequisite: 20-140.

43-200 Leadership in Government and Organizations
An introduction to political science and public administration. Prerequisites: 20-140 and 43-141, or equivalent.

43-210 Human Development Through the Life Cycle
Psychological development of the individual. Emphasis on the development of the personality and the role of the social worker in promoting normal development. Prerequisites: 20-140, 43-141, or consent of instructor.

43-215 Marriage and Family
The interrelationships between marriage and family, and social welfare policy. Prerequisites: 20-140 and 43-141, or equivalent.

43-216 Family Law
The interrelationships between marriage and family, and social welfare policy. Prerequisites: 20-140 and 43-141, or equivalent.

43-219 Probate and Family Law
Probate and family law as practiced. Prerequisites: 20-150, 20-152.

43-220 Federal Welfare Policies
Analysis of preferences about welfare policy in relationship to welfare policy practices. Focus on the evolution of federal welfare policies under differing political and social trends underlying different preferences for social welfare programs.

43-225 Group Leadership in Human Sexuality
Theories and research findings, as they relate to the development and implementation of group leadership in human sexuality. Prerequisites: 43-110 and 43-120.

43-226 Social Services in Industry
Organization and operation of work force and selected groups within the work force, and problems of industrial employees. Prerequisites: 20-140 and 43-141, or consent of instructor.

43-230 Family Law
Principles of law and legal theory. Selected topics in family law. Prerequisites: 20-140 and 43-141, or equivalent.

43-233 Social Welfare Policy in Industry
Organization and operation of work force and selected groups within the work force, and problems of industrial employees. Prerequisites: 20-140 and 43-141, or consent of instructor.

43-235 Educational and Laboratory Sciences
Examination of the educational and laboratory sciences as related to the psychology of the development of the human individual. Prerequisite: 20-140.

43-240 Administrative Communication and Change Advanced Practicum
Philosophy of change as members of professional organizations, examination of principles from communication theory and systems theory, and development of skills in applying principles to the analysis and resolution of organizational and policy problems. Prerequisites: 43-120, 43-141, or consent of instructor.

43-246 Sectional Approach to Social Work and Social Welfare
Sequences in the areas of human behavior, practice, and social welfare policy; social work in social welfare policies. Prerequisite: 20-140.

43-250 Seminar in Social Work and Social Welfare Practice
A seminar in the art of critical thinking. Prerequisite: 20-140, 20-141, or equivalent.

43-251 Critical Thinking
A seminar in the art of critical thinking. Prerequisite: 20-140, 20-141, or equivalent.

43-252 Seminar in the Social Sciences
Survey of selected topics in the social sciences. Prerequisites: 20-120, 20-140, and 43-141, or equivalent.

43-260 Social Evaluation
Principles of evaluation as members of professional organizations, examination of principles from communication theory and systems theory, and development of skills in applying principles to the analysis and resolution of organizational and policy problems. Prerequisites: 43-120, 43-141, or consent of instructor.

43-262 Sectional Approach to Social Work and Social Welfare
Sequences in the areas of human behavior, practice, and social welfare policy; social work in social welfare policies. Prerequisite: 20-140.

43-265 Seminar in Social Work and Social Welfare Practice
A seminar in the art of critical thinking. Prerequisite: 20-140, 20-141, or equivalent.

43-270 Human Development Through the Life Cycle
Psychological development of the individual. Emphasis on the development of the personality and the role of the social worker in promoting normal development. Prerequisites: 20-140, 43-141, or consent of instructor.

43-276 Social Welfare Policy in Industry
Organization and operation of work force and selected groups within the work force, and problems of industrial employees. Prerequisites: 20-140 and 43-141, or consent of instructor.

43-280 Social Work Practice in the Health Field
With or without placement. Prerequisites: 20-140, 43-141, or consent of instructor.

43-286 Sectional Approach to Social Work and Social Welfare
Sequences in the areas of human behavior, practice, and social welfare policy; social work in social welfare policies. Prerequisite: 20-140.

43-287 Critical Thinking
A seminar in the art of critical thinking. Prerequisite: 20-140, 20-141, or equivalent.

43-290 Clinical Social Work Practice
Clinical social work practice in a variety of settings. Prerequisites: 20-140, 20-141, and 43-141, or consent of instructor.
Social Science/LEGAL ARTS

35136 Introduction to Sociological Research
35137 Sociological Research Methods
35138 Introduction to Social Research
35210 Social Problems
35211 Social Problems II
35213 Social Problems III
35214 Social Problems IV
35215 Social Problems V
35216 Social Problems VI
35217 Social Problems VII
35218 Social Problems VIII
35219 Social Problems IX
35220 Social Problems X
35221 Social Problems XI
35222 Social Problems XII
35223 Social Problems XIII
35224 Social Problems XIV
35225 Social Problems XV
35226 Social Problems XVI
35227 Social Problems XVII
35228 Social Problems XVIII
35229 Social Problems XIX
35230 Social Problems XX
35231 Social Problems XXI
35232 Social Problems XXII
35233 Social Problems XXIII
35234 Social Problems XXIV
35235 Social Problems XXV
35236 Social Problems XXVI
35237 Social Problems XXVII
35238 Social Problems XXVIII
35239 Social Problems XXIX
35240 Social Problems XXX
35241 Social Problems XXXI
35242 Social Problems XXXII
35243 Social Problems XXXIII
35244 Social Problems XXXIV
35245 Social Problems XXXV
35246 Social Problems XXXVI
35247 Social Problems XXXVII
35248 Social Problems XXXVIII
35249 Social Problems XXXIX
35250 Social Problems XL
35251 Social Problems XLI
35252 Social Problems XLII
35253 Social Problems XLIII
35254 Social Problems XLIV
35255 Social Problems XLV
35256 Social Problems XLVI
35257 Social Problems XLVII
35258 Social Problems XLVIII
35259 Social Problems XLIX
35260 Social Problems LX
35261 Social Problems LXI
35262 Social Problems LXII
35263 Social Problems LXIII
35264 Social Problems LXIV
35265 Social Problems LXV
35266 Social Problems LXVI
35267 Social Problems LXVII
35268 Social Problems LXVIII
35269 Social Problems LXIX
35270 Social Problems LXX
35271 Social Problems LXXI
35272 Social Problems LXXII
35273 Social Problems LXXIII
35274 Social Problems LXXIV
35275 Social Problems LXXV
35276 Social Problems LXXVI
35277 Social Problems LXXVII
35278 Social Problems LXXVIII
35279 Social Problems LXXIX
35280 Social Problems LXXX
35281 Social Problems LXXXI
35282 Social Problems LXXXII
35283 Social Problems LXXXIII
35284 Social Problems LXXXIV
35285 Social Problems LXXXV
35286 Social Problems LXXXVI
35287 Social Problems LXXXVII
35288 Social Problems LXXXVIII
35289 Social Problems LXXXIX
35290 Social Problems CXX
35291 Social Problems CXXI
35292 Social Problems CXXII
35293 Social Problems CXXIII
35294 Social Problems CXXIV
35295 Social Problems CXXV
35296 Social Problems CXXVI
35297 Social Problems CXXVII
35298 Social Problems CXXVIII
35299 Social Problems CXXIX
35300 Social Problems CXXX
35301 Social Problems CXXXI
35302 Social Problems CXXXII
35303 Social Problems CXXXIII
35304 Social Problems CXXXIV
35305 Social Problems CXXXV
35306 Social Problems CXXXVI
35307 Social Problems CXXXVII
35308 Social Problems CXXXVIII
35309 Social Problems CXXXIX
35310 Social Problems LXIII
35311 Social Problems LXIV
35312 Social Problems LXV
35313 Social Problems LXVI
35314 Social Problems LXVII
35315 Social Problems LXVIII
35316 Social Problems LXIX
35317 Social Problems LX
35318 Social Problems LXI
35319 Social Problems LXII
35320 Social Problems LXIII
35321 Social Problems LXIV
35322 Social Problems LXV
35323 Social Problems LXVI
35324 Social Problems LXVII
35325 Social Problems LXVIII
35326 Social Problems LXIX
35327 Social Problems LXX
35328 Social Problems LXXI
35329 Social Problems LXXII
35330 Social Problems LXXIII
35331 Social Problems LXXIV
35332 Social Problems LXXV
35333 Social Problems LXXVI
35334 Social Problems LXXVII
35335 Social Problems LXXVIII
35336 Social Problems LXXIX
35337 Social Problems LXXX
35338 Social Problems LXXXI
35339 Social Problems LXXXII
35340 Social Problems LXXXIII
35341 Social Problems LXXXIV
35342 Social Problems LXXXV
35343 Social Problems LXXXVI
35344 Social Problems LXXXVII
35345 Social Problems LXXXVIII
35346 Social Problems LXXXIX
35347 Social Problems CXX
35348 Social Problems CXXI
35349 Social Problems CXXII
35350 Social Problems CXXIII
35351 Social Problems CXXIV
35352 Social Problems CXXV
35353 Social Problems CXXVI
35354 Social Problems CXXVII
35355 Social Problems CXXVIII
35356 Social Problems CXXIX
35357 Social Problems CXXX
35358 Social Problems CXXXI
35359 Social Problems CXXXII
35360 Social Problems CXXXIII
35361 Social Problems CXXXIV
35362 Social Problems CXXXV
35363 Social Problems CXXXVI
35364 Social Problems CXXXVII
35365 Social Problems CXXXVIII
35366 Social Problems CXXXIX
35367 Social Problems LXIII
35368 Social Problems LXIV
35369 Social Problems LXV
35370 Social Problems LXVI
35371 Social Problems LXVII
35372 Social Problems LXVIII
35373 Social Problems LXIX
35374 Social Problems LX
35375 Social Problems LXI
35376 Social Problems LXII
35377 Social Problems LXIII
35378 Social Problems LXIV
35379 Social Problems LXV
35380 Social Problems LXVI
35381 Social Problems LXVII
35382 Social Problems LXVIII
35383 Social Problems LXIX
35384 Social Problems LX
35385 Social Problems LXI
35386 Social Problems LXII
35387 Social Problems LXIII
35388 Social Problems LXIV
35389 Social Problems LXV
35390 Social Problems LXVI
35391 Social Problems LXVII
35392 Social Problems LXVIII
35393 Social Problems LXIX
and either
22M:11 Fundamentals of College Mathematics II 3 s.h.
or
22M:20 Elementary Functions 3 s.h.
22C:18 Introduction to Programming with PL/1 4 s.h.
22C:17 Programming with PL/1 3 s.h.

Students with exceptionally strong high school backgrounds in mathematics may substitute 22M:20-25 Calculus I-II for the mathematics option listed above. All majors are advised to take at least one basic course in history and philosophy, and 8 semester hours of coursework at least one of the three departments: anthropology, economics, geography, political science, or psychology. A list of complete requirements for a sociology major is available in the department office.

Departmental requirements are the same for transfer students as for other students. While some courses taken at other colleges are applicable toward the major, the department requires that transfer students majoring in sociology take at least 12 semester hours in sociology at The University of Iowa.

Minors
In addition to its major programs, the department provides supportive coursework and several clusters of courses of value to undergraduate students who wish to combine a minor in sociology with a major in another field, particularly another social science, business administration, elementary education, or nursing. A brochure describing minors in sociology is available in the department office.

Sociology Teaching Major
To major in sociology and qualify for a teaching certificate, the students must complete the following:

All departmental requirements for either a B.A. or B.S. degree;
Two related fields of 12 semester hours each, taken from economics, geography, American history, world history, political science, and/or psychology (20 semester hours required in psychology); and

The professional courses required for certification (23 semester hours).

Sociology courses taken to fulfill the social science core requirements may also be counted toward the sociology teaching major. Other social science or history courses taken to satisfy the social science or historical-cultural core requirements may not be counted toward the hours required in related fields.

Honor's Students
Students who wish to graduate with honors in sociology must be admitted to the honors program, have a departmental honors adviser, complete 34:190 The Development of Modern Social Theory and 34:198 Honors Research in their programs, and take an oral examination upon completion of their honors research.

Graduate Programs
The graduate programs in sociology are directed toward professional careers. Depending upon which program the student chooses, the master's programs prepare the student for doctoral studies or for professional positions applying sociology. The doctoral program has a research emphasis and primarily prepares sociologists for positions in colleges and universities or research in academic, private, or government positions. Opportunities for research, using survey, experimental, and observational methods, are available in the department.

Master of Arts
The M.A. degree in sociology requires 30 semester hours with thesis or 38 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 is more appropriate. All candidates for the M.A. degree must complete 34:201 History of Sociological Theory, 34:202 Sociological Theory, 34:214 Elementary Statistics and Data Analysis, and 34:216 Sampling, Measurement, and Observation Techniques, with grades of B or higher.

M.A. in Criminal Justice and Corrections
This program is designed for individuals desiring to prepare for careers in the criminal justice system. It provides the student with training in the social and behavioral sciences, the administration of justice, counseling techniques, and administrative procedures. The program is administered by the Department of Sociology and has a strong sociological emphasis.

A limited number of students are admitted to the program each year, so a low-faculty-student ratio is maintained. Internships are available with local criminal justice agencies. This program requires a minimum of 45 semester hours and a research paper.

Joint Program in Sociology and Law
A student may obtain a Master of Arts in sociology and a Juris Doctor by fulfilling the basic requirements of both programs. The College of Law will credit up to 12 hours of graduate work taken after entering the joint program toward the 90 hours required for the J.D., even though those hours are also credited toward an M.A. in sociology.

At the discretion of the student's M.A. committee, the Department of Sociology may credit up to 12 hours of law coursework toward the M.A. degree. This cross-credit allows a student to receive the J.D. and the M.A. by taking less coursework than would be necessary if the degrees were pursued independently. This program is highly individualized and allows the student to explore various aspects of the relationship between law and society.

Doctor of Philosophy
The Ph.D. degree in sociology requires a minimum of 72 semester hours of graduate-level coursework, including the core M.A. courses 34:201-34:202 Intermediate Statistics and Data Analysis and 34:217 Theory and Research Design. Candidates must also pass comprehensive examinations and write a dissertation.
All doctoral candidates are examined in the basic tool areas of sociology—theory, history of sociology, methodology, and statistics. In addition, each is examined on one major and one minor area chosen from among the areas currently represented by the faculty, such as social psychology, deviance, criminology, family, social stratification, organizations, theory, methods, and statistics. A detailed statement of regulations for graduate study is available upon request. Prospective doctoral candidates should carefully examine this statement.

Graduate Admission

Admission to graduate study in sociology normally requires a minimum undergraduate grade-point average of 3.0 and a test score of 1,100 from the quantitative plus verbal sections of the Graduate Record Examination. In addition to fulfilling the Graduate College requirements for admission (see the "Graduate College" section of the Catalog), the applicant completes a departmental application form and uses its personal reference forms in obtaining three letters of recommendation.

Applications may be submitted at any time, but should be completed 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.

Admission decisions are based on a composite consideration of prior academic performance, personal reference letters, scores on the Graduate Record Examination (GRE) Aptitude Test, and the applicant's statement of reasons for pursuing advanced work in sociology. The department has no specific undergraduate course requirements for admission, but a background in the social sciences with some mathematical training is useful. A foreign language is not required for admission and there are no foreign language requirements for either the M.A. or Ph.D. degrees in sociology. Inquiries concerning admission should be directed to the Chair, Admissions Committee, Department of Sociology.

Admission to the M.A. program in criminal justice and corrections requires a B.S. or B.A. degree, a grade-point average of 2.75 and a total score of 1000 from the quantitative plus verbal sections of the Graduate Record Examination (GRE) Aptitude Test. Enrollment in this program is currently limited to five admissions per year. A descriptive publication is available at the department office.

Graduate Financial Aid

The Department of Sociology offers three types of awards to graduate students: teaching assistantships, research assistantships, and teaching-research fellowships. Resident tuition is charged to out-of-state students who receive awards. Students who receive assistantships work twenty hours each week for faculty members on either teaching or research assignments. The department may also offer tuition scholarships to some students.

Facilities

The department maintains a card punch and four interactive terminals for communicating with the University's main computer (IBM 370/166 and four PRIME 7500S) and with the University's Hewlett-Packard 2000 educational computer. Also available for faculty and students are the facilities of the Center for Research in Interpersonal Behavior (CRIIB), a data archives unit, and the Iowa Urban Community Research Center (IUCRC). The CRIB facility includes a small-groups laboratory complex with audiocope, videotape, and interational process recording equipment; programming equipment; and a shop for constructing apparatus. The data archives house the results of numerous surveys available to faculty and students for teaching and research purposes. The IUCRC maintains a research library, data bank, and laboratory. Surveys in the data bank are accessible for secondary analysis. (See the "Research Activities" section of the Catalog.)

Courses

For Undergraduates Only

Courses open to freshmen without prerequisites: 34-1, 34-2, 34-20, 34-24, 34-56, and 34-120. All other undergraduate courses are open to freshmen with stated prerequisites.

34 Introduction to Sociology: Perspectives

Examination of how individuals are organized into human societies. Attention is paid to sociocultural aspects of life, in addition to social structure, and their influence on individual behavior, decision making, and the development of social institutions such as work, education, religion, economy, etc. This is partial fulfillment of the social science core requirement.

34-1 Sociology: Social Problems

Examination of social problems, alternative solutions, social problems, and the measurement and analysis of social change. Prerequisites: 34-1 or consent of instructor.

34-20 Theory, Research, and Statistics

Introduction to basic sociological concepts, emophizes sociological thinking, the statement of research hypotheses, and the design and method of empirical research. Prerequisites: 34-1 or consent of instructor.

34-11 Theory, Research, and Statistics

Continuation of 34-10, which is a prerequisite.

34-10 Lap of Social Science

Exploration of selected topics in contemporary philosophy of social science. Prerequisite: 34-1 or consent of instructor.

34-28 Women in Society

Analysis of the roles of women in society, including aspects of interpersonal, structural, and institutional analysis. Prerequisite: 34-1 or consent of instructor.

34-45 Special Topics in the Sociology of Women

Directed study for students interested in pursuing a minor in sociology. Consists of reading, analysis, research, and selected topics in sociology. Prerequisite: 34-1 or consent of instructor.

34-108 Directed Individual Study

Directed study for students interested in pursuing a minor in sociology. May be repeated. Prerequisite: approval of instructor.

34-109 Faculty-supervised Special Research Projects

Prerequisite: written consent of instructor.

Advanced Courses

Social Theory

35-1 Sociological Methodology: Sociological Theory

Comprehensive and critical survey of major sociological theoretical perspectives and frameworks. Focuses on various methodological and practical issues concerning the nature, social methods, and reliability of human social organizations. Prerequisites: 34-1 or consent of instructor.
Minor

A minor in Spanish requires 18 semester hours of coursework in Spanish, including 10 semester hours at the 100-level. The following courses listed above are not applicable toward the elective requirement for the Spanish major who may not be applied toward the minor. No more than 3 semester hours of credit may be applied toward the minor from the following:

36:125 Introduction to Bilingualism 3-5 s.h.
36:217 Chicano Literature 2-3 s.h.
36:218 Introduction to Pop Culture 3 s.h.
36:140 Introduction to Basque Language and Culture 3 s.h.
36:142 Basque Language and Culture II 3 s.h.
36:143 Chicano Language and Culture for Teachers 3 s.h.
36:159 Latin American Studies Seminar 3-4 s.h.

Students who plan to use the Spanish minor in teaching on the secondary level are encouraged to complete a language study through 36:127 Fourth Year Language I or its equivalent, and to elect additional courses in Spanish phonology, and Hispanic literature and civilization.

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 has two foreign study programs, one in Mexico City and the other in Bogota, both of which are for eight weeks in the summer. A limited amount of credit earned in these and other foreign study programs may be applied toward the requirements for the major or minor in Spanish.

Honors

Admission to the honors program in Spanish requires a minimum 3.0 overall grade-point average and a 3.5 average in Spanish. Graduation with Honors in Spanish, in addition to the 30 semester hours major described above, requires the following:

36:211 Honors Spanish Language and Literature 2-3 s.h.
36:212 Honors Spanish Literature 2-3 s.h.
36:213 Honors Spanish Literature and Civilization 2-3 s.h.
36:214 Honors Spanish Literature and Civilization II 2-3 s.h.

Undergraduate Programs in Portuguese

Major in Portuguese

Beginning courses in Portuguese are for students without previous foreign language study or experience. Classes are small, providing for a great deal of individual attention in an informal language-learning environment. Courses, emphasizing speaking and comprehending basic Brazilian Portuguese and incorporating cultural material in the form of films and music.

The undergraduate major in Portuguese requires these courses, or their equivalents, for a total of 24 semester hours of coursework beyond the second-year level.

Language (6 s.h.)

36:117 Advanced Portuguese I 4 s.h.
36:118 Advanced Portuguese II 4 s.h.

Literature (6 s.h.)

36:105 Brazilian Literature I 3 s.h.
36:106 Brazilian Literature II 3 s.h.

Civilization (6 s.h.)

36:115 Brazilian People and Culture 3 s.h.
36:116 Modern Portuguese 3 s.h.

Electives (4 s.h.)

36:303 Modern Brazilian Fiction I: Short Story 2 s.h.
36:304 Modern Brazilian Fiction II: Novel 2 s.h.
36:107 Introduction to Portuguese Literature 3 s.h.
36:108 Black Literature of Portuguese Expression 3 s.h.
36:109 Nineteenth-Century Brazilian Novel 3 s.h.
Minor in Portuguese
The undergraduate minor in Portuguese consists of 18 semester hours in Portuguese, including one of the 180-hour program courses which are taught in English and are of general interest. Students who have taken Spanish can receive credit toward the minor in Portuguese by substituting Portuguese courses for the Spanish courses.

Requirements

- **Required Courses**
  - **Spanish phonology** (either 33:157 or 36:208)
  - **35:208-209 Graduate Spanish Linguistics I-II** 8 s.h.
  - **39:226 Cevaris's Latin** 3 s.h.
  - **35:233 Seminar in Teaching** 1 s.h.
  - **30:251 Medieval Spanish Literature I** 3 s.h.
  - **35:263 Historical Hero-Romance Language I** 3 s.h.
  - **ConFete in Golden Age Literature** 3 s.h.
  - **Course in Modern Spanish Literature** 3 s.h.
  - **Courses in Spanish American Literature** 6 s.h.

Electives: Electives should be selected from the courses listed under “Major in Spanish.”

- **Maximum Study Loads**
  - Maximum course registration is 15 graduate hours during the fall or spring semesters, and 8 graduate hours during the summer sessions. One-semester and one-quarter term courses may register for the maximum study loads. One-hour per week teaching assistants may register for not more than 10 semester hours in the fall or spring semesters, and for no more than 8 during the summer sessions. Additional hours may be taken only with Graduate College approval.

- **Transfer Credit**
  - A maximum of 6 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**
  - All students majoring in Spanish are required to take the courses necessary for secondary teaching certification while completing M.A. requirements in the department.

Examinations
Three written examinations and one oral examination are given. For the written examinations, the student must include at least one topic from two of these three areas: I. Spanish linguistics; II. Medieval literature or Golden Age literature; and III. Modern Spanish literature. Spanish American literature, Spanish American literature or Luso-Brazilian literature.

Doctor of Philosophy in Spanish
Two doctoral programs are available. One is oriented to Hispanic literature. Before his or her comprehensive examination, the candidate must become well acquainted with another Romance language and literature (a Portuguese-Brazilian program is especially recommended). He or she must complete the equivalent of a year of college Latin, and demonstrate a reading knowledge of another approved foreign language.

Qualifying examinations, to be taken during the second semester of residence by all students whose M.A. work was done at other institutions, consist of a two-hour written examination covering two to four library works, or one major literary work and one or two major literary works with an oral examination. A research paper prepared at The University of Iowa.

The second doctoral program provides for specialization in Spanish language and literature with emphasis on language. Before his or her comprehensive examination, the candidate must have completed a course in linguistics and a course in three of the seminars in college Latin, and demonstrated a graduate-level knowledge of two approved foreign languages and a reading knowledge of a third approved foreign language.

In both programs, coursework and individual reading is designed to give the candidate a thorough knowledge of the Spanish language, its literature, and related civilization.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>35:220</td>
<td>Nineteenth-Century Spanish Novel</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>35:221</td>
<td>Nineteenth-Century Spanish Poetry and Drama</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>35:222</td>
<td>Twentieth-Century Spanish Poetry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>35:224</td>
<td>Twentieth-Century Spanish Novel</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>35:238</td>
<td>Twentieth-Century Spanish Essay</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>35:241</td>
<td>Twentieth-Century Spanish Drama</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>35:245</td>
<td>Latin American Literature Four courses (12 semester hours) selected from a minimum of three of the following areas:</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Area A</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35:240 Novel of the Mexican Revolution</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:271-273 Spanish American Novel of the Twentieth Century I-I</td>
<td>9 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Area B</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35:232 Spanish American Essay and Thinkers</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:239 Post-Modernist Spanish American Poetry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:242 Spanish American Literature or the Nineteenth Century</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:243 Spanish American Colonial Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:292 Images of Women in Latin American Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Area C</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35:241 Spanish American Poetry of the Twentieth Century</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:257 Modernism</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Area D</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35:251 Spanish American Drama</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:245 Spanish American Short Story</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>35:254 Spanish American Short Story of Fantasy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Area E</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Course in Brazilian literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Contemporary Language</strong></td>
<td></td>
</tr>
<tr>
<td>35:206</td>
<td>Graduate Spanish Linguistics I</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>35:175</td>
<td>Spanish Phonology I or Phonology component of 35:208</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Literary Theory**

One of the following:

- 35:217 Literary Theory and Explication of Text 3 s.h.
- 35:284 Types of Modern Criticism 3 s.h.

**Professional Training**

- 35:211 Research Methods and Bibliography 2 s.h.
- 35:233 Seminar in Teaching 1 s.h.

**Seminars**

Two 200-level seminars in literature 4 s.h.

**Specialization**

Students in program I desiring to specialize in Medieval literature, Golden Age literature, Modern Spanish literature, Latin American literature, or another approved area may be allowed to substitute courses in that area for one non-required course in each of the other areas. However, it is strongly recommended that whenever possible these courses be taken in addition to those in the basic program, as initial employment opportunities are enhanced by strong preparation in several areas.

**Modern Pentural Literature**

Three of the following (at least one course must be selected) in each of the two centuries; a seminar may be substituted for one of the choices, provided the two-century stipulation is met:

**Comparative Linguistics**

- 35:250 Comparative Romance Linguistics 3 s.h.

**Golden Age Literature**

- 35:223 Drama of the Golden Age 3 s.h.
Modern Peninsular Literature
One of the following:
35:230 Nineteenth-Century Spanish Novel
35:221 Nineteenth-Century Spanish Poetry and Drama
One of the following:
35:233 Twentieth-Century Spanish Novel
35:224 Twentieth-Century Spanish Poetry
35:238 Twentieth-Century Spanish Essay
35:241 Twentieth-Century Spanish Drama
Latin American Literature
Three courses from at least two of the Latin American literature areas listed in Program I
Contemporary Linguistics
35:167 Spanish Phonology or
Phonology component of 35:208
35:208-209 Graduate Spanish Linguistics I-II
Additional graduate language (excluding seminars below) 2 s.h.
Literary Theory
One of the following:
35:217 Literary Theory and Explanation
35:284 Types of Modern Criticism
Professional Training
35:211 Research Methods and
35:233 Seminar in Teaching
Seminars
Two 300-level seminars in language 4 s.h.
Ph.D. Comprehensive Examinations
The doctoral comprehensive examinations assume a general knowledge of Spanish peninsular and Spanish American literature and cover five broad fields, each as a literary genre or a historical literary period, chosen by the candidate so as to include at least two Peninsular and two Hispanic American Areas. Candidates choosing the program with emphasis on languages take comprehensive examinations in two language fields and one literature field, or, with permission of the department, in three language fields. The literature field may be either Peninsular or Hispanic American.

Financial Aid
Teaching and research assistantships are available to qualified graduate students. Normally, two years of such support are available for the completion of a master's degree, and three years beyond the receipt of the M.A. for the Ph.D. As long as a graduate student's studies and performance meet departmental standards, he or she will continue to receive support over a reasonable period of time, but usually not over five years. A student wishing financial support should apply directly to the departmental office.

All graduate students, pursuing an advanced degree in the Department of Spanish and Portuguese, are required to spend at least one academic year as a teaching or research assistant in the department.

Facilities
The language laboratory provides facilities for language learning, teaching, and research. These include standard and shortwave radios, tape recorders, record players, soundproof recording rooms, two drill rooms with 48 dual-channel tape recorders providing a simultaneous master duplicate and student record, an electronic classroom, a soundproof work room, 16mm and 35mm projection equipment and facilities, and a library of tapes and disc recordings. The department offers to its majors a specific course in language laboratory procedures. The department sponsors a 30-minute Spanish-language program, "Saucha en Espanol y Portugal", ("Happiness in Spanish and Portuguese") broadcast weekly over University radio station WUIU.

Spanish Courses
Primarily for Undergraduates
An undergraduate student who has had less than two years of high school study in Spanish will be placed in a first- or second-semester class. A student with two or more years of high school Spanish will be placed in a third- or fourth-semester class. Prospective and entering students should consult with their academic advisor. Students wishing a more advanced placement may take the placement test. Transfer students who have taken college Spanish at other institutions will be placed according to courses previously completed.

A student may not, except with the approval of the chair, take for credit an elementary course after having completed a higher-level course for which the elementary course or its equivalent is a prerequisite.

35:1 Elementary Spanish
35:2 Elementary Spanish
35:3 Intermediate Elementary Spanish
35:4 Intermediate Elementary Spanish

Designed to introduce the broad diversity of Hispanic cultures in Europe and the Americas, with some
the study of speech and hearing processes and their disorders.

Majors of advanced degrees in this field require clinical services for people with speech, hearing, or language problems. These programs are offered in graduate programs, rehabilitation facilities, and elementary and secondary schools. Teach in colleges and universities, and/or 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 Education and Training Board of the American Board of Examiners in Speech Pathology and Audiology.

Undergraduate Programs

Since the master's degree or its equivalent is the minimum level of preparation for persons seeking professional careers in this field, the undergraduate curriculum leading to B.S. or B.A. degrees in speech and hearing science do not qualify an individual to work professionally in this field but have as a primary purpose the preparation of students for graduate work. Hence, the undergraduate programs emphasize the normal processes of speech, hearing, and language. These undergraduate programs may also be taken by persons who want a degree in the College of Liberal Arts but who do not desire a career in this field.

The major requirements for the B.S. or B.A. degree in speech and hearing science are as follows:

3/18 Introduction to Speech and Hearing Processes and Disorders 3 s.h.
102/110 Articulatory and Auditory Phonetics 3 s.h.
110 Anatomy of Speech and Hearing Mechanisms 3 s.h.
112 Fundamentals of Speech Science 3 s.h.
113 Introduction to Hearing Science 3 s.h.
117 Psychology of Language I 3 s.h.
118 Psychology of Language II 3 s.h.
29.115 Physics of Sound and Music 3 s.h.

31143 Introduction to Statistical Methods 3 s.h.
311 Elementary Psychology 4 s.h.
313 General Psychology 4 s.h.
31110 Learning and Motivation in Children 3 s.h.
or 31111 Child Development 3 s.h.
or 3113 Introduction to Clinical Psychology 3 s.h.
or 3110 Personality 3 s.h.
or 31163 Abnormal Psychology 3 s.h.

One additional course in psychology, anthropology, or sociology 3 s.h.

Students majoring in speech and hearing science may also complete or have had the equivalent of college algebra and trigonometry, college physics dealing with light and sound, and a college course in the biological sciences.

Honors Program

The senior-year program leading to the B.B. degree with honors in speech pathology and audiology is open to students who at the beginning of the senior year have completed at least ten semester hours of coursework that can be counted toward a major in the department, and have earned at least a 3.0 grade-point average on all motor courses and all work at the University.

For graduation with honors, the student must complete two semesters of study in residence after entering the senior-year honors program; maintain a minimum grade-point average of 3.0 overall, for all courses in the major, and in the required 6 semester hours of departmental honors courses for seniors (3.07 Honors Seminar and 3.08 Honors Thesis); and be recommended for graduation with honors by the honors thesis adviser and the departmental honors adviser.

At any time during undergraduate study students who have earned a minimum grade-point average of 3.0 and have not attended the University as honors students may apply for honors classification in the College of Liberal Arts and in this department by recommendation of the departmental honors adviser.

Graduate Programs

Master of Arts

The M.A. program in speech pathology and audiology may be a professional program to prepare the student for immediate placement in clinical service positions, or it may be a general program of graduate study leading to additional study for the Ph.D. degree. The programs for the professional M.A. are specified so that upon completion the student will meet the requirements for immediate professional placement, i.e., general M.A. program allows greater flexibility of individual program plans.

The M.A. candidate must have a background of undergraduate courses in speech and hearing science, psychology of language, and human behavior essential equivalent to an undergraduate major in this field at The University of Iowa.

Before he or her first registration in the program, the entering M.A. degree candidate must take preliminary comprehensive examinations covering the speech and hearing coursework considered prerequisite to graduate study. The results of these examinations provide the student and faculty adviser with a basis for developing a plan of study.

Professional Program

The professional M.A. program is designed to prepare clinicians in speech pathology and audiology who are able to function independently in a variety of clinical settings. Persons completing this professional M.A. program meet all academic requirements for clinical certification by the American Speech and Hearing Association.

The department offers the professional M.A. with various emphases. Each requires a minimum total of 38 semester hours of graduate credit for a master's degree in this department. Candidates for the professional M.A. degree are not required to present a thesis, but students demonstrating research aptitude and interest are encouraged to
All candidates preparing for the professional M.A. degree without thesis are required to take final written comprehensive examinations.

Requirements for the professional M.A. degree include the following:

A. All Majors
- 6:116 Neurogenic Speech and Language 3 a.h.
- 6:150 Foundations of Clinical Management 3 a.h.
- 6:152 Auditory Information 3 a.h.
- 6:190 Hearing Loss and Audiology 4 a.h.
- 6:214 Developmental Language Disorders 3 a.h.
- 6:244 Rehabilitation Audiology 3 a.h.

7C-199 Counseling for Related Professions 2-3 a.h.

or
- 1:100 Psychological Issues and Counseling Techniques for the Communication Disorders Professional 3 a.h.

2:10 Senior Seminar: Introduction to Research in Speech and Hearing 0 a.h.

Two advanced seminars or electives 4 a.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 and Hearing Association, and to provide broad supervised practicum experience.

*Equivalent undergraduate course will be accepted as meeting requirements.

B. Speech Pathology, General Clinical Emphasis

Courses listed under A and:
- 3:189 Shunting 3 a.h.
- 3:212 Voice Disorders 2 a.h.
- 3:226 Neuropsychologies of Speech and Language 3 a.h.
- 3:237 Cleft Palate Counseling, research, and elective courses to bring total to at least 38 semester hours.

C. Speech Pathology, Emphasis on Clinical Work in Elementary and Secondary Schools

Courses listed under A and B, and:
- 7E-104 Remedial Methods in Speech and Hearing 2 a.h.

7E-192 Laboratory Practice in Elementary School 5 a.h.

Practicum, research, and elective courses to bring total to at least 38 semester hours.

D. Audiology, General Clinical Emphasis

Courses listed under A, and:
- 7E-120 Fundamentals of Laboratory Instrumentation 3 a.h.
- 7E-181 Audiology Instrumentation Laboratory 1 a.h.
- 7E-140 Psycholinguistics I 1 a.h.
- 7E-240 Introduction to Diagnostic Audiology 4 a.h.
- 7E-241 Advanced Audiology 4 a.h.
- 7E-245 Amplification for the Hearing-Impaired 3 a.h.
- 7E-245 Audiology Procedures for Special Populations 3 a.h.

Practicum, research, and elective courses to bring total to at least 38 semester hours.

E. Audiology, School Hearing Clinician

Courses listed under A and D, and:
- 7E-104 Remedial Methods in Speech and Hearing 2 a.h.
- 7E-192 Laboratory Practice in Elementary School 3-5 a.h.

Practicum, research, and elective courses to bring total to at least 38 semester hours.

Requirements for Employment

A number of states, including Iowa, require a state license in speech pathology or audiology for persons who work in locations other than the public schools. Students who meet the requirements listed above for the M.A. degree also meet the academic requirements for the license in Iowa, as well as in most other states.

Students preparing for clinical positions in public schools must meet the certification requirements of the states in which they plan to work. Consultation of the following courses, in addition to those listed under C or E above, will meet the certification requirements of Iowa and most other states:

7U-120 Exceptional Children 3 a.h.
7X-170 Human Relations for the Classroom Teacher 3 a.h.

7E-104 Remedial Methods in Speech and Hearing 2 a.h.

7E-192 Laboratory Practice in Elementary School 3-5 a.h.

Education electives 11 a.h.

General Program

The general M.A. program, for the student intending to pursue the Ph.D. degree, usually includes a substantial portion of the courses in the professional M.A. program. Additionally, students in the general M.A. program are required to present a thesis and successfully complete a final oral examination.

Doctor of Philosophy

The Ph.D. program provides comprehensive training for the academic and research component in speech and hearing processes and their disorders, and offers intensive specialization in particular clinical problems in which the student may have special interest.

The Ph.D. program is usually planned with specialization in speech-language pathology, audiology, speech science, psychology of language, or hearing science. Within each area the candidate and advisor may provide for further concentration through suitable selection of advanced seminars and research areas. Most students will find that their special interests lie in one or more of the listed areas.

The department encourages candidates with special interests and goals to develop individualized programs in consultation with their advisor and the faculty, provided they clearly define their purposes and present adequate plans of study.

In addition to the M.A. courses listed above, or their equivalents, the following coursework is recommended for the Ph.D. in speech pathology or audiology:

A. All Candidates
- 6:120 Fundamentals of Laboratory Instrumentation 3 a.h.
- 6:119 Language Acquisition 3 a.h.
- 6:215 Experimental Psycholinguistics 3 a.h.
- 3:245 Advanced Laboratory Instrumentation 3 a.h.
Doctoral students who have not written a master’s thesis must complete the equivalent of a master’s thesis project before taking the comprehensive examination for the doctorate. All doctoral candidates must pass the comprehensive examination, usually before the end of the first year of full-time study in the Ph.D. program, and must successfully complete and submit a dissertation based on original research.

Admission and Appointments

The Department of Speech Pathology and Audiology has requirements for admission and graduate appointments which supplement those specified by the Graduate College. A brief summary of these requirements is presented below. For more detailed information contact the department chair.

Application Form

All applicants for admission to graduate study in the Department of Speech Pathology and Audiology must complete the departmental information form, which can be obtained from the department chair.

Admission to M.A. Program

The department bases M.A. admission on the applicant's credentials relative to those presented by other applicants for the same term. The average undergraduate grade-point average above 3.0 does not ensure admission, the department admits few applicants with undergraduate grade-point averages below 3.0.

Completed applications must be received no later than February 1 for enrollment in the next summer session or fall semester. Later applications will be considered only in special situations. Applications for fall study in the spring semester will be considered only under special circumstances and only if they are received no later than the preceding November 1.

Applicants to Ph.D. Program

Completed applications must be received at least two months prior to the beginning of the term for which application is made: approximately April 1 for summer season, July 1 for fall semester, November 1 for spring semester. However, if an applicant wishes to be considered for graduate appointment, the admission application must be filed by the deadline for appointment applications specified below. Applicants will usually be notified of action on their admission within six weeks after their applications are complete.

Applications for Graduate Appointments

The following information applies to all financial appointments administered by the department:

Graduate appointments usually begin only in fall semester. Students beginning study in the spring semester or summer session are considered for appointments for the following fall semester.

Scores on the Graduate Record Examination (GRE) Aptitude Test are routinely required for consideration for financial assistance. Appointment applications must be received by February 1 to insure consideration for an appointment beginning the following fall semester. Initial appointment offers are generally made between March 15 and April 1, however, the department continues to make offers after this time.

Clinical Facilities

The clinical training program derives great benefit from the fact that Iowa City is the health center of the state, and that its health service facilities are readily available for the clinical training of students in speech pathology and audiology.

The University of Iowa Affiliated Speech and Hearing Services is accredited by the Preprofessional Services Board of the American Board of Examiners in Speech Pathology and Audiology. Affiliated services include The University of Iowa Speech and Hearing Clinic, the division of speech and hearing in the Department of Otolaryngology and Maxillofacial Surgery; Speech and Hearing Services, University Hospital School; Speech and Hearing Services, Pediatrics—State Services for Crippled Children; Speech Pathology Service, Child Psychiatry;
Research Facilities

Facilities in the Wendell Johnson Speech and Hearing Center include audiological and psychoacoustic testing, diagnostic and therapy suites, modern equipment for diagnosis and therapy, a closed-circuit television system, a soundproof booth, and laboratories and equipment for acoustic, physiologic, and perceptual studies of speech, and for audiological, psychoacoustic, and neuropsychiatric studies of hearing. Well-equipped mechanical and electronic shops and technicians are available for assistance in research instrumentation.

Cooperation of various departments of the University Hospitals and the College of Dentistry makes additional laboratory facilities available for research on problems in speech and hearing. The participation and cooperation of specialists from various fields, including psychology, child development, education, engineering and medicine, further broadens the scope of research activities in speech and hearing.

Courses

351 Introduction to Speech and Hearing Processes and Disorders
352 Speech, language, and auditory behavior as fields of scientific study; description of major types of speech, hearing, and language disorders.
358 Hearing Seminar
366 Hearing Loss
370 Principles of Speech and Hearing Assessment
374 Auditory and vestibular function tests; measurement of speech and hearing disorders.
379 Foundations of Speech Science
380 Communication disorders; identification; planning services; and implementation of treatment programs for speech and hearing disorders.
390 Principles of Speech Language Pathology and Audiology
396 Communication disorders; the speech and hearing disorder and ways these skills can be enhanced to increase the independence of the hearing impaired.
398 Introduction to Speech and Hearing Processes and Disorders
399 Clinical Decision Making
400 Principles of Speech and Language Pathology and Audiology
401 Speech, language, and auditory behavior as fields of scientific study; description of major types of speech, hearing, and language disorders.
Urban and Regional Planning

Program chair: John W. Parker
Assistant chair: David J. Farkas
Faculty: professors John W. Parker, James M. Hennes, associate professor Douglas H. Lee, Jr., assistant professors Peter B. Parker, David J. Farkas, and associates, including professor Andrew Nelson
Degree conferred: M.A., M.S.

Planning encompasses the development of public policy and the improvement of the quality of life in cities and regions. Planners provide courses of action in response to a variety of problems and opportunities, and assess the likely outcomes of these actions. Planners are involved in diverse issues such as land use, transportation, housing, environmental quality, public services, human services, and economic development.

The University of Iowa planning program is a two-year master's degree program recognized by the American Planning Association. One of the few in the nation to approach planning from the perspective of policy analysis, the program in unique in that it covers all branches of the field within the same framework (represented by the core curriculum), independent of distinctions between physical planning, social planning, or economic planning. This approach enables students to acquire the basic knowledge and understanding and practical skills necessary to be effective planners, regardless of their chosen areas of specialization.

An independent academic unit administratively located within the Graduate College, the program has benefited from 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 program at the University of Iowa bring to each other a wide range of experience and prior education.

Field representation within the faculty, on the basis of previous training, include planning, architecture, public policy, economics, economic research, geography, engineering, political science, and law. The program's students have diverse undergraduate majors, including economics, political science, geography, architecture, landscape architecture, environmental sciences, engineering, anthropology, sociology, urban studies and planning, English, biology, history, classics, and philosophy. Because graduates students in the program number about 90 graduates each year, students get to know each other, and a significant portion of the educational experience takes place in informal discussion.

Recent graduates of The University of Iowa planning program have assumed positions at city, metropolitan, and regional planning agencies, and in state and federal government. The past several years' graduates took positions in all geographic regions of the United States and in several foreign countries.

Curriculum Structure

The planning curriculum comprises a 48-semester-hour, four-semester (plus internship) program encompassing two academic years. The curriculum is based on the general philosophy that planners must develop the theoretical and practical skills that permit them to identify issues and recommend alternative ways of resolving them, as well as the professional skills (e.g., report writing, presentations and briefings, technical management) that allow them to function effectively in various organizational and political environments. Students become well-versed in such topics as microeconomics, quantitative methods, formal presentations and political bodies, and citizen participation.

Core Curriculum

At the heart of The University of Iowa planning program is a unique and integrated core curriculum, which occupies the first academic year. Its purpose is to provide a rigorous foundation for analyzing public and social issues.

The function of the core is to develop a conceptual understanding of the issues present in resource allocation, an understanding of the institutions—the various social, economic, political, administrative, and legal systems—that provide the context for policy analysis and contain public utilities; a capability for identifying social goals and normative criteria for organizing society's resources; and analytical skills, both quantitative (e.g., statistical forecasting, surveys, regional analysis) and nonquantitative (e.g., scenario writing, impact assessment). In total, the core consists of 27 semester hours.

Core Courses

First Semester
102:205 Economics for Policy Analysts I
102:207 Planning Theory and Practices
102:208 Urban Law and Legislation
102:210 Introduction to Analytic Methods

Second Semester
102:204 Collective Decision Making
102:218 Economics for Policy Analysts II
102:220 Intermediate Analytic Methods
102:300 Laboratory in Information Systems and Presentation

Third Semester
102:301 Field Problems in Planning

Courses in the first semester are derived primarily from traditional disciplines (particularly economics, political science, and statistics), together with an introduction to the theories and practice of planning. Later courses require evidence to select, evaluate, and organize information and arrive at conclusions in planning case studies. All students proceed through the core, increasingly reliance is placed on real or realistic planning problems. The intent here is to develop critical judgment and insight in the application of theory through case studies and extended field problems. Students may request a waiver of any core courses on the basis of previous training and experience.

The Sectoral Major

The second year of the program is directed toward the development of an area of concentration, the sectoral major. The purpose is to apply the concepts presented in the core to
specific issues. The student fulfills the sectoral major requirement by completing 9 semester hours of credit in courses offered by various departments and schools of the University, including the planning program.

Currently, there are nine sectoral majors—land use, transportation, housing, human services, health, environmental quality, urban services, regional development, and urban management—and others can be designed by the student, subject to faculty approval.

Sectoral majors are organized around public policy problem areas, rather than emphasizing skills such as quantitative methods, public finance, or community organization. These skills, while important, are taught to all students as part of the core curriculum. As interest dictates, additional skill development can be acquired by selecting the appropriate elective courses.

The balance between core courses, a sectoral major, and elective courses allows students the opportunity to acquire a rigorous and consistent foundation for policy planning, specialized knowledge to enhance entry-level employment prospects, and exposure to other specialties within the planning field.

Other Requirements

A two-part comprehensive examination is required for all students. One portion reviews skills and concepts contained in the core, and the other evaluates the ability to synthesize knowledge within the sectoral major.

A thesis is not required, although a student may petition to write one for up to 6 semester hours of sectoral major credit, in which case successful completion of the thesis satisfies the sectoral major comprehensive examination requirement.

Each student is encouraged to complete an internship in a planning or related agency. Students are required to submit a brief paper summarizing and evaluating the experience. Faculty take an active role in aiding students to secure these internships. Alternatively, the student may elect to complete an additional 2 semester hours of credit, bringing the total to 50 hours.

Joint Programs

Law and Planning

The Urban and Regional Planning Program and the College of Business cooperate in administering a 4-year program which satisfies the degree requirements leading to an M.A. or M.B. in planning and a J.D. in law. This is a reduction of one academic year from the total requirements of the two programs taken separately. Separate admissions to both academic units are required.

Hospital and Health Administration

The Urban and Regional Planning Program and the Program in Hospital and Health Administration in the College of Medicine jointly administer a program for students interested in health policy planning and administration. This 5-year program leads to an M.A. or M.B. in planning and an M.A. in hospital and health administration. Coursework is reduced by one year from the separate requirements of the two programs. Separate admissions to both academic units are required.

Social Work

A concurrent studies program is offered between the Urban and Regional Planning Program and the School of Social Work, leading to an M.A. in planning and an M.S.W. in social work. This joint program prepares students to address the planning and policy issues involved in social service delivery. Twelve semester hours of credit in planning are accepted toward an M.S.W., and 12 semester hours of credit in social work are accepted toward an M.A. in planning. Separate admissions are required.

Urban Transportation

The urban transportation research and training program is offered through the Center for Urban Transportation Studies of the Institute of Urban and Regional Research. The institute is a separately administered unit at the University of Iowa. A transportation certificate is awarded to students in academic departments or programs within the University who satisfactorily complete a prescribed set of courses in transportation. These courses are taught in the planning program and several other units on the campus. The certificate program allows planning students with sectoral majors in transportation to extend their training and obtain an additional credential. A separate admission process is followed for joint candidacy. For particulars, see "Urban Transportation" in this section of the Catalog.

Financial Aid

Opportunities for students in the urban and regional planning program to receive financial support exist through a variety of sources and arrangements: tuition scholarships, program teaching assistantships, contract or grant-funded research assistantships, and internships in local agencies. All but tuition scholarships require from 10 to 20 hours of work per week, under the direction of a faculty member or professional planning staff. Students initiate applications for financial support, and awards are made on the basis of merit, experience, interests, and need. In recent years the program has been successful in providing support to a majority of enrolled students.

Admission

Admission to the Urban and Regional Planning Program is open to individuals having an undergraduate major or area of concentration.

Admission is based on Graduate Record Examination (GRE) Aptitude Test scores (quantitative, verbal, and analytical), letters of recommendation, and undergraduate achievement.

Applicants are requested to have the application form and the above-mentioned materials submitted by March 15 for fall admission, or by November 1 for spring admission. Full admission is granted only when the student has demonstrated substantial evidence preparedness or abilities to spend more than two years.
Urban Growth in Developing Countries

Program coordinator: Michael L. McNulty

A nondegree graduate program of interdisciplinary and cross-cultural seminars and courses focused on problems of development in Third World countries is offered through the Center for Development Studies within the Institute of Urban and Regional Research. Intended to facilitate and coordinate interdisciplinary instruction and research, the program is available to graduate students from departments throughout the University.

In addition to a number of development-related courses offered in specific departments, the program includes a graduate course, 102:215 Urban Growth in Developing Countries, offered in the departments of Anthropology, Economics, Geography, Political Science, Social Work, Sociology, and Urban and Regional Planning. Taught by an interdisciplinary team, the course introduces students to the analysis of urban problems in developing countries from a cross-cultural and interdisciplinary perspective.

A graduate workshop provides a forum for graduate students and faculty members from a variety of departments to meet regularly to discuss problems of mutual interest. Additional information may be obtained by contacting the program coordinator.

Urban Transportation

The University of Iowa Center for Urban Transportation Studies offers a graduate program, including instruction and research, in the interactions of society with the various modes of passenger and freight transportation. Active participation of nine academic disciplines allows the student to assemble a program spanning physical, economic, legal, social, and institutional elements. It is this multidisciplinary exposure which distinguishes the program from more traditional graduate urban transportation programs.

An effort is made to integrate issues of economic evaluation of alternative investments, environmental quality, travel demand, urban spatial structure, land use impacts of transportation, transit management and planning, and distributional equity into a technically sound, integrated framework.

The Graduate Program in Urban Transportation draws upon courses offered by participating departments and is coordinated by the Center for Urban Transportation Studies within the Institute of Urban and Regional Research. Academic certification has been authorized by the Graduate College of The University of Iowa, and is documented on the student's transcript.

Students admitted into the program participate in conjunction with the established degree (M.A., M.S., M.B.A., Ph.D., or J.D.) arrangements of their individual departments, programs, and colleges. Students who are enrolled, or who expect to enroll, in the following University disciplines are invited to apply for admission to the Graduate Program in Urban Transportation: business administration, economics, geography, law, political science, psychology, sociology, systems engineering, and urban and regional planning.

Requirements

The urban transportation program is not a degree-granting program, but instead issues a transportation certificate to students enrolled in degree-granting departments who complete an approved course of transportation study. The student should discuss a course of study in consultation with his or her advisor or the director of the urban transportation program. The course of study must be approved by the urban transportation program executive committee prior to admission to the program.

The course of study should consist of 18 semester hours. Twelve of these 18 semester hours must be in transportation-related courses, and the remaining 6 hours must be in transportation-related courses outside the student's discipline.

Students must be enrolled in the transportation program for a minimum of one year (two semesters) to receive a transportation certificate.

To insure knowledge of basic transportation planning and sufficient depth in a specific area, the student must complete the core courses and fulfill one option as part of the 12 semester hours of required transportation courses. The core consists of 3 required courses:

- 102:111 Introduction to Urban Transportation
- 102:233 Transportation Planning
- 102:265 Transportation Policy and Planning

In addition, students must enroll in 102:311 Transportation Program Seminar for each semester they are enrolled in the urban transportation program; credits for 102:311 do not count toward the 18-credit hour requirement.

Two options are available to transportation program students:

- 102:261 Problems in Transportation and Land Use is required for the transportation policy option; 583:173 Transportation Systems Analysis is required to complete the transportation design option.

The student should make every attempt to take at least one course from each transportation program faculty member, as they represent the various disciplines germane to transportation planning.

Students are strongly encouraged to gain practical experience in transportation research by completing a thesis or major paper, either in conjunction with a course (such as 102:261 Problems in Transportation and Land Use) or a research assistantship.

Research

Research projects in urban transportation typically focus on problems of small urban systems and low density estates. In addition to coursework, student and faculty research activities—surveys, analysis of local transit systems, design and monitoring of small demonstration projects, etc.—students develop a broad base of skills and receive a practice-oriented educational experience in areas such as travel
behavior, transit systems design, transit finance, and input evaluation.

Urban and regional laboratories available for this learning process (Carpinteria, town City, Cedar Rapids, Quell Cities, and Johnson County) provide an attractive range of smaller urban and regional transportation systems within which to study travel behavior and transit planning. Findings from local research are compared to those obtained elsewhere.

All students financially supported in the program participate in transportation research at the center; failure is provided for students to develop their own research activities.

Financial Aid

Fellowships, research assistantships, tuition scholarships, and summer assistantships are awarded on a competitive basis, with the level of financial support ranging from quarter-time research assistantships to half-time research assistantships. All out-of-state students receiving research assistantships are eligible for in-state tuition. Students receiving financial support during the academic year are eligible for half-time summer research assistantships, as funding permits; those assistantships are generally awarded for two months.

The financial support listed above does not cover all potential sources available within the University, but only indicates the typical levels of financial support available within the Center for Urban Transportation Studies.

Admission

Application for admission to the Graduate Program in Urban Transportation is made by submitting a duplicate University application form, two letters of reference, and a brief statement relating the nature and extent of the applicant's interest in urban transportation.

Women's Studies

Program chair: Carol de Saint Victor
Faculty: professors Daniel L. Becker (Communications and Theatre Arts), Linda Ketter (History), J. Kenneth Hurst (Philosophy), Frederick McDowell (English), Marjorie McDowell (Religious Studies) associate professors Florence Bore (English), Ruth A. Brandwein (Social Work), Isabell P. Cusimano (Economics), Don C. Fendes (Music Education); Marlene Math (Chemistry), Juanita E. Maize (Political Science), Karen M. Ford (Business), Cynthia A. Garv (Chemistry), John M. McLean (Secondary Education)

Student representatives: Michelle N. Riss (Humanities), John M. Dickson (Science), Anna A. Whitney (Business), Sean A. Seabury (Science)

The Women's Studies Program is a multidisciplinary liberal arts program which is engaged in developing a body of knowledge about women in the humanities and social sciences and institutionalizing that knowledge within the University community. The term "women's studies" does not connote segregated education for women but emphasizes teaching and research about women which is of intrinsic interest to all students. This new academic dimension in education forms a cumulative pattern of learning about women and supplements neglected areas of study in the existing curriculum, raises provocative intellectual questions, and opens wider the quest for truth about the human condition.

Undergraduate Study

Undergraduate students may complete a minor in women's studies by taking at least 15 semester hours in departmental courses associated with the program, including at least 12 semester hours in upper-level courses (numbered 100 or above), and maintaining at least a 2.0 grade-point average in these courses.

Students enrolled in the Bachelor of General Studies program may choose a special area of concentration in women's studies.

Undergraduates may also elect women's studies courses from those listed below.

Graduate Study

Graduate students in master's or doctoral programs may choose a comprehensive area in women's studies within a dissertation. Graduate students who wish to pursue the Ph.D. in women's studies may do so by filing a plan of study for the ad hoc interdisciplinary Ph.D. through the Graduate College.

For information on faculty members in varied departments who will direct graduate study, contact the Women's Studies Program, 306 English-Philosophy Building.

Associated Courses

The departmental courses listed below are associated with the Women's Studies Program.

For detailed descriptions of the courses, consult the appropriate department, school, or program in the Catalog.

Since the topics of some courses change from year to year, students should refer to the Schedule of Courses to determine whether the topic of the course for a given semester relates to women's studies. For example, 482 American Spouses may take less than its topic for the semester women and work: 1H:190 "themes in Art History may deal with women artists of the twentieth century, and 8:178 Literature and Philosophic Thought might explore the origins of British feminist thought.

In addition to courses listed in the regular course schedule, women's studies courses for University credit are offered by the Saturday and Evening Class Program and by correspondence study.

Afro-American Studies

45-128 The Black Woman in America

American Studies

45-2 American issues
45-3 Women in American Culture
45-4 Family and Sex Roles in American Life
Anthropology
112:156 Women's Roles: Cross-Cultural Perspectives

Art and Art History
1H:190 Themes in Art History

Asian Languages and Literature
353:187 Women in Asia
39:193 Asia: Half the World

Classics
14:103 Women in Antiquity

Core Literature
11:15 The Literary Presentation of Women

Counselor Education
7C:112 Human Sexuality
60:112, 96:112
7C:145 Sex Role Stereotyping and Socialization in Education
7C:150 Psychological Aspects of Women's & Men's Roles
7C:180 Workshop in Counselor Education
7F:110 The Evolution of Women's Roles in Education

English
8:110 Selected Authors
8:114 American Regional Literatures
8:125 Modern British and American Poetry
8:131 The Narrative Tradition
8:140 Contemporary Scene in Fiction
8:157 Biography and autobiography
8:161 Women in Literature
8:169 Changing Concepts of Women in Literature
8:178 Literature and Philosophic Thought
8:179 Literature and Society
8:199 Special Project for Undergraduates
8:434 Seminar in Twentieth-Century British Literature

French
9:107 Themes in French Literature
9:140 Studies in the Novel

German
12:123 Women in German Literature

History
16:108 Society in Traditional Europe
16:109 Society in Modern Europe
16:173 Families and Communities in U.S. History
18:162 Studies in Women in America After 1870
18:258 Readings: Women in European History
18:264 Sammler: History of American Woman
18:267 Readings: History of American Woman

Home Economics
17:112 Personal Financial Management
17:113 Marriage and Family Interaction
17:118 Sexuality and the Family

Law
9:126 Discrimination in Employment
9:130 Sex Discrimination Law

Literature, Science, and the Arts
32:194 Approaches to Woman's Studies

Nursing
96:106 Historical, Philosophical, and Social Foundations of Nursing

Physical Education
28:108 Principles of Athletic Administration
28:153 Sex Role Socialization Through Physical Education and Sports
28:167 Psychoph-Social Dimensions of Sport
28:242 Seminar: Health Concerns of Women
28:264 History of Women in Sports

Psychology
31:118 Psychology of Sex Differences

Rhetoric
15:3 Rhetoric

Social Work
42:273 Women and Social Change
42:281 Social Work Practice: Selected Aspects

Sociology
34:108 Women and Society: Introduction to Women's Studies
34:182 Courtship, Marriage, and Alternative Life Styles
34:180 Economic and Political Development: Women's Roles
34:188 Directed Individual Study

Spanish and Portuguese
35:140 Introduction to Basque Language and Culture
35:141 Images of Women in Hispanic Literature
35:142 Basque Language and Culture II

Speech and Dramatic Art
288:142 Film and Ideology
330:160 Film Styles and Genres

Zoology

Department of Zoology, University of Wisconsin

Graduate Program
The graduate program in zoology provides a broad range of study and research opportunities leading to M.S. and Ph.D. degrees in the fields of zoology and physiology. Students may further specialize in research and teaching in a variety of areas, including biology, ecology, evolution, genetics, immunology, marine biology, neurobiology, plant biology, and zoology.

Faculty

John D. Boles

Undergraduate Program
The undergraduate degree program in zoology provides a broad range of study and research opportunities leading to a variety of career options in fields such as biological science, environmental science, conservation, and education. Students may further specialize in research and teaching in a variety of areas, including biology, ecology, evolution, genetics, immunology, marine biology, neurobiology, plant biology, and zoology.
college, secondary, and primary schools), or health professions (medicine, dentistry, paramedical practice, medical technology, nursing, dental hygiene, physical therapy, etc.).

The basic courses offered in the department serve both its own majors and others planning to enter health-related professions, or fields such as psychology, anthropology, and sociology, as well as students in other fields who have a cultural interest in biological science.

A one-semester introduction, 37:3 Principles of Animal Biology, stresses the major concepts and is ordinarily the first course taken in the zoology department. Majors must also take basic courses in genetics (usually immediately following the introductory course), evolution, and cell physiology.

Beyond this "core" curriculum, the student has a virtually unrestricted choice of 100-level courses in zoology, to a minimum of 33 semester hours. A student may substitute 100-level coursework in other areas of natural science or in mathematics (exclusive of the specific course requirements listed below) for up to 8 semester hours of the 33-semester-hour total required in zoology. Courses required for a B.A. or B.S. degree in zoology are:

In other departments:

- 69:10 Expository Writing 3 s.h.
- 225:25 Calculus I 4 s.h.

or

- 225:16 Calculus for the Biological Sciences 3 s.h.

- 225:35 Engineering Calculus I 4 s.h.

or

- 4:13-14 Principles of Chemistry I-II 6 s.h.
- 4:15-16 Chemistry Laboratory I-II 2 s.h.
- 4:121 Organic Chemistry I 3 s.h.

or

- 229:12 The Chemistry of Biological Materials 3 s.h.

29:17-18 Introductory Physics I-II 8 s.h.

or

- 26:11-12 College Physics 8 s.h.

Total 28-29 s.h.

In zoology:

- 37:3 Principles of Animal Biology 5 s.h.

- 37:126 Fundamental Genetics 3 s.h.

- 37:126 Fundamental Genetics Laboratory 2 s.h.

- 37:126 Cell Physiology 4 s.h.

- 37:131 Evolution 4 s.h.

Total 18 s.h.

Electives in zoology, another science, and mathematics 16 s.h.

Courses which may be used to fulfill the 33-semester-hour requirement in zoology include 37:3 Principles of Animal Biology and any course numbered 100 or above, excepting 37:128 A Planet in Crisis and more than 3 semester hours from 37:196 Honors Laboratory Research, 37:197 Honors Readings in Zoology, 37:196 Honors Seminar in Zoology, 37:199 Introduction to Research.

In addition, up to 8 semester hours of courses beyond the requirements in other natural sciences and mathematics may be substituted, subject to the following limitations:

Courses taken in the departments of Botany, Chemistry, Geology, Physics, and in practical departments of the College of Medicine must be numbered 101 or above; any such 100-level course may be used except 121:125 A Planet in Crisis and other comparable courses intended primarily for nonscience students. Any course taken in the Division of Mathematical Sciences must have 225:26 Calculus I as a prerequisite. Students are encouraged to take courses in zoology and other sciences beyond the required minimums.

Minor

A minor in zoology requires a minimum of 16 semester hours of zoology courses, of which 12 semester hours must be in advanced courses numbered 300 or above, except that 37:128 A Planet in Crisis may be counted as an advanced course, and only 3 semester hours of credit may be counted from 37:197 Honors Readings in Zoology, 37:196 Honors Seminar in Zoology, or 37:199 Introduction to Research.

Honors

Students in the college-wide honors program may earn an honors degree in zoology as completed on at least 6 semester hours in 37:196 Honors Laboratory Research, 37:197 Honors Readings in Zoology, and 37:198 Honors Seminar in Zoology.

Introduction to Research

The department offers 37:199 Introduction to Research to acquaint seniors majoring in zoology with the nature of practicing scientists' work, through association with one of the department's research groups in experiments, discussion of current research, study of specialized topics, and attendance at research lectures.

Graduate Programs

The graduate programs of the department are designed to prepare students for different kinds of professional activities, including teaching at various levels, participation in research in private, educational, or governmental laboratories, or service involving some planning or administrative functions. More than 80 percent of the doctoral students graduating from this department in the last two decades have been engaged in college or university teaching. A substantial number of students completing their training with an M.S. degree have obtained technical or professional positions, some of which require independent responsibility in performance or planning.

Prior to registration in August, all new graduate students in zoology take a diagnostic examination covering topics in developmental biology, genetics, and physiology with an emphasis on cell physiology, evolution, and ecology. On the basis of examination results, students may be excused from further work in one or all of these fields, or required to take specific courses to enhance their backgrounds in these areas. The student must make up any deficiencies in mathematics, chemistry, or physics during the first year. A student with a bachelor's degree other than biology or zoology may request modification of certain of the area requirements; the student's degree
committee will decide whether the student may waive portions of the requirements. All members of the faculty in zoology engage in research. Areas of departmental research include cell biology, developmental biology, genetics, molecular biology, neurobiology, ecology, behavior, physiology, and parasitology. Most projects have an auxiliary aspect involving work in other departments, sometimes with joint sponsorship of the faculty in those departments.

For purposes of graduate student advising, research in zoology is categorized in four general areas: developmental biology, ecology and behavior, genetics, and physiology. Each student selects one of these general areas for his or her concentration, and is advised by a committee of faculty members in that area.

Master of Science in Zoology

The M.S. degree with thesis requires 30 semester hours of graduate credit and a thesis based on original research. Ordinarily 6 to 8 semester hours are assigned to thesis research and writing. The remaining hours are to be selected in consultation with the student’s advisory committee, and the choice of courses will be tailored to the student’s background and career goals.

The student can receive credit for work done here or is required to take on the basis of the diagnostic examination (see “Orientation” below), but not for courses required by the admissions committee to make up undergraduate deficiencies. After the thesis is accepted, the candidate must pass an oral examination based mainly on the work reported on the thesis and on related subject matter.

The M.S. degree without thesis requires 34 semester hours of graduate credit and a thesis or research report. No more than 4 semester hours of credit may be granted for the research report. Credit may be earned in graduate courses in zoology or cognate sciences; these courses are determined in consultation with the student’s thesis committee and 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 zoology required to make up deficiencies revealed by the diagnostic examination (see above), may be included in the 34-semester-hour minimum if approved by the advisory committee. On completion of the hours requirement and acceptance of the research report by the student’s faculty advisor, the student must pass a written examination covering his or her graduate program in zoology, including the area of the student’s report.

Master of Science in Biology

The M.S. program with thesis requires 30 semester hours of graduate credit. Ordinarily 6 to 8 semester hours apply to thesis research and writing. 6 to 12 semester hours to graduate courses in zoology, 6 semester hours to graduate courses in botany, and the remaining semester hours to free electives. Following acceptance of the thesis, the candidate must pass a written examination covering graduate programs in botany and zoology. This is followed by an oral examination based mainly on the work reported in the thesis.

The botany and zoology departments also offer a 34-semester-hour program leading to the M.S. in biology, without thesis.

Doctor of Philosophy in Zoology

Each Ph.D. student’s formal course or proficiency requirements are determined by his or her departmental advisory committee on the basis of the student’s background and current and prospective research interests.

The Ph.D. also determines what portion of the formal coursework or proficiency requirements the student must complete before taking the comprehensive examination. In this examination, the student is expected to demonstrate a knowledge of the fundamentals of zoology and a mastery of one or two specialized fields in zoology.

The student’s research culminates in his or her preparation of a dissertation, whose acceptance by the department must precede the student’s final examination. The examination covers the thesis and the specialized field the thesis represents.

Graduate Financial Aid

Nearly all of the graduate students in the department receive some support, the largest number from teaching, assistantships, scholarships, and research assistantships, provided by the University or by individual research grants administered by faculty members.

Stipends and full tuition are available in federally-funded cell and molecular biology, and neurobiology training programs administered by the department. Two of these programs support postdoctoral fellows. Support through interdisciplinary programs in geometric (predoctoral) and cancer (postdoctoral) is also available.

The department also participates in the University-sponsored program of teaching-research fellowships. Students who apply for any departmental aid may be considered for others, if the reviewing committee considers them eligible. The department provides some support each summer for students who arrange for training at marine laboratories on the coast, or at other appropriate summer stations.

Most assistantships and other appointments for the following academic year are filled by April 1, but opportunities occasionally exist for appointments at other times, including the beginning of the fall semester. Requests for appointment should include a statement of research interest, if such interest has been defined at the time of application.

Admission

An applicant for graduate admission should have a grade point average above 3.0 and a Graduate Record Examination (GRE) Aptitude Test (verbal and quantitative) score above 1300. The applicant should also take the Graduate Record Examination advanced biology test, and submit his or her score. Although the department prefers applicants who have completed undergraduate programs much like its own, it will consider applicants with
Iowa Lakeside Laboratory

Courses for the Undergraduates

371 Principles of Animal Behavior 5 s.h.

373 Arthropods: Insects, Mammals, Reptiles, Amphibians, Fishes, Insects, and Other Invertebrates, including Protists, and Special Faculties for Research with Viruses, Fruit Flies, and Marine Organisms.

Special Facilities

The department is housed in a cluster of contiguous buildings. It has animal care facilities for mammals, birds, reptiles, amphibians, fishes, and insects and other invertebrates, including Protists, and special facilities for research with viruses, fruit flies, and marine organisms. It has walk-in environments for environmental chambers for special culture or animal care needs.

There are four transmission electron microscopes, including one for teaching and student research purposes, and one with a high resolution capacity. The department also houses the scanning electron microscope facility of the university.

The department is equipped to carry out research in all areas in which graduate teaching is conducted. Light microscopes of a variety of types are available, including those with phase contrast and polarizing capabilities, and those with Nomarski optics. Centrifuges of various sorts, including refrigerated, high-speed, and ultra-high-speed models, are available.

Other special equipment includes electrophoresis and x-ray tomography apparatus; electron amplifying and recording equipment for neurophysiological studies; a PDP-12 computer, and other desk-top computers; gas-flow and liquid aspiration systems for radiocarbon dating and analysis, including gas-flow chromatograph systems and a gas-flow counter; constant temperature baths with units of various types for metabolism and growth studies; ovens and incubators; recording ultraviolet and visible spectrophotometers; densitometers and electronic scale recorders; instruments and a field vehicle for field work in physical ecology, water bodies, aquatic, and the "estared ocean"; micrometeorographs; tides and current meters; and recorders.

Labs are also equipped for advanced work which calls for specialized biochemical, biophysical, cytological, or physiological techniques.

For Undergraduates and Graduates

372 Comparative Vertebrate Zoology 4 s.h.

373 Vertebrate Zoology Laboratory, 1 hour. Laboratory, 1 hour. 795. Prerequisite: 372. 3 s.h.

374 Introduction to Developmental Biology 4 s.h.

375 Vertebrate Zoology Laboratory, 1 hour. Laboratory, 1 hour. 795. Prerequisites: 372 and 374. 3 s.h.

376 Cell Reproduction 4 s.h.

377 Plant Reproduction 4 s.h.

378 Plant Reproduction Laboratory, 1 hour. Laboratory, 1 hour. 795. Prerequisites: 372 and 374. 3 s.h.

379 Environmental toxicology 4 s.h.

380 Environmental toxicology Laboratory, 1 hour. Laboratory, 1 hour. 795. Prerequisites: 372 and 374. 3 s.h.

381 Environmental toxicology Laboratory, 1 hour. Laboratory, 1 hour. 795. Prerequisites: 372 and 374. 3 s.h.
College of Business Administration

The college is organized into seven academic departments: Accounting, Economics, Finance, Industrial Relations and Human Resources, Management Sciences, Marketing, and, jointly with the College of Education, the Department of Business Education.

The undergraduate and graduate programs of the college are fully accredited by the American Assembly of Collegiate Schools of Business. Research, executive development, and continuing education activities are supported by the external programs of the college: Industrial Relations Institute, Institute for Economic Research, Institute for Entrepreneurial Management, Institute for Insurance Education and Research, Labor Center, and Management Center.

Bachelor of Business Administration

The college offers the Bachelor of Business Administration (B.B.A.) degree in all seven departments. The B.B.A. student completes background studies either in the College of Liberal Arts at The University of Iowa or in another institution, and usually enters the College of Business Administration as a junior.

The college’s B.B.A. curriculum requires 120 semester hours for graduation, with at least 48 semester hours in business courses and at least 48 semester hours in general education. Degree specialization is effected through the student’s option for a designated major or area of concentration.

The last 30 (or 45 of at least 80) 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 8 semester hours of credit in the student’s major or 6 semester hours in each area of concentration, must be earned at The University of Iowa.

A student who has not satisfied the quantitative methods, psychology/sociology, accounting, and economics requirements when admitted to the college must undertake them in the first enrollment and continue them until successfully completed. In general, students should complete all common requirements by the end of the junior year.

To graduate, the B.B.A. candidate must have at least a 2.0 grade-point average in all coursework, in all coursework attempted at the University, in all business and economics coursework attempted, in all business and economics coursework attempted at the University, in all coursework attempted in the major or area of concentration, and in all coursework attempted at the University in the major or area of concentration.

Common Requirements

The B.B.A. candidate must satisfy these minimum common requirements:

- *Rhetoric-communications* 6 a.h.
- *Literature* 6 a.h.
- *Natural sciences (excluding mathematics)* 3 a.h.
- *Principles of psychology or sociology* 3 a.h.
- *Sociology* 3 a.h.
- *Quantitative methods* 8 a.h.
- 6 A. in Economics or Financial Accounting 3 a.h.
- 6 A.2 Introduction to Managerial Accounting 3 a.h.
- 6 E.1 Principles of Economics 4 a.h.
- 6 E.2 Principles of Economics 4 a.h.
- 6 F.15 Introductory Financial Management 3 a.h.
- 6 M.31 Introduction to Marketing 3 a.h.
- 6 L.47 Introduction to Law 3 a.h.
- 6 K.30 and 70 Computer Analysis 3 a.h.

Dean: A. Richard Zecher
Associate dean: Collin E. Bell
Assistant dean: Ernest V. Zucker
Degrees offered: B.B.A., M.B.A., M.A., Ph.D.
One of these courses fulfilling the requirement for a course in administrative processes under uncertainty.

6L:155 Business Policy 3 s.h.
6E:155 Business Policy 3 s.h.
6F:120 Managing the New or Small Business 3 s.h.

Consult the college's undergraduate office concerning methods for meeting the requirements listed above.

In addition, the student must complete a major area of study or two areas of concentration. The requirements for a specific major are established by the departments of the college.

An area of concentration consists of a combination of at least three related courses (9 semester hours), selected by the student to meet a specific academic or career objective. Two courses in each area must be offered by the College of Business Administration.

The student selecting areas of concentration to meet graduation requirements must submit his or her proposal to the undergraduate committee for approval prior to the start of the senior year.

An undergraduate student in the College of Business Administration may elect to complete a minor in another college of the University. For the minor requirements, the student should consult with the department in which he or she wishes to minor. To have the minor recorded on his or her transcript, the student must inform the Registrar's Office when applying for the degree.

Business Minor

Students majoring in another college or the University may elect a minor in business administration. Students must meet the general admission requirements of the College of Business Administration (listed under "Program Requirements for Undergraduate Study") to be considered for admission to the business minor program. The courses listed below will satisfy all requirements for the minor in business administration:

A computer programming course 3 s.h.
A course in mathematics numbered 251:47 or higher 3 s.h.

A course in statistics numbered 225:6 or higher 3 s.h.
Principles of microeconomics 3 s.h.
Principles of macroeconomics 3 s.h.
6A:1 Introduction to Financial Accounting 3 s.h.
6A:2 Introduction to Managerial Accounting 3 s.h.
8M:31 Introduction to Marketing 3 s.h.
8F:16 Introductory Financial Management 3 s.h.
8L:81 Administrative Management 3 s.h.
8L:47 Introduction to Law 3 s.h.

"Must be taken" in junior or senior year.

Interested students should complete or be registered for the first seven courses listed above before applying for admission to the business minor program. The first seven courses listed above may be used to satisfy elective hours toward a baccalaureate degree and in some instances specific College of Liberal Arts requirements. Admission to the program is limited and meeting minimum standards does not ensure admission.

The requirements for a minor in business administration may also be satisfied by taking the 180 semester hours of M.B.A. core courses during the senior year.

Credit by Examination

Students may earn up to 32 semester hours of credit by examination. Selected tests from the College-Level Examination Program (CLEP) of the College Entrance Examination Board are used. It is possible to receive exemption with or without credit for some of the common requirements of the college.

Information on the CLEP examinations is available from the Liberal Arts Advisory Office.

Maximum Schedule

Course schedules of more than 18 semester hours for a semester or 90 for a summer session require approval of the dean.

Pass/Fail Grading

Of the total semester hours required for the B.B.A. degree, up to 60 may be taken on a pass/fail basis with the consent of the adviser and instructor. However, a student may not count more than 16 semester hours of pass/fail credit in his or her last 60 semester hours of coursework.

For courses taken on a pass/fail basis, an earned grade of C or above is recorded as a P; otherwise, the grade earned (D or F) is recorded.

Second-Grade-Only Option

Unless obvious regression is involved, and with the permission of the student's dean, a student may be permitted to repeat a University course and have only the grade and credit of the second registration used in calculating his or her cumulative grade point average. This option may be applied to a maximum of 15 semester hours of work.

Admission

The college normally admits undergraduate students at the beginning of their junior year. Second-semester sophomores may be admitted if an accelerated program record has been established. Unconditional admission requires at least a 2.50 grade point average (A=4) in all college-level courses undertaken at the University of Iowa and all business and economics courses. The applicant should have satisfied the following common requirements: mathematics, English, psychology/sociology, quantitative methods, accounting and economics, and either history-cultural or literature.

No more than 60 semester hours, or equivalent, of transfer credit will be accepted for a student transferring from a two-year institution. Transfer credits for business and economics courses taken at the University of Iowa and sophomores years are counted toward the B.B.A. degree only if such courses are normally offered at lower division courses at the University of Iowa.

Fulfillment of the minimum requirements does not ensure admission. The
examinations or equivalent coursework of high quality. In all cases, a minimum of 33 semester hours of graduate work is required.

Foundation Courses (27 semester hours)

6A:192 Accounting—M.B.A. 3 s.h.
6K:193 Computer Methods—M.B.A. 3 s.h.
6F:194 Managerial Finance—M.B.A. 3 s.h.
6L:195 Management of Organization—M.B.A. 3 s.h.
6M:196 Marketing Management—M.B.A. 3 s.h.
6K:197 Quantitative Methods—M.B.A. 3 s.h.
6L:198 Society, Law, and Business—M.B.A. 2 s.h.

Examining Courses (27 semester hours)

6E:190 Consumer and Firm Behavior 3 s.h.
6E:191 National Income Analysis 3 s.h.

In the M.B.A. integrated core and applied core courses, the student continues the broad study begun in the sequence of foundation courses listed above and pursues in greater depth and breadth the study associated with his or her own career objectives.

Following are the integrated and applied core course requirements, (27 semester hours) and the area of concentration requirement (6 semester hours).

Integrated Core (18 semester hours):

6A:116 Managerial Accounting—M.B.A. 3 s.h.
6K:281 Administrative Science I—M.B.A. 3 s.h.
6L:286 Administrative Policy—M.B.A. 3 s.h.
6K:285 Administrative Policy—M.B.A. 3 s.h.
6K:271 Statistical Methods—M.B.A. 3 s.h.
6L:272 Managerial Economic Theory—M.B.A. 3 s.h.
6R:276 Operations Research—M.B.A. 3 s.h.

Applied Core (9 semester hours):

Three of the following, or two of the following and an approved elective:

6L:256 Industrial Relations—M.B.A. 3 s.h.
6K:280 Management Information Systems—M.B.A. 2 s.h.

Area of Concentration (6 semester hours)

In addition to courses required of all students, each individual must select, with the assistance of the M.B.A. advisor, an area of concentration which includes at least 6 semester hours of coursework in that area. Areas of concentration include administrative studies, finance, industrial relations and human resources, management systems, and managerial accounting and marketing.

Master of Arts in Business Administration

While the M.B.A. degree program prepares students for professional administrative careers in the business or public sector, the Master of Arts degree program in business administration is designed for the student seeking specialization in one of several areas of business administration. In addition, it permits a research emphasis which then qualifies students for research or teaching positions or employment in a business-related position. The program is available to both thesis and nonthesis bases and is sufficiently flexible to permit specialization according to the student’s interests and objectives. The students may select a major in administrative studies, finance, industrial relations and human resources, insurance, management systems, and marketing. The minor may be developed from approved courses in combination with the College of Business Administration or from outside the college.

All students in the M.A. programs must satisfy the common core of knowledge requirement of the American Assembly of the Collegiate Schools of Business (AACS). This means that the candidate's undergraduate or graduate coursework must include study in accounting, quantitative methods, organizational behavior, management, finance, marketing, and the economic

Interdepartmental Graduate Programs

Master of Business Administration

The Master of Business Administration (M.B.A.) program is designed for individuals preparing for professional administrative careers in the business or public sector. The program advances career opportunities for the individual and at the same time provides industry and government with the professional personnel required in a dynamic economy.

A special program, the executive M.B.A. program, also leads to the Master of Business Administration degree. Applicants are carefully screened so that entry into this program is limited to experienced executives who want to broaden their management skills without interrupting their professional careers. coursework in the executive M.B.A. program is presented in two academic years.

A senior student in the College of Liberal Arts who qualifies for admission to the M.B.A. program can use his or her electives during the senior year to satisfy most or all of the core course requirements of the M.B.A. program. This enables the student to receive the undergraduate degree at the end of the fourth year of study and the M.B.A. degree at the end of the fifth year.

The M.B.A. curriculum is designed for candidates whose undergraduate majors were in liberal arts, science, engineering, or other nonbusiness areas, as well as for graduates of schools or college of business administration. For the student who has taken no prior business administration courses, 6th semester hours of coursework are required. For the student with prior coursework in business administration, some of the foundation courses may be waived on the basis of exemption.
and legal environment pertaining to profit and/or non-profit organizations.

Requirements for the Master of Arts degree with thesis include:

- Major area: 24 s.h.
- Minor area: 6 s.h.
- Economic theory and/or organizational behavior: 6 s.h.
- Electives: 6 s.h.
- Thesis: 3 s.h.
- Total: 39 s.h.

The minimum number of semester hours for either program is normally earned in courses exclusively for graduate students (200 level); but where appropriate, the student may take courses at the 100 level. Additional coursework 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.

A student in the thesis program will be expected to defend the thesis in an oral examination, which may be required to take a written and/or oral comprehensive examination over coursework. A final oral examination is required in the nonthesis program.

Doctor of Philosophy in Business Administration

The Ph.D. program is intended for individuals preparing for faculty positions in university or collegiate schools of business administration and for business or government careers as research directors, staff specialists, and consultants. The program is sufficiently flexible to accommodate specialization according to the student’s interests, background, and objectives.

Foundation Areas

The purpose of the foundation areas is to develop competency in research methods and to provide the background needed for study in any sequence of courses. The requirements in the foundation areas may be satisfied by passing a qualifying examination or by successfully completing each course. The Ph.D. level courses required in the foundation areas are:

- Economic Theory: 6E:203 Microeconomics I 3 s.h.
- 6E:204 Macroeconomics I 3 s.h.
- 6E:267 Statistics for Decision-Making II—Ph.D. 3 s.h.
- 6E:265 Management Science for Decision-Making—Ph.D. 3 s.h.

Behavioral Science: 6E:266 Behavioral Science and Business Organizations I 3 s.h.

One or more courses in research methods approved by the advisor.

The student must also satisfy the common body of knowledge requirement of the American Assembly of Collegiate Schools of Business (AACSB). This means the student’s undergraduate or graduate coursework should include study in accounting, quantitative methods, organizational behavior, management, finance, marketing, and the economic and legal environment pertaining to profit and/or non-profit organizations.

Specialized Areas

Preparation for dissertation research begins with the student electing two specialized areas of study. One or both may be from the foundation areas and one may be from outside the college. Typical areas include accounting, finance, marketing, management systems, insurance, industrial relations and human resources, and administrative studies. Four graduate-level courses are normally required in each specialized area.

The student must pass written comprehensive examinations in both specialized areas. Upon completion of the written examinations, the student must pass an oral comprehensive examination.

The Dissertation

Completion of the research and writing associated with the dissertation normally requires one year of full-time effort. After completing the dissertation, the candidate must defend it in an oral examination.

Graduate Admission

Applicants seeking admission to graduate work in business must submit a Graduate College application form, official transcripts of all undergraduate and graduate work, three letters of recommendation, and official scores on the Graduate Management Admission Test (GMAT). See the “Graduate College” section of the Catalog for more information.

Other Graduate Programs

Joint Programs

Joint programs between the College of Business Administration and the College of Law and the School of Library Science are available. A student can concurrently earn a M.B.A. or M.A. and a J.D. from the College of Law or an M.S. in library science from the School of Library Science.

M.A. in Accounting

See “Department of Accounting” in this section of the Catalog.

M.A. and Ph.D. in Economics

See “Department of Economics” in this section of the Catalog.

Facilities

The College of Business Administration is located in Phillips Hall, an air-conditioned high-rise building designed especially for programs of the college. The building contains seminar and conference rooms, a computer laboratory, an auditorium, and the Business Library, in addition to a wide range of classroom facilities.
Extensive research materials for business and economics are maintained in the Main Library, and the facilities of the University computing center are available to all students. Additionally, students have direct access to a complete computer laboratory within the college. The laboratory meets the instructional programs of the college, and the staff maintains a current library of computational programs and data tapes to service user needs.

The Industrial Relations Institute

The Industrial Relations Institute is designed to bring faculty and students together with people in industrial relations for the purposes of curriculum matters and research, and to conduct continuing education seminars and workshops for practitioners in the field of industrial relations.

The Institute for Economic Research

The Institute for Economic Research facilitates cohesive and continuing economic research and establishes a formal mechanism for providing interaction with and economic advice to industry and government. The Institute's main objectives are to provide economic information, service, and advice to the business and to public agencies; to provide a state focal point for applied economic research; and to promote and enhance academic research and teaching in economics.

The Institute for Entrepreneurial Management

The Institute for Entrepreneurial Management was created in 1979 to promote the entrepreneurial spirit among individuals, assist prospective entrepreneurs in evaluating the economic viability of their proposed business ventures; train owner/managers in the effective and profitable operation of their enterprises after they are successfully launched; and provide career guidance for college students as well as others. These Institute objectives are achieved primarily through a multidisciplinary research and continuing education program.

The Institute for Education and Research

The Institute for Education and Research is the college's continuing education arm in the field of insurance. The Institute conducts schools and seminars throughout the year at The University of Iowa campus in Iowa City and at other locations across the country. It also engages in contract research related to insurance for public and private organizations.

The 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 both on-campus and off-campus programs in order to reach the greatest possible percentage of their constituency. The staff members target their instruction to the specific needs of the labor movement in Iowa.

The Management Center

The Management Center is a major continuing education branch of the college and provides relevant information to management and government representatives in Iowa. Current administrative, behavioral science, and management knowledge related to the work life of men and women in organizations is disseminated through on- and off-campus conferences.

Accounting

Accounting department head: John H. Smith

Associate department heads: William W. Atkins, William S. Basinger, James F. Downes, Helen Schmitz

Instructor: John Z. Stidman

Assistant professors: David W. Collins, Violette C. Lantier, Carol L. Laughlin, William C. Lauter

Assistant professor: Douglas V. O. Jorgensen, Richard A. Kieszka

Assistant professor: Joseph A. Johnson

Degree cited: B.B.A. M.A., B.B.A., Ph.D.

The Professional Program in Accounting at The University of Iowa is a two-year upper-division and graduate program which leads to a B.B.A. degree after the first year and an M.A. degree after the second year. The program develops the technical proficiency and the conceptual, analytical, and communication skills required in the accounting profession. The program prepares candidates for careers in all areas of accounting and provides the educational qualifications for professional examinations such as those for the Certified Public Accountant (CPA) and the Certified Management Accountant (CMA). Students may enter the Professional Program in Accounting (1) after three years of preprofessional work which satifies the general education requirements of the University and the business requirements of the College of Business Administration (see program for B.B.A., students in (2) after completion of a bachelor's degree in any field (see program for B.A. and B.S. graduates). Candidates for the master's degree in accounting must maintain a 3.0 grade-point average in all graduate-level accounting courses and must pass an oral comprehensive examination.

Program for B.B.A. Students

A candidate for the B.B.A. may enter the Professional Program in Accounting after completing 30 semester hours of coursework, including the common requirements for the B.B.A., and 8C71 Statistical Analysis, and after earning grades of A or B in 8A1: Introduction to Financial Accounting and 8A2: Introduction to Managerial Accounting or the equivalent. Such students are designated as accounting majors.
Program for B.A. and B.S. Graduates

A student with an undergraduate degree in a field other than business administration can, with careful planning, complete the Program in Accounting requirements in two calendar years after admission to the Graduate College. A nonbusiness undergraduate planning to enter the program should include as many first-year courses as possible. For students entering in the fall semester with no previous accounting or business coursework, the typical first-year course include:

6A192 Financial Accounting—M.B.A. (should be taken fall semester) 3 s.h.

6A214 Managerial Accounting—M.B.A. (should be taken spring semester) 3 s.h.
6A115 Introduction to Taxation (should be taken spring semester) 3 s.h.
6A120 Financial Accounting I (should be taken spring semester) 3 s.h.
6A125 Financial Accounting II (should be taken summer session) 3 s.h.
6E100 Price, Employment, and Production Theory 3 s.h.
6K103 Computer Methods M.B.A. 3 s.h.
6F194 Managerial Finance M.B.A. 3 s.h.
6M108 Marketing Management M.B.A. 3 s.h.
6K197 Quantitative Methods M.B.A. 3 s.h.
6K271 Statistical Methods M.B.A. 3 s.h.
6L148 Law and Business 3 s.h.

Program for Undergraduates

6A200 Accounting Principles I 3 s.h.
6A211 Introduction to Federal Income Taxation 3 s.h.
6A202 Accounting Principles II 3 s.h.
6A203 Introduction to Federal Income Taxation 3 s.h.
6A212 Financial Accounting I 3 s.h.
6A213 Financial Accounting II 3 s.h.
6A222 Accounting Theory II 3 s.h.
6A223 Accounting Theory II 3 s.h.

Primary for Undergraduates and Graduates

6A115 Introduction to Federal Income Taxation 3 s.h.
6A116 Managerial Accounting 3 s.h.
6A120 Financial Accounting I 3 s.h.
6A125 Financial Accounting II 3 s.h.
6A144 Auditing 3 s.h.
6A220-221 Accounting Theory I & II 6 s.h.
6A270 Advanced Financial Accounting 3 s.h.
6K261 Administrative Science I M.B.A. 3 s.h.
6K265 Administrative Policy—M.B.A. 3 s.h.
6K275 Managerial Economic Theory M.B.A. 3 s.h.
6A250 Accounting Issue Series 0 s.h.

Doctor of Philosophy

See the "College of Business Administration" section of the Catalog.

Courses

Unless otherwise indicated, courses in accounting are expected to be offered in the fall, spring, and summer sessions.
Accounting
Administrative Management
Economics
Finance
Financial Economics
Industrial Relations
Insurance
Management Systems/Management Science
Marketing
Administrative Services (see below)

Areas of Concentration Option
Complete two 9-semester-hour sequences from each of the following areas in the College of Business Administration:
Accounting
Administrative Management
Economics
Finance
Financial Economics
Industrial Relations
Insurance
Management Systems/Management Science
Marketing
Administrative Services (see below)
Basic Business (see below)

Administrative Services Major
Requirements for the administrative services major are:
6S:2 Business Typewriting
Problems 3 s.h.
6S:22 Advanced Shorthand and
Transcription 3 s.h.
6S:35 Business Machines
Applications 2 s.h.
6S:112 Word Processing 3 s.h.
One of the following:
6L:125 Organizational
Communication 3 s.h.
6L:126 Written Communication in
Business 3 s.h.
One of the following:
6L:115 Office Management 3 s.h.

6S:105 Data Processing with
COOL 3 s.h.
Total 17 s.h.
*Administrative services majors who do not intend to teach shorthand must substitute 6S:147 Basic Systems Analysis.

Concentration in Basic Business
6S:103 Decision Making for
Consumers 3 s.h.
6S:104 Principles of Basic
Business 3 s.h.
One additional course in business
administration or economics, approved
by advisor 3 s.h.
Total 9 s.h.

Teacher Certification
The courses required for the basic
Professional Teaching Certification can be found in the "College of Education" section of the Catalog. In addition, these courses are required of all business education teaching majors:
6S:191 Principles of Business
Education 3 s.h.
(to be taken in junior year)
6S:192 Methods: Business
Subject 2-6 s.h.
7S:177 Seminar: Curriculum and Student
Teaching 1-3 s.h.
(taken concurrently with student
teaching)

The Graduate Program
Certification Only
This is a special classification for
graduate students who have earned
bachelor's degrees without fulfilling
requirements for a secondary teaching
certification. For this program, the student
fulfills all certification requirements by
completing a sequence of graduate-level
degree courses (20-28 semester
hours) approved by the advisor (see M.A.T. Program below). In addition, the
student must be required to complete
courses in business administration,
accounting, and economics to
strengthen undergraduate preparation
in business. The business education
course 6S:191 Principles of Business
Education is also required. No degree
objective is implied, although it is
possible to request a change in
graduate status. In such instances, the
normal faculty review of the student's
qualifications would occur before any
change could be made.

Professional Improvement (P.I.)
This is a special-purpose category for
graduate students who wish to complete
additional coursework without a further
degree objective. Students so classified
must be normally accepted as P.I.
students and must meet regularly with
an advisor. At the same time, there is
great latitude in the type of courses
which are possible. Many students
interested in special workshops,
seminars, conferences, and institutes
are admitted in this category. If such
students wish to apply for a degree at
ter a later time, all credit completed while
admitted for P.I. must be evaluated,
and the application is reviewed as if it were
a new one for admission purposes.

M.A. Program
This master's program in business
education is designed for the graduate
student who holds a teacher's
certificate and has either a major or a
minor teaching area in business
education. Its purpose is to upgrade
professional competence in teaching
business subjects in the secondary
classroom or at the community college
level.

Upon completion of the courses required
for the three areas of study in business
education, business administration,
and education, the candidate selects for the
final comprehensive examinations either
two-hour examination in each area, or
a three-hour examination in business
education and a three-hour examination
in one or the remaining two areas.
A minimum of 32 semester hours must be
included in the program with the
advisor's approval, within these flexible
distributions

Business Education
6S:201 Foundations of Business
Education 3 s.h.
6S:205 Directed Readings 1 s.h.
Three of the following:
65:203 Seminar: Basic
Business 2-3 s.h.
65:204 Seminar: Teaching
Accounting 2-3 s.h.
65:205 Seminar: Office
Education 1-3 s.h.
65:207 Seminar: Information
Processing 3 s.h.
65:210 Managing Business
Instruction 3 s.h.
65:240 Seminar: Business
Teaching 2-3 s.h.
Total 12-17 s.h.

Business
Six to 15 semester hours of credit in business administration, accounting, econometrics, or related business areas, such as business data processing, business communication, office management, or business systems.

Education
Six to 12 semester hours of credit in general education areas which meet the professional needs of the student, such as counselor education; educational administration; educational psychology; measurement, and statistics; instructional design and technology; post-secondary and continuing education; or special education.

M.A.T. Program
The Master of Arts in Teaching (M.A.T.) program is a 36-semester-hour nonthesis course of study. It is designed for superior business graduates who have had few or no education courses. The program enables students to enrich their background by completing graduate courses in substantive business and business education areas and in graduate courses which constitute professional preparation for secondary school teacher certification and community college teaching.

Two summers and two semesters are usually necessary to complete the M.A.T. program, which requires 18 semester hours in business and business education and 30 semester hours in graduate education courses.

The business and business education courses must include:

65:191 Principles of Business
Education 3 s.h.
65:192 Methods: Business
Subjects 3-8 s.h.

The graduate courses in education must include:

Educational psychology 3 s.h.
Philosophy or history of
education 3 s.h.
Observation and laboratory practice
student teaching 12 s.h.
One approved elective 2-3 s.h.

Candidates for the M.A.T. degree must pass comprehensive final examinations in business education and in education. These examinations are taken during the season in which the candidate expects to receive the degree.

Ph.D. Program
The program is available to qualified candidates who aspire to college and university positions as business teacher educators or in administrative positions in business education. Graduates of this program have also assumed administrative positions in other areas of education and in business, industry, and government.

The Ph.D. program is designed to improve the competence of business teachers at the post-secondary school level, primarily four-year college-level teachers of business teacher education programs and to strengthen the research and administrative skills of students aspiring to both instructional and administrative positions in post-secondary and secondary business education programs.

The Ph.D. candidate in business education is expected to satisfy the requirements for two tools of research before taking the comprehensive examinations. The tool areas are to be chosen from foreign languages, statistics, advanced mathematics, computer programming, scientific method, or other appropriate research tools approved by the adviser.

The doctoral program requires coursework, approved by the adviser, in each of the following areas:

Business Education
Common core recommended:
65:201 Foundations of Business
Education 3 s.h.
65:210 Managing Business
Instruction 3 s.h.
65:210 Seminar: Business Education
Research 3 s.h.
65:220 Seminar: Business Educational
Policy 3 s.h.
Two additional 200-level courses in
business education 6 s.h.
Total 18 s.h.

Cognate and Related Areas
Business: A minimum of 9 semester hours in 200-level courses from such areas as accounting, business administration, economics, or administrative support systems (including business communications, data processing, and systems, and related courses).

Education: A minimum of 9 semester hours in 200-level courses from such areas as counselor education, educational administration, educational psychology, measurement, and statistics, instructional design and technology, post-secondary and continuing education; or special education.

The program requires the completion of 90 semester hours beyond the bachelor's degree, including the dissertation and two approved courses in economic theory beyond Principles of Economics. A three-hour comprehensive examination is required in each area of study.

Courses
Primarily for Undergraduates

3 s.h.

Introductory business problems relating to personal and business communications such as letter, memos, and reports. Open only to students who have previously formal business courses.

65:202 Business Problem Solving
3 s.h.

Examination of research and development of skills and knowledge necessary for solving problems related to the production of goods, services and in the management of people and organizations. Prerequisite: 65:110 or equivalent.

65:204 Seminar: Business
Accounting 2-3 s.h.

Enroll in spring. Enrollment is determined by pre-registration. Open to students who are less than any age of high school graduation or equivalent. Prerequisites 65:11 and consent of instructor.
6.23 Advanced Shortbread and Tiramisu

Review of alcoholic beverage, emphasis on development of novel multilayered baking system. 
Prerequisite: 6.22 or equivalent. Corequisite: 6.5 or equivalent.

6.33 Business Mathematics Applications

Real-world business scenarios, emphasis on innovative applications of mathematics in business and machine learning.

For Undergraduates and Graduates

6.131 Independent Study

Individualized reading projects and research in business administration, emphasis on junior standing and consent of instructor. Prerequisite: 6.13 or equivalent.

6.132 Seminar for Consumers

Application of problem-solving in such areas as consumer credit and financial decisions, emphasis on the importance of basic economic principles. Same as 76.101.

6.134 Principles of Public Accounting

Integration of principles of public accounting with computerized accounting, emphasis on bookkeeping and data processing. Prereq: 6.13 or equivalent. Same as 76.106.

6.112 West Proofreading

Concepts of word processing, a market for improving efficiency of business communication, emphasis on word processing equipment, introduction to automatic typesetting and reproductive systems. Students may take one part of the course. Prerequisite: 6.5 or equivalent.

6.137 Basic Systems Analysis

Introduction to systems engineering, theory, and practice, emphasis on various analytical techniques, and design, development, and application of business systems. Prerequisite: Junior standing.

6.151 South Pacifying with COBOL

Introduction to programming with COBOL for processing business and management data, emphasis on management of modern business systems problems. Prerequisites: 6.13 or equivalent. Junior standing.

6.135 Database Systems and Applications

Introduction to computer-aided business intelligence systems. Prerequisite: 6.13 or equivalent. Senior standing.

6.163 Business Ethics Education

Philosophy, ethics, and legal principles for business and the environment. Prerequisite: 6.13 or equivalent. Junior standing.

6.136 Methods: Business Decision Making

Study of decisional factors, decision-making and programs for business students. Prerequisite: 6.13 or equivalent. Senior standing.

6.135 Current Consumer Topics

Current developments, and news specials to individuals and families. May be repeated. Same as 17.30.

6.136 Organization and Administration of Commerce


6.137 Philosophy of Educational Design

Study of the philosophy of educational design and its application to educational programs and educational research. Prerequisite: 6.13 or equivalent. Corequisite: 17.10.

6.138 Advanced Practical Education

Advanced practical education in the field of business, technical, and social education in the nation, with special emphasis on labor programs. Same as 76.197.

6.217 Special Problems

Advanced special problem area for study on either an independent study or group study basis. Prerequisite: Junior standing and consent of instructor.

Primarily for Graduates

6.201 Foundations of Business Education

Understanding educational, social, economic, and legal principles and their application in the field of business education; emphasis on the development of business education curriculum. Prerequisite: 6.217. Same as 76.301.

6.320 Seminar: Public Accounting

Applications of general business development principles in public accounting and taxation, emphasis on accounting principles and consumer learning needs within local business and professional problems. Same as 76.200.

6.214 Seminar: Teaching Accounting

Accounting principles and analysis of teaching techniques. Primarily for high school and college teachers of bookkeeping, accounting, and data processing. Prerequisite: 6.200. Same as 76.320.

6.299 Seminar: Office Education

Trends and research in office education at high school and college levels. Analysis of methods for teaching business education, organization of educational institutions, research, and evaluation problems in office education. Required for students pursuing office education programs. Same as 76.320.

6.241 Seminar: Personnel Training

Introduction to personnel training concepts for business education administrators, presentation, and development of instructional systems and techniques. Prerequisite: 6.299. Same as 76.320.

6.213 Seminar: Business Teaching

Development of effective business teaching at all levels of education. Application of instructional design, methodology, and evaluation. Prerequisite: 6.200. Same as 76.320.

6.324 Seminar: Business Teaching

Evaluation of teaching-learning techniques in business education. Same as 76.310, 76.320.

6.326 Directed Teaching

Individual readings in business educational data processing, techniques, and the use of business systems in business. Prerequisites: previous teaching and consent of instructor.

6.327 Seminar: Specialized Educational Research

Selection of practical problems and projects in different fields of business education, emphasizing research in business education. Application of research methods and design of research problems. Same as 76.327.

6.328 Seminar: Human Resource Education

Applications of educational principles with special emphasis on the development of human resource management departments in business education. Limited to doctoral students in business education.

6.305 Thesis: Business Education

...
Economics/BUSINESS ADMINISTRATION 265

B.B.A. in the College of Business Administration.
The B.B. and B.B. programs are designed for a well-rounded liberal arts education. Requirements for the B.B. degree emphasize instruction in the business fields of accounting, finance, marketing, business law, and management.
For descriptions of the B.A. and B.S. degree programs in economics, see 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:

- E5-103 Microeconomics 3 s.h.
- E5-105 Macroeconomics 3 s.h.

Candidates for the B.B.A. degree may qualify for the degree through an alternative program by meeting the common requirements of the College of Business Administration and completing two areas of concentration, each consisting of at least three courses (nine semester hours), two of which must be courses offered by the College of Business Administration. The student may select courses from those offered by the Department of Economics to fulfill the areas of concentration requirement. The two areas of concentration must be approved by the advisement advisor.
The student selecting areas of concentration as a method of meeting graduation requirements must meet his or her proposal to the Undergraduate Committee for approval prior to the start of the senior year.

Master of Arts
The department offers a three-semester M.A. program in applied economics, with opportunities to specialize in microeconomic economics, urban and regional economics, international economics and finance, economic development, financial and monetary economics, economics of the public sector, health economics, economic planning and budgeting, business and managerial economics, or labor economics and labor relations.
The first-year course sequence for the basic M.A. program is as follows:

First Semester
- 6E-183 Statistical Methods in Economics 3 s.h.
- 6E-200 Topics in Economics 3 s.h.
- 6E-204 Microeconomics I 3 s.h.
- Economic history course or elective 3 s.h.

Second Semester
- 6E-202 Price Theory 3 s.h.
- 6E-184 Methods of Quantitative Economics 3 s.h.
- Elective 3 s.h.

The M.A. program requires a course in economic history or history of economic thought.
The student has the option of taking three electives and writing a thesis for a minimum total of 32 semester hours of graduate credit, or taking five electives and writing a research paper in each of two 200-level economics courses, for a minimum total of 34 semester hours of graduate credit.
A student who performs well in the first semester of the M.A. program may transfer into the Ph.D. program at that time, without loss of credit.

Joint M.A.-J.D. Program
The department collaborates with the College of Law in offering a joint program in which the department accepts up to nine semester hours of law credit toward the M.A. degree in economics, and the College of Law accepts graduate credits in economics toward the Juris Doctor (J.D.) degree.

Doctor of Philosophy
The Ph.D. program is designed to provide rigorous training in microeconomic theory, macroeconomic theory, mathematical economics, and econometrics. In addition, the student selects a major area for intensive study and specialization. The program has three components: a coordinated sequence of core courses, a set of major area courses, and a dissertation.
The Ph.D. program has a minimum mathematics requirement of two semester hours of calculus, which the student must satisfy by the end of the first semester of the program.
The core sequence:
First Semester
- 6E-180 Mathematics for Economists 3 s.h.
- 6E-183 Statistical Methods in Economics 3 s.h.
- 6E-200 Topics in Economics 1 s.h.
- 6E-204 Microeconomics I 3 s.h.

Second Semester
- 6E-203 Microeconomics II 3 s.h.
- 6E-206 Mathematical Economics I 3 s.h.
- 6E-211 Mathematical Economics II 3 s.h.

Third Semester
- 6E-205 Microeconomics II 3 s.h.
- 6E-221 Econometrics I 3 s.h.
- Field course 3 s.h.

Fourth Semester
- 6E-222 Econometrics II 3 s.h.
- Field courses 6 s.h.

For students with sufficient mathematical and statistical background, 6E-180 and/or 6E-183 are waived.

Students planning to specialize in economics should take appropriate courses in mathematical statistics.
Students planning to specialize in economic theory should take a third semester of calculus and 6E-212 Mathematical Economics II.

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 of a field and in courses that enable the student to understand the relationship between his or her specialty and related fields. The major area requirement includes at least one course (three semester hours) in economic history or the history of economic thought. The student must achieve at least a 3.2 grade-point average in the major area courses. At the end of the first year of the Ph.D. program, the student takes qualifying examinations, covering theory, mathematical economics, and statistics.
After passing the relevant core courses, the student takes comprehensive examinations covering microeconomics, macroeconomics, and econometrics, and economics. A student who does not pass the qualifying examination or does not pass the comprehensive examinations may complete a M.A. program.

The student must present a dissertation prospectus within ten months after passing all the written comprehensive examinations. An oral defense of the dissertation research completes the Ph.D. program.

Teaching and Research

The Ph.D. program requires candidates to engage in teaching/research for at least 8 hours (timekeepers or summer session). The typical amount of service in each term is 50 hours per week.

Courses

Primarily for Undergraduates

Note: EC I and EC II may be taken in either order or they may be taken simultaneously; they satisfy the social science core requirement.

EC 302 Cooperative Education Training Assignment 0.5 h.
EC 401 Principles of Economics 4 h.
Organization and operations of modern economic systems; the production, distribution, and consumption of goods and services; the operation of market systems through voluntary exchange; the allocation of scarce resources; price theory; and the determination of interest and price levels. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 410 Principles of Business Economics 4 h.
Organization and operations of modern business and financial systems; the production, distribution, and consumption of goods and services; the operation of market systems through voluntary exchange; the allocation of scarce resources; price theory; and the determination of interest and price levels. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 510 Intermediate Microeconomic Theory 4 h.
Intermediate microeconomic theory. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 511 Labor Economics 3 h.
The relationship between labor market turnover, with emphasis on the role of wages, union activity, and labor mobility; and the effects of labor market policies, the laws affecting labor market behavior, and the rights and responsibilities of workers and employers. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 512 Health Economics 3 h.
Structure of America's medical care industry and applications of quantitative analysis to the problems of production, growth, and distribution; impact of health care, and role of public and governmental policies in the determination of income, employment, and prices in markets and world economy. Prerequisites: EC I and/or EC II, or consent of instructor.

Economic functions of government in market economies; economic decisions within government; budgetary processes; effects of government expenditures and taxes on equilibrium. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 514 Economic Systems of the Military Industrial Complex 3 h.
Economic function of the military-industrial complex as an important sector of the American economy. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 515 Economic Systems of the Military Industrial Complex 2 h.
Economic function of the military-industrial complex as an important sector of the American economy. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 520 International Economics 4 h.
Foreign exchange and balance of payments; balance-of-payments problems; international economic arrangements and policy; international trade. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 523 Economic Theory of the World Economy and Conflict 3 h.
Economic issues associated with "the new world order." Prerequisites: EC I and/or EC II, or consent of instructor.

EC 524 International Development and Structural Change 3 h.
Advanced general studies in development and international economic relations. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 525 Development and Economic Growth 3 h.
Principles of development in Third World countries; contemporary theories of growth and development. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 526 Financial Markets and Institutions 3 h.
Economic theories in modern financial systems; financial markets and institutions; economic theories of capital markets; money and production; money and prices; government and monetary policy; monetary policy; and demand-oriented policy. Prerequisites: EC I and/or EC II, or consent of instructor.

EC 527 Economic Growth and Development 3 h.
Principles and contemporary theories of economic growth and development. Prerequisites: EC I and/or EC II, or consent of instructor.
Finance

Department of

Behavioural and Financial Markets and Institutions

Intermediated Financial Management

At least 2 semester hours of accounting beyond the basic core, followed by any two of these:

Professional Responsibility

Corporate Strategy

At least one of the following:

Healthcare

At least 125 Risk Management

Three additional hours of courses specified by the student's advisor.

Graduate Programs

Refer to "Interdepartmental Graduate Programs" at the front of this section of the Catalog.

Courses

Primary for Upper-Division Undergraduates

Credit and Financial Management Training Assignment

Introduction to Financial Management

Credit and Borrowing

Life, Health and Annuity

Credit and Borrowing

General Insurance
Undergraduate Program

Requirements for the Bachelor of Business Administration degree with a major in industrial relations or human resources management are as follows:

Course in protective labor legislation 3 s.h.
BL/163 Collective Bargaining 3 s.h.
BL/158 Personnel Management 3 s.h.
Specialized areas (industrial relations or human resources management) 6 s.h.

Total 15 s.h.

Students select courses in the specialized area on the basis of their individual interests and with the advice and consent of their advisors.

Graduate Programs

See "Interdepartmental Programs Graduate Programs" at the front of this section of the Catalog.

Courses

Primarily for Upper Division Undergraduates

GLO/004 Cooperative Education Training Assignment 0 s.h.

BL/JX Introduction to Law 3 s.h.
General history and analysis of law; law's role in society and social patterns. Prerequisite: Business 211 or junior standing.

BL/211 Personnel Management 3 s.h.
Overview of the management process of complex human resources, including recruitment, selection, training, communications, organizational design, and performance or change. Prerequisite: Business 211 or junior standing.

BL 211 Structural Readings in Industrial Relations and Human Resources Management 3 s.h. Individually selected readings in selected topics. Prerequisites: consent of instructor.

BL/220 Quantitative Communication 3 s.h.
Course examines, describes, and quantitatively processes in business and other institutional settings. Emphasis is on informative, persuasive, and developmentally appropriate methods. Prerequisites: consent of instructor.

BL/222 Human Communication in Business 3 s.h.
Applicants of communication theory and business communications to written communication, speechmaking, and interpersonal skills. Prerequisite: consent of instructor.

BL/146 Microeconomics 3 s.h.
Principles of organization and management related to the information processing functionality in organizations, methods, development, and analysis of personnel and productivity in office systems. Prerequisite: junior standing.

BL/147 Law and Business 3 s.h.
Contemporary, ethical, and other operational areas of the legal system in business; studying for accounting majors. Prerequisite: GLO/211 and junior standing.

BL/138 Economics of Law 3 s.h.
Principles, practices, and policies that affect law in changing industries, economics, and political surplus and need for the two sides of the law before economists and business practitioners. Prerequisite: GLO/211 and junior standing.

BL/151 Employment Rights 3 s.h.
History of labor relations and current federal public policies affecting union and labor relations; manpower and labor relations, employment discrimination, and the legal regulation of labor/management relations. Prerequisite: Principles of industrial relations core courses.

BL/152 Collective Bargaining 3 s.h.
Integration of historical, political, social, and legal factors influencing public policy governing collective bargaining and labor-management relations. Prerequisite: Principles of industrial relations core courses.

BL/144 Employee Relations in the Public Sector 3 s.h.
Public policies and their role in employment relations; regulations, legal, political, and public considerations. Emphasis on public sector labor relations. Prerequisite: Principles of industrial relations core courses.

BL/163 Labor Relations Policy and the Government of Human Resources 3 s.h.
Study and evaluation of government's role in public policy; governmental and administrative functions in the management of human resources. Prerequisite: Principles of industrial relations core courses.

BL/165 Personnel Management 3 s.h.
Examination of personnel selection and recruitment methods; management of human resources. Prerequisite: Principles of industrial relations core courses.

BL/167 Current Issues in Industrial Relations 3 s.h.
Problematic issues in industrial relations, historical trends,ocardinal issues, and current problems in the field. Prerequisite: Principles of industrial relations core courses.

BL/168 Business Policy 3 s.h.
Search for solutions of problems of upper management with the objective of improving the efficiency of the organization and the effect of business decisions on the general social environment. Prerequisite: Principles of industrial relations core courses.

BL/169 Management of Operations—B.L.E.A. 3 s.h.
Functionality, design, implementation, and application of the principles of materials management, design and control of microcomputer systems, and control and productivity. Prerequisite: Principles of industrial relations core courses.

BL/170 Law, Business, and Economics 3 s.h.
The role of the legal, economic, and ethical environment in the development of business policies and practices. Prerequisite: Principles of industrial relations core courses.

BL/171 Current Topics in Industrial Relations and Human Resources Management 3 s.h. Includes organizational readings in selected topics. Prerequisites: Principles of industrial relations core courses.

BL/317 Industrial Relations and Human Resources Management 3 s.h. Includes organizational readings in selected topics. Prerequisites: Principles of industrial relations core courses.

BL/318 Contemporary Topics in Industrial Relations and Human Resources Management 3 s.h. Includes organizational readings in selected topics. Prerequisites: Principles of industrial relations core courses.

BL/320 Social Environment of Industry—B.L.E.A. 3 s.h.
Focus on social problems affecting the quality—i.e., health, safety, working conditions, urbanization, productivity—environmental impact on industry with respect to both costs and benefits; significant roles of government and voluntary groups. Prerequisite: Principles of industrial relations core courses.

BL/321 Seminar: Business Community 3 s.h.
Organizations, systems, and communication theories in social, cross-cultural research and methodology; communication programs for business, government, and voluntary institutions. Prerequisite: Principles of industrial relations core courses.

BL/322 Seminar: Management Support Systems 3 s.h.
Advisory services, functions, design, analysis, and evaluation of support systems. Prerequisite: Principles of industrial relations core courses.

BL/323 Concept of Labor Relations 3 s.h.
Labor-management relations involved in labor-management relations. Prerequisite: Principles of industrial relations core courses.

BL/324 Compensation Administration 3 s.h.
Flexible and incentive compensation programs for labor relations. Prerequisite: Principles of industrial relations core courses.

BL/325 Industrial Relations—B.L.E.A. 3 s.h.
Industrial relations roles in labor-management relations; management of labor relations; human resource personnel. Prerequisite: Principles of industrial relations core courses.

BL/357 Training and Development 3 s.h.
Preparation and management personnel involved in labor relations. Prerequisites: Principles of industrial relations core courses.

BL/360 Human Resource Management 3 s.h.
Preparation and management personnel involved in labor relations. Prerequisites: Principles of industrial relations core courses.

BL/370 Seminar in Industrial Relations 3 s.h.
Preparation and management personnel involved in labor relations. Prerequisites: Principles of industrial relations core courses.

BL/380 Administrative Policy—B.L.E.A. 3 s.h.
Analysis of labor-management relations in a national economic context. Prerequisites: Principles of industrial relations core courses.

BL/386 Executive Development Program 3 s.h. Includes introduction to executive development program. Prerequisite: Principles of industrial relations core courses.

BL/393 Business in Industrial Relations and Human Resources Management 3 s.h.
Role of principles of industrial relations and human resources management in a national economic context. Prerequisite: Principles of industrial relations core courses.

BL/394 Seminar in Comprehensive Regulatory Analysis 3 s.h.
Comparative analysis of techniques used by major industrial relations and human resource personnel involved in a national economic context. Prerequisite: Principles of industrial relations core courses.

BL/395 Field Studies in Industrial Relations and Human Resources Management 3 s.h.
Problems in industrial relations and human resource personnel involved in a national economic context. Prerequisite: Principles of industrial relations core courses.

508 Contemporary Issues regarding various aspects of business organizations, employment, development, and evaluation in real problems in the business firms with special training in the field of labor relations.
Management Sciences

Department chair: Warren J. Cox
Professor: Charles H. Kissie
Associate professor: Thomas M. Britton
Professor: Gary J. Eidson, Patrice L. Fossey
Assistant professor: J. E. Funk, Michael W. van der Veen

Management sciences majors participate in a variety of educational experiences that develop their knowledge about complex managerial decision-making systems. Skills in applying this knowledge are acquired by developing quantitative models, utilizing computer technology, creating data bases, systems analysis, and examining the behavioral attributes of work. Organizations. Each degree track fits one of several career options to departmental majors. Management sciences majors are prepared for a variety of jobs. These include such jobs as computer programmers, systems analysts, sales representatives with computer companies, and management trainees, as well as other positions in other departments.

Requirements for the Bachelor of Business Administration degree with a management sciences emphasis are as follows:

6C:17 Statistical Analysis
6C:181 Individual Behavior in Organizations
6C:183 Design and Management of Organizations
6C:178 Managerial Decision Models
6C:180 Management Information Systems

Completion of one of these two tracks:

Administrative Studies Track
6C:180 Information Systems Track
6C:181 Management Information Systems Track
6C:182 Decision Behavior
6C:189 Selected Problems in Administrative Science

Management Information Systems Track

One computer science programming course (2C:15-17 recommended)
6C:181 Management Information Systems Design
One of the following:
6C:183 Data Base Management Information Processing and Decision Behavior
6C:175 Managerial Economics
6C:178 Management Science Topics

Master of Arts

The Master of Arts program in management science is designed for the student who sees an opportunity for specialization in research experience. The general requirements are specified in the description of the Master of Arts in Business Administration. Students must consult with a faculty advisor to prepare a plan of study to the master’s degree.

Doctor of Philosophy

Candidates wishing to earn a Ph.D. degree in management sciences should refer to the description of the degree leading to the Ph.D. in the “College of Business Administration” section of the Catalog, and then consult with a faculty advisor.

Courses

Primary for Upper-Division Undergraduates

Mgmt 450 Cooperative Education Training Assignment
6C:101 Computer Analysis
6C:103 Introduction to the computer and its uses in the organization and management of organizational. Topics include computer hardware, programming languages, computer operations, and information systems.
6C:171 Statistical Analysis
6C:181 Production Management
6C:184 Organization and management of manufacturing enterprises, production design and process planning, plant layout and materials handling, work simplification and management, production, inventory control. Prerequisites: 6C:2 and 6C:171.

For Undergraduates and Graduates

6C:181 Structural Readings
6C:182 Individual Behavior in Organizations
6C:183 Information systems in management, marketing, personnel, and executive decision making, and the performance of individual, group, and organizational decision making. Prerequisites: 6C:81 and completion of the sociology or psychology requirement, or consent of instructor.

6C:185 Business Policy

6C:186 Design and Management of Operations
6C:187 Decision Theory

6C:188 Business Policy

6C:193 Mgmt 450 Cooperative Education Training Assignment
6C:194 Computer Analysis

6C:195 Statistical Analysis

6C:196 Production Management

6C:197 Organization and management of manufacturing enterprises, production design and process planning, plant layout and materials handling, work simplification and management, inventory control. Prerequisites: 6C:2 and 6C:171.

6C:198 Management Information Systems Track

6C:199 Information systems in management, marketing, personnel, and executive decision making, and the performance of individual, group, and organizational decision making. Prerequisites: 6C:81 and completion of the sociology or psychology requirement, or consent of instructor.
Graduate Programs

See "Interdepartmental Graduate Programs" in the front of this section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

6M:31 Introduction to Marketing 3 s.h.

6M:157 Consumer Behavior 3 s.h.

6M:158 Marketing Communications 3 s.h.

6M:141 Senior Seminar in Marketing 3 s.h.

6M:147 Marketing Management 3 s.h.

Graduate Programs

See "Interdepartmental Graduate Programs" in the front of this section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

6M:31 Introduction to Marketing 3 s.h.

6M:157 Consumer Behavior 3 s.h.

6M:158 Marketing Communications 3 s.h.

6M:141 Senior Seminar in Marketing 3 s.h.

6M:147 Marketing Management 3 s.h.

Primarily for Graduates

6M:301 Strategic Marketing 3 s.h.

6M:392 Marketing Management 3 s.h.

6M:354 Marketing Research Methods 3 s.h.

6M:390 Product Management 3 s.h.

6M:390 Marketing Communications 3 s.h.

6M:390 Marketing and Advertising 3 s.h.

6M:390 Marketing Research 3 s.h.

6M:390 Organizational Behavior 3 s.h.

6M:390 Strategic Management 3 s.h.

6M:390 Product Management 3 s.h.

6M:390 Marketing Communications 3 s.h.

6M:390 Marketing and Advertising 3 s.h.

6M:390 Marketing Research 3 s.h.

6M:390 Organizational Behavior 3 s.h.
The College of Dentistry is both administratively and physically an integral part of the University. It draws upon and contributes to the University's diverse resources, and its students enjoy all the advantages and privileges enjoyed by the general student body. The college benefits particularly from its cooperative relationship with the colleges of Medicine, Nursing, and Pharmacy in the University Health Center, whose teaching, research, and service activities have earned international recognition.

Doctor of Dental Surgery

The basic educational program leading to the degree Doctor of Dental Surgery (D.D.S.) consists of at least three years of preprofessional study and approximately four years of study in the College of Dentistry. The dental curriculum consists of five basic units:

Basic Sciences

Restorative Dental Sciences
- Gross, microscopic, and radiographic dental anatomy; dental materials; endodontics: operative dentistry; fixed partial prosthesis; removable prosthesis.

Oral Medicine
- Preventive dentistry: oral diagnosis: dental radiology: oral pathology: anesthesiaology and pain control: oral surgery: periodontology. In addition, there are selected mini-courses in the bioclinic options program which are correlated between the basic and clinical sciences.

Community Dentistry

Pediatric Dentistry
- Pedial growth and development: pedodontics and orthodontics.

To achieve a close correlation of the basic sciences with clinical disciplines, the student is introduced to clinical patient-treatment situations during the first year.

The second-year program includes further activities in the basic and clinical sciences. Students are introduced to dental auxiliary utilization and its role in an efficient and effective patient treatment.

Third-year dental students rotate through a series of "clerkships" which expose them to each of eight clinical disciplines.

Fourth-year dental students are involved in the delivery of comprehensive dental care in an environment which closely simulates conditions in private dental practice. Fourth-year students also are exposed to various auxiliary health programs at state and university Hospitals and the State Department of Health.

We are available preceptors for which fourth-year dental students assist in selected dental offices throughout the state. The assistantships expose students to facets of dentistry usually not observable in an academic setting, such as practical business management procedures, appointment-book control, the dynamics of presenting treatment plans to private patients, and the relationship of the dental to the community.

Promotions and Graduation
- Student promotions and graduation are determined by the academic and professional performance committee.
appointed by the dean from the basic preclinical and clinical sciences, and from the other academic areas of the college. The performance committee may recommend to the dean that a student withdraw from the college or repeat specific courses when the student is deemed generally unprepared to be promoted or to enter the dental profession.

Committee for Appeals
When a student has been asked to withdraw from the college, or desires special consideration on problems concerning promotion or graduation, he or she may appeal this decision to the dean. All appeals shall be heard by an ad hoc committee appointed by the dean. The committee considers such matters as student scholastic achievement, promotion, absences, and general fitness to enter the dental profession. The recommendation of the appeals committee is submitted to the dean for final action.

State Board of Dentistry Licensure Examination
The states of Kansas, Colorado, Missouri, Oklahoma, Iowa, Wisconsin, Nebraska, Minnesota, Wyoming, North Dakota, and South Dakota have joined in the formation of the Central Regional Dental Testing Service to replace the clinical examinations previously given by the states individually. These examinations are administered at several testing sites located in schools of dentistry within the region. Examination dates are determined by the Central Regional Dental Testing Service and are available from its administrative secretary. Successful completion of requirements of the Central Regional Dental Testing Service will be accepted by the member states for a five-year period in lieu of their individual state's examination requirements.

Facilities
The Dental Science Building, a major unit in an expanded health center, enables the college to accelerate its research activities, and facilitates the development of interdisciplinary communication in health center teaching, research, and patient-care activities. The health center includes the colleges of Medicine, Nursing, and Pharmacy; a Basic Sciences Building; University Hospitals; and a Health Sciences Library. The Health Sciences Library houses all of the University’s special health science holdings, including the College of Dentistry’s collection of more than 10,000 volumes on dentistry and allied dental subjects, and the more than 240 professional journals the college currently receives.

The Dental Science Building consists of two connected four-story wings located on either side of a mall. The south wing is devoted to clinical teaching, with various departmental clinic facilities, support laboratories, clinical research space, offices, and an automated learning center. The north wing houses a variety of teaching, administrative, and research facilities, including teaching laboratories, research laboratories, administration area, an audiovisual production center, and the programs in community dentistry.

Student Organizations
All dental students are eligible for membership in the American Student Dental Association. Students who rank in the upper 13 percent of the junior class are eligible for Omicron Kappa Upsilon, national scholastic honorary dental society. Two national dental professional fraternities, Delta Sigma Delta and Phi Omega, have chapter houses at Iowa, and both have sponsored organizations. There is also a Dental Student Wives Club.

Expenses
The College of Dentistry maintains a Supply-Instrument Management System (S.I.M.S.) that provides the student with most of the instruments and supplies necessary throughout dental training. The instrument usage fee for the program leading to 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 $100 breakage fee must also be deposited; the deposit is refundable upon graduation or termination of enrollment.

Financial Assistance
Under the Health Professions Loan Program, it is possible for dental students to borrow a maximum of $15,000 each year of their undergraduate professional studies. Eligibility is established by completion of the College Scholarship Services Financial Aid Form, which includes a parent’s financial statement. Dental students may also apply for Guaranteed Student Loans through banks and other lending agencies; students may borrow a maximum of $15,000 over the four-year D.D.S. professional program. Interest on Health Professions Loans and Guaranteed Student Loans are comparatively low and are repayable over an extended period of time after the recipient completes the course of study.

A number of short-term loans are available from the American Dental Association, the Iowa Dental Association, the Kellogg Foundation, the Iowa Dental Achievement Fund, and other sources, to help students in emergency situations. These are available through the financial aid coordinator of the student affairs committee in the College of Dentistry. See the “Financial Aid” section of the Catalog or inquire at the Office of Student Financial Aid for information regarding other assistance available to dental students.

Admission
Applications are accepted beginning January 1 of the year prior to the year for which application is made. The closing date for applications is November 30 for the class entering the College of Dentistry the following August. The prospective dental student is encouraged to complete the program leading to a standard bachelor’s degree before applying to dentistry, or to consider a combined program which enables him or her to earn a standard bachelor’s degree upon completion of the freshman
year in dentistry. Preference will be given to applicants who have a bachelor's degree or who have completed requirements for the degree in a combined program.

General Basis for Admission Each applicant must submit to the American Association of Dental Schools Application Service a completed application form. The forms are available from the University Office of Admissions.

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 the applicant's performance and potential for the dental profession are considered outstanding. The predental program of study should include:

**Rhetoric**
- Satisfactory accomplishment in English composition and speech commensurate with the academic requirements for a bachelor's degree at the college attended.

**Physics**
- One year (equivalent to eight semester hours), of which one-fourth must be laboratory work.

**Chemistry**
- Two years (equivalent to 18 semester hours), of which one year (equivalent to eight semester hours) must be in organic chemistry, and of which one-fourth must be laboratory work.

**Biology**
- One year (equivalent to eight semester hours) which must include appropriate laboratory work. The requirement may be satisfied by a one-year course in either general biology or zoology and botany (not botany alone).

**Electives**
- Sufficient coursework in the social sciences, philosophy, psychology, history, foreign languages, and mathematics to provide a well-rounded educational background.

The dental admissions committee may waive or reduce some of the above requirements when the candidate for admission is considered outstanding in other respects.

**Combined Liberal Arts-Dentistry Course**
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 makes it possible for the student who enters the College of Dentistry to obtain the bachelor's degree from the College of Liberal Arts upon successful completion of the freshman year in dentistry. To take advantage of this plan, the student must fulfill all specific requirements for the bachelor's degree, including the requirements for a major in some department or area of concentration. The successful completion of the last 30 hours in the College of Liberal Arts at The University of Iowa preceding enrollment in the College of Dentistry satisfies the College of Liberal Arts residence requirement.

**Grade-Point Requirement**
The applicant should have a cumulative grade-point average of at least 2.0 (A=4). In addition to the grade-point average, the admissions committee gives special consideration to the quality of the applicant's coursework in the predental sciences.

**Interviews**
Personal interviews are required of applicants for admission to the College of Dentistry.

**Required Dental Admission Test**
All applicants must complete the Dental Admission Test sponsored by the Council on Dental Education of the American Dental Association. Tests are given two times annually, and The University of Iowa is a testing center. Applicants must take the test no later than October in order to be admitted the following year. Applicants may obtain test application forms from the University or the American Dental Association. Test applications should be submitted well before the test deadline.

**Deposit by Accepted Applicants**
An accepted applicant is required to submit a deposit within 30 days after notification of favorable action on his or her application until April 15. Applicants admitted after April 15 must submit the deposit within two weeks after their notification of admittance. This deposit is not refundable but is credited toward the first year's fees. An applicant who fails to make the deposit within the time specified forfeits a place in the entering class.

**Additional Admission Considerations**
Fulfillment of the specific requirements listed for admission does not ensure admission to the College of Dentistry. From the applicants meeting minimum requirements, the admissions committee selects those who appear best qualified for the study and practice of dentistry. The committee considers applicants' academic records, their preparation for the required Dental Admission Test, and several other factors.

Since the available places are in the freshman class of the College of Dentistry are limited, preference is given to applicants who are residents of Iowa and to nonresidents who are students at Iowa under the University's regulations on residence. It is found possible to consider applicants who are not residents of Iowa, preference is given to nonresidents from states without dental schools, and to other nonresidents who have demonstrated outstanding scholarship and promise. Nonresidents whose grade-point averages are below 3.0 are discouraged from applying.

**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, Fixed Prosthodontics, Operative Dentistry, Endodontics, Oral
Dental Hygiene/DENTISTRY

Pathology and Diagnosis, Oral Surgery, Orthodontics, Pedodontics, Periodontics, Preventive and Community Dentistry, and Removable Prosthodontics.

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, and departmental approval. Departments also offer postgraduate programs of study designed as preparation for clinical specialty practice. These programs do not lead to an academic degree. Prerequisites for admission to the postgraduate programs are the same as for graduate programs. A certificate is awarded upon satisfactory completion of the postgraduate program.

Basic Sciences in the Dental Curriculum

The following science courses are offered by departments in colleges other than Dentistry, and are a part of the dental curriculum:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>60:101</td>
<td>Human Gross Anatomy for Dental Students</td>
<td>8 h.</td>
</tr>
<tr>
<td>60:114</td>
<td>Oral Microscopic Anatomy and Embryology</td>
<td>1 1/2 h.</td>
</tr>
<tr>
<td></td>
<td>69:203 Introduction to Human Pathology</td>
<td></td>
</tr>
<tr>
<td>71:111</td>
<td>Pharmacology for Health Sciences: Dental</td>
<td>5 h.</td>
</tr>
<tr>
<td>72:152</td>
<td>Maxillofacial Physiology</td>
<td>4 h.</td>
</tr>
<tr>
<td>99:161</td>
<td>Biochemistry for Dental Students</td>
<td>4 h.</td>
</tr>
<tr>
<td></td>
<td>General Microscopic Anatomy for Dental Students</td>
<td>4 h.</td>
</tr>
</tbody>
</table>

Nondepartmental Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>113:101</td>
<td>First-Year Dental Hygiene Seminar</td>
<td>0 1/2 h.</td>
</tr>
<tr>
<td>113:102</td>
<td>Second-Year Dental Hygiene Seminar</td>
<td>0 1/2 h.</td>
</tr>
<tr>
<td>113:200</td>
<td>Advanced Gypsum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Selection from a series of elective mini-courses to emphasize the scientific basis of dental practice.</td>
<td></td>
</tr>
<tr>
<td>113:205</td>
<td>Dental Therapeutics</td>
<td>1 1/8 h.</td>
</tr>
</tbody>
</table>

Clinical Experience with drugs for prevention, anesthesia, instruction/teaching, local anesthesia and postoperative pain control, prescription writing, drug interactions, emergency drugs, for the prevention and control of dental disease.

The Bachelor of Science degree program in dental hygiene is accredited by the Commission on Dental Accreditation of the American Dental Association. Program graduates are prepared to take the national 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 medical and dental sciences and in dental hygiene.

Students take the specialized courses during the junior and senior years. In the junior year, they enroll in 60:2 Human Microscopic Anatomy; 71:130 Intermediate Pharmacology; 80:21 Introduction to Periodontology; 80:21 Operative Dentistry Laboratory, Hygiene; 80:30 Oral Pathology; 80:37 Anatomy, 80:38 Histology, and 79:123 Choosing Instructional Strategies. In addition, juniors learn the basic theory and clinical skills required for dental hygiene practice in 80:37 Dental Hygiene I and 80:38 Dental Hygiene II, which integrate content in dental anatomy with the theory and practice of clinical dental hygiene.

The Bachelor of Science degree program in dental hygiene prepares students for the dental hygiene profession through an integrated curriculum that includes preclinical and clinical education in all areas of dental hygiene practice. Graduates are prepared to take the national and state dental hygiene licensure examinations required for dental hygiene practice.

Clinical Management Concepts

Faculty: associate professor Thomas V. Gerber, associate professor Vivian S. Qajar, clinical assistant professor David Scott, and assistant professor Ronald K. Mankin.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>113:107</td>
<td>Dental Hygiene Seminar</td>
<td>1 1/2 h.</td>
</tr>
<tr>
<td>113:108</td>
<td>Dental Hygiene Seminar</td>
<td>1 1/2 h.</td>
</tr>
<tr>
<td>113:200</td>
<td>Advanced Dental Hygiene</td>
<td>1 1/2 h.</td>
</tr>
</tbody>
</table>

Clinical Management Concepts include student participation in an extended summertime period between the junior and senior years.

The curriculum is accredited by the Commission on Dental Accreditation of the American Dental Association. Program graduates are prepared to take the national 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 medical and dental sciences and in dental hygiene.

Students take the specialized courses during the junior and senior years. In the junior year, they enroll in 60:2 Human Microscopic Anatomy; 71:130 Intermediate Pharmacology; 80:21 Introduction to Periodontology; 80:21 Operative Dentistry Laboratory, Hygiene; 80:30 Oral Pathology; 80:37 Anatomy, 80:38 Histology, and 79:123 Choosing Instructional Strategies. In addition, juniors learn the basic theory and clinical skills required for dental hygiene practice in 80:37 Dental Hygiene I and 80:38 Dental Hygiene II, which integrate content in dental anatomy with the theory and practice of clinical dental hygiene.

During the senior year, students advance their clinical skills in 80:38 Clinical Dental Hygiene. In 80:20 Advanced Periodontics for Dental Hygiene Students, each student is assigned to work with a graduate student in periodontics training procedures on patients 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.
Seminars receive additional clinical experience in 88:86 Clinical Dental Radiology for Dental Hygienists. Weekly lectures and seminars reinforce clinical learning in 88:86 Seminar: Dental Hygiene Concepts and Practice
Senior students also are enrolled in 88:87 Practicum: Community Dental Health and 88:88 Seminar: Community Dental Health.
Courses traditionally taught as isolated subject-oriented units, such as dental health education, public health, and audiovisual media, are incorporated into an integrated core. Learning emphasis is on the relationship between the intertwining theory and practical application of community dental health. Weekly field experiences enable students to apply knowledge of human behavior, basic principles of communication skills, educational and research techniques and to design, implement, and evaluate health care and educational programs.

Admission Requirements
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, two years of the same foreign language, two and one-half years of mathematics, and one year each of biology and chemistry.

College Preparation
Eligibility for admission to the professional program in dental hygiene requires satisfactory completion at 63 semester hours of college coursework. In fulfilling this requirement, the student must satisfy general education requirements of the College of Liberal Arts and complete the following dental hygiene prerequisites:
Five semester hours (eight for transfer students) of biology or general biology—37:700 Principles of Animal "Biological".
Three semester hours of organic chemistry—4:7 General Chemistry 1.
Five semester hours of organic chemistry, including biochemistry—4:8 General Chemistry 2, 4:9 General Chemistry Laboratory.
Four semester hours of microbiology—81:164 Microbiology.
Three semester hours of nutrition—17:142 Nutrition.
Four semester hours of psychology—31:216 Elementary Psychology.
Four semester hours of sociology—36:1 Introduction to Sociology. Prerequisites:
Four semester hours of anatomy—80:1 Elementary Human Anatomy.
Four semester hours of physiology—72:13 Introduction to Human Physiology.

These prerequisites provide the educational basis for the dental hygiene courses of study. In addition, students admitted into the professional program of study must complete basic certification in cardio-pulmonary resuscitation technique (CPR) prior to entrance. 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.
Students begin the professional program in dental hygiene in the fall only. Students enrolled in The University of Iowa College of Liberal Arts need submit only the dental hygiene application in the fall semester of their sophomore year. Transfer students must submit both College of Liberal Arts and dental hygiene applications. All applicants are interviewed by the dental hygiene admissions committee before admitting the dental hygiene applications. Students must apply for dental hygiene admission by March 1 preceding the fall semester in which they wish to enter the program.

Graduate Program
Although the need for qualified educators in dental hygiene continues, the graduate faculty within recent years has recognized the need for preparing graduates to contribute toward the advancement of new knowledge in dental hygiene. This has resulted in revision of graduate program goals placed an emphasis on the acquisition of advanced scientific knowledge in the biological and social sciences and basic knowledge of and experience in conducting research.
The curricular design provides the student with major concentration in advanced dental hygiene theory. In the biological field, this consists of the pathophysiology of dental plaque, including plaque microbiology and biochemistry, and the relationships of plaque to caries and periodontal disease; the response of the host to dental plaque, emphasizing immunological mechanisms, and the prevention of dental diseases by immunization and antimicrobial agents.
In the social science area, students consider the implications of applied sociological, psychological, economical, cognitive, and environmental concepts related to oral health. Selected readings relate societal values and structural elements of dental care delivery systems to oral health outcomes and explore the relationships of the individual to the family, and the community to oral health outcomes, both behavioral and physical. In addition, students learn how social science methodology can be utilized in research specific to the profession of dental hygiene and to oral health by developing a mini-research proposal and supporting the need for such research through a focused literature review.
Study in the educational field includes trends in dental hygiene with emphasis on dental hygiene education; elements of curricular design; and the theory and application of didactic and clinical teaching in dental hygiene.
Although students may begin the program during the fall, spring, or summer session, enrollment at the beginning of the summer session is preferred. Applications, transcripts, and Graduate Record Examination (GRE) Aptitude Test scores should be submitted as early as possible prior to the semester admission is desired. Most students should expect to take two academic semesters to complete degree requirements.
Approximately 12 semester hours are assigned courses to advance knowledge
Endodontics

in dental hygiene and 10 semester hours in research methodology and in thesis preparation and defense. The remaining 12 hours are to include electives in the biomedical and social sciences.

Elective coursework related to the biomedical sciences may include microbiology, Nalology, biochemistry, oral pathology, and periodontology. Electives emphasizing the social, economic, and political aspects of health include epidemiology, medical sociology, and health administration.

Students are also encouraged to consider taking electives in education, such as educational measurement, theories of learning, and administration.


Graduate Admission Requirements

Applicants for admission are subject to the general rules of the Graduate College. Departmental requirements include a 2.0 acceptable score on the Graduate Record Examination (GRE) Aptitude Test and a 2.8 minimum undergraduate cumulative grade-point average (A=4). The undergraduate education of the applicant should include courses equivalent to those in the undergraduate dental hygiene major at The University of Iowa.

Candidates for admission must submit official transcripts of all undergraduate academic records, an application for admission, and Graduate Record Examination scores to the Office of Graduate Admissions, Calvin Hall. These materials must be received before the candidate’s application can be processed. Application for admission and information on the Graduate Record Examination can be obtained from the Office of Graduate Admissions.

Special Programs

Through an independent study program, students can explore additional career options in dental hygiene or enrich their educational background in a dental hygiene-related field of study. For example, a student interested in clinical research may become involved in a faculty directed research project. Others considering graduate programs in public health or dental hygiene education may, under the direction of faculty, conduct projects related to these interest areas.

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 Care complex, one of the nation’s outstanding health science teaching, research, and patient care facilities.

Financial Aid

In addition to financial assistance available to University students in general, there are a limited number of loans specifically for dental hygiene students. These loans are based on assessment of the student’s academic record as well as financial need.

Courses

For Undergraduates

68:01 Dental Hygiene 1 S.H.

- Detailed study of human dental anatomy, biological structure of the oral cavity, oral physiology, nutrition, oral diseases and conditions, oral hygiene, and oral disease prevention.

68:02 Dental Hygiene I 3 S.H.

- Introduction to dental hygiene theory, clinical skills, head and neck anatomy, and dental diseases. Didactic and clinical experiences are related to complete oral prophylaxis and dental hygiene procedures.

68:03 Dental Hygiene II 3 S.H.

- Contact hours: 4 Contact hours: 4

- Comparison of therapeutic dental hygiene theory to the performance of intermediate clinical dental hygiene and oral diseases control procedures.

68:04 Clinical Dental Hygiene 4 S.H.

- Contact hours: 4, 3 Contact hours: 4, 3

- Practice of advanced dental hygiene procedures with emphasis on providing comprehensive preventive and clinical services.

For Graduates

68:201 Seminar: Dental Hygiene Literature Review 4 S.H.

- Analysis of dental hygiene literature in political, social, and economic trends and current state of knowledge in field of dental hygiene.

68:202 Evaluation of Dental Hygiene Research 4 S.H.

- Evaluation of scientific and clinical research in dental hygiene and related fields, and the effects of research findings on theory and practice of dental hygiene.

68:203 Research: Dental Hygiene 4 S.H.

- Literature review, selection of research topic, formulation or protocol design for master’s thesis.

68:204 Selected Topics in Dental Hygiene Education 4 S.H.

- Theory and research applied to specific areas of dental hygiene education in clinical, didactic, or field settings; emphasis on theoretical and methodological trends.

68:205 Social Factors and Oral Health 4 S.H.

- Evaluation of current research conducted on cultural, sociological, and psychological factors influencing oral hygiene and oral health care.

68:206 Thesis Dental Hygiene 4 S.H.

- Completion of research project.

Endodontics

Department head: Kathleen M. Zakariasen

Faculty, undergraduate: W. Brian Small

Ph.D. and Master’s: L. Zakariasen

Ph.D. and Master’s in Endodontics

Predoctoral Program

Coursework and clinical experiences in endodontics are of vital importance in the overall education of a dental student. Predoctoral endodontics is taught during the sophomore year and includes both didactic and laboratory courses. In clinical endodontology, the student studies both normal and pathological conditions of the dental pulp, emphasizing the
Graduate Program in Endodontics

The graduate program offered by the Department of Endodontics is designed to prepare qualified dentists for the practice of endodontics and for a career in dental education and research.

In this program, endodontic patients under direct supervision of the department's faculty and staff.

The graduate programs in endodontics must be completed within two years. Applications should be made no later than two months prior to the start date.

Students who have met the requirements for admission to the Graduate College must also be accepted into the program by the faculty of the Department of Endodontics. A personal interview with the applicant may be requested.

A student who fails to maintain a grade-point average of 3.0 to receive a certificate or degree. A student who fails this level will be allowed one semester to attain it. The circumstances creating the deficiency will receive careful consideration.

Students enrolled in the graduate programs in endodontics may not involve themselves in private practice enterprises outside the college. A student who does so will be asked to resign himself or herself exclusively either to the program or the practice.

Persons applying to the graduate program in endodontics must be able to support themselves financially for the time required to complete the program.

D.D.S. Program

52:160 Endodontics

Lectures, seminars, and laboratory projects designed to provide a broad knowledge of the specialty of endodontics for teaching and practice purposes; to gain sufficient experience and exposure to the educational process so that the student in each specialty of endodontics can recognize the value of the pursuit of academic research; and to develop the ability to think, conduct, and report the results of research investigations.

Applicants for the graduate program in endodontics must be graduated in an accredited college of dentistry and must comply with the requirements for admission to the Graduate College of The University of Iowa.

The graduate programs in endodontics normally begin July 1. However, it is possible to start a program at the beginning of the following spring semester or summer session. Applications should be made no later than two months prior to the start date.

Students who have met the requirements for admission to the Graduate College must also be accepted into the program by the faculty of the Department of Endodontics. A personal interview with the applicant may be requested.

A student who fails to maintain a grade-point average of 3.0 to receive a certificate or degree. A student who fails this level will be allowed one semester to attain it. The circumstances creating the deficiency will receive careful consideration.

Students enrolled in the graduate programs in endodontics may not involve themselves in private practice enterprises outside the college. A student who does so will be asked to resign himself or herself exclusively either to the program or the practice.

Persons applying to the graduate program in endodontics must be able to support themselves financially for the time required to complete the program.

Family Dentistry

The Department of Family Dentistry is responsible for the comprehensive treatment of dental patients. The experience encompasses
Courses
114:160 Introduction to Hypnosis in Clinical Practice 1.5 a.
2-3 hrs. Course introduces students to the use of hypnosis in the treatment of a variety of psychological disorders. Emphasis is placed on the role of hypnosis in the treatment of psychological disorders, and on the development of skills in using hypnosis to facilitate change in patients.

114:165 Psychiatric Management Seminar 1 a.
This course provides an overview of psychiatric disorders, their symptoms, and treatments. It also introduces students to the role of the psychiatrist in managing patients with psychiatric disorders.

114:166 Clinical Practice in Management of Pain 2 a.
This course focuses on the management of pain in clinical settings. It covers the assessment and treatment of pain, as well as the ethical considerations of pain management.

This course introduces students to the theory and practice of family systems. It explores the dynamics of families and how they influence individual behavior.

This course is a continuation of the previous course, focusing on the application of family systems theory to clinical practice.

114:170 Group Practice Seminar 1 a.
This course is designed to provide students with the skills necessary for effective group practice. It covers the theoretical foundations of group practice and practical techniques for leading groups.

114:171 Social Work in General Practice 1 a.
This course introduces students to the role of social workers in general practice. It covers the skills and knowledge necessary for social work in a general practice setting.

This course is designed for students who wish to specialize in a specific area of social work. It covers the theoretical and practical aspects of working in a specialized practice setting.

This course is a continuation of the previous course, focusing on the application of social work skills in a specialized practice setting.

This course is a continuation of the previous two courses, focusing on advanced skills and knowledge in specialized social work practice.

This course is a continuation of the previous three courses, focusing on advanced research and evaluation in specialized social work practice.

This course is a continuation of the previous four courses, focusing on the development and implementation of specialized social work services.

This course is a continuation of the previous five courses, focusing on the evaluation and improvement of specialized social work services.

This course is a continuation of the previous six courses, focusing on the integration of social work services into other health care systems.

This course is a continuation of the previous seven courses, focusing on the role of social work in specialty practice outside of traditional health care settings.

114:180 Diagnostic and Treatment Planning Seminar 1 a.
This course provides students with the skills necessary for the development of a treatment plan and for the provision of services to individual clients.

114:181 Diagnostic and Treatment Planning Seminar 2 a.
This course is a continuation of the previous course, focusing on the implementation of treatment plans.

114:182 Diagnostic and Treatment Planning Seminar 3 a.
This course is a continuation of the previous two courses, focusing on the evaluation and modification of treatment plans.

114:183 Diagnostic and Treatment Planning Seminar 4 a.
This course is a continuation of the previous three courses, focusing on the development of treatment plans for complex cases.

114:184 Diagnostic and Treatment Planning Seminar 5 a.
This course is a continuation of the previous four courses, focusing on the integration of treatment planning into other health care systems.

114:185 Diagnostic and Treatment Planning Seminar 6 a.
This course is a continuation of the previous five courses, focusing on the role of treatment planning in specialty practice outside of traditional health care settings.

114:186 Diagnostic and Treatment Planning Seminar 7 a.
This course is a continuation of the previous six courses, focusing on the evaluation and improvement of treatment planning services.

114:187 Diagnostic and Treatment Planning Seminar 8 a.
This course is a continuation of the previous seven courses, focusing on the integration of treatment planning into other health care systems.

114:188 Diagnostic and Treatment Planning Seminar 9 a.
This course is a continuation of the previous eight courses, focusing on the role of treatment planning in specialty practice outside of traditional health care settings.

114:189 Diagnostic and Treatment Planning Seminar 10 a.
This course is a continuation of the previous nine courses, focusing on the evaluation and improvement of treatment planning services.
Operative Dentistry

Department head: Walter W. Johnson
Faculty: associates: Kit Chiu Chan, David DeWalt, James Parrott, Walter W. Johnson
Director of Program: David DeWalt

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 the student to pursue courses which are of particular interest. Students may take courses for either a Master of Science degree or for a certificate in operative dentistry.

Requirements for the Master of Science degree include satisfactory completion of 48 semester hours of specified graduate-level courses; preparation of an acceptable thesis based on original research; and formal defense of the thesis and examination of the candidate by an examining committee.

An applicant for this program must be a graduate of a recognized school of dentistry and must comply with the requirements for admission to the Graduate College of the University. An interview with the applicant may be requested.

Courses

D.D.S. Program

62:04 Operative Dentistry Laboratory for Graduates 3.0 h. Basic study of dental materials and methods by which these materials are used in restorative processes of operative dentistry.
62:10 Dental Laboratory Limited 3.0 h. Lectures and seminars concerning dental restorative, orthodontic, surgical, and orthodontic techniques of human primary and permanent dentition.
62:11 Dental Laboratory Laboratory 3.0 h. Detailed study of human teeth morphology and function utilizing wax replicas and replica and plastic casts.
62:12 Operative Dentistry 3.0 h. Lectures and seminars concerning dental restorative, orthodontic, surgical, and orthodontic techniques of human primary and permanent dentition.
62:15 Operative Dentistry Laboratory 3.0 h. Students perform on cases of cavities in natural and plastic teeth, wax and various dental materials in fabrication of restorations. First year.
62:16 Operative Dentistry 3.0 h. Reading and seminars concerning the principles and techniques of operative dentistry.
62:41 Operative Dentistry 3.0 h. Clinic relating to operative dentistry on patients in operative clinic. Second year.
Predoctoral Program

The department's primary objective is to provide instruction to dental students and other health-profession students in the etiology and natural history of diseases occurring in and about the oral cavity. Instruction includes the clinical, laboratory, radiographic, and microscopic features of these diseases and their management. Instruction is provided in the clinical evaluation of patients to identify systemic diseases and their influence on dental therapy, and the influence of dental treatment on systemic diseases.

Master of Science Program

Advanced Instruction is available for graduate-level students in health sciences and related fields in preparation for specialty practice or careers in teaching and research.

Candidates for the Master of Science degree are expected to develop substantial ability for research into mechanisms of oral diseases, and should anticipate that considerable effort will be devoted to the completion of an assigned research project and the thesis based on it.

Minimum requirements for completion of this program are 48 semester hours of graduate credit and a thesis. The required courses are:

- 60:206 Problems in Biologic Methods in the Biomedical Sciences 3 s.h.
- 60:208 Oral Pathology 2 s.h.
- 60:211 General Pathology for Medical Students 5 s.h.
- 60:212 Systemic Pathology for Medical Students 7 s.h.
- 69:230 Research in Oral Pathology and Diagnosis 2 s.h.
- 69:250 Pathologic Processes 2 s.h.
- 69:256 Advanced Oral Pathology 3 s.h.
- 93:216 Dental Sciences Research Methodology 2 s.h.
- 60:198 Basic Histologic Science 4 s.h.
- 69:180 Topics in Oral Pathology 1 s.h.
- 69:200 Oral Pathology and Diagnosis Literature Review 3 s.h.

The tools for research are determined for each student after consultation with the major advisor. Since most graduates of advanced programs in oral pathology follow academic careers, students will participate in predoctoral teaching in the department as part of their education.

Certification Program

The program for certification in oral pathology combines academic studies with extensive laboratory practice of oral pathology under staff supervision, and requires a minimum of 24 months of full-time work for completion. Qualification for the certificate includes completion of all required courses with a passing grade, demonstration of competence in the practice of oral pathology, and a satisfactory grade in a final comprehensive examination before an examination committee composed of members of the graduate faculty in the Department of Oral Pathology and Diagnosis.

Required courses are:
- 60:206 Topics in Oral Pathology 2 s.h.
- 60:230 Oral Pathology and Diagnosis Literature Review 2 s.h.
- 60:256 Manifestations of Oral and Personal Disease 1 s.h.
- 69:180 Basic Histologic Science 4 s.h.
- 69:200 Problems 2 s.h.
- 69:226 Physical, Laboratory, and Historical Features of Disease 1 s.h.
- 69:277 Surgical Oral Pathology 1 s.h.
- 69:240 Histopathology 3 s.h.
- 69:241 Hospital Oral Pathology 4 s.h.
- 69:250 Pathologic Processes 2 s.h.

Facilities

The laboratories of the department are equipped for teaching in histopathology, immunohistology, laboratory diagnosis, and experimental pathology. Laboratories are available with facilities for investigation of structure and function of both oral and exfoliated tissues.

Admission Requirements

Applicants must have completed an accredited program leading to the D.D.S. or D.M.D. degree or its foreign equivalent with a minimum cumulative grade-point average of 2.7 (4.0 scale), and must present satisfactory scores in the Graduate Record Examination (GRE) Aptitude Test. Acceptance of any applicant meeting the requirements for admission will rest with the departmental staff. Prospective applicants are encouraged to discuss program requirements with the head of the department prior to application.

Courses

Oral Pathology

- 60:206 Oral Pathology 3 s.h.
- 60:211 Systemic Pathology 2 s.h.
- 69:230 Research in Oral Pathology 2 s.h.
- 69:250 Pathologic Processes 2 s.h.
- 69:256 Advanced Oral Pathology 3 s.h.
- 93:216 Dental Sciences Research Methodology 2 s.h.
- 67:216 Physical Diagnosis 2 s.h.

Oral Pathology/DENTISTRY

- 60:206 Oral Pathology 3 s.h.
- 60:211 Systemic Pathology 2 s.h.
- 69:230 Research in Oral Pathology 2 s.h.
- 69:250 Pathologic Processes 2 s.h.
- 69:256 Advanced Oral Pathology 3 s.h.
- 93:216 Dental Sciences Research Methodology 2 s.h.
- 67:216 Physical Diagnosis 2 s.h.

Admission Requirements

Applicants must have completed an accredited program leading to the D.D.S. or D.M.D. degree or its foreign equivalent, with a minimum cumulative grade-point average of 2.7 (4.0 scale), and must present satisfactory scores in the Graduate Record Examination (GRE) Aptitude Test. Acceptance of any applicant meeting the requirements for admission will rest with the departmental staff. Prospective applicants are encouraged to discuss program requirements with the head of the department prior to application.

Courses
Orthodontics

Department Head: John A. Dabel
Faculty: associate professors, George E. Anderson, Edith B. Brown, Richard M. Jones, Charles R. Kranos, associate professor, Robert H. Bower
Degree offered: M.S.

Predoctoral Program

The purpose of the predoctoral program in orthodontics is to enable the general practitioner of dentistry to recognize, diagnose, and treat with competence simple malocclusions of the teeth. Lecture courses guide the student in the learning of basic concepts of dental and facial growth, as well as treatment-oriented subject matter. In a laboratory course, diagnostic records are taken and evaluated and treatment appliances are fabricated. The department supervises a volunteer program of clinical treatment of selected patients.

Graduate Program

The purpose of the graduate program in orthodontics is to educate specialists capable of diagnosing and treating any malocclusion of the teeth requiring comprehensive care. The specialist should be familiar with and able to critically analyze, biologic, biomechanic, diagnostic, and treatment concepts in orthodontics. Satisfactory completion of a 23-month period of intensive study, including lecture courses, seminars, clinical practice, and a research paper, qualifies a student for the Certificate of Orthodontics. If a student satisfactorily completes a thesis based on an original research project, he or she will 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 biomechanics and craniofacial growth are available. Interaction with other departments provide learning and research opportunities in surgical orthodontics, oral and palatal treatment, speech pathology, animal experimentation and human growth.

Admission

Admission requires the D.D.S. degree, or its equivalent, and satisfaction of Graduate College requirements.

The application deadline is October 1 for the class starting July 1. Applicants will be required to come to the University for interviews with the faculty of the department.

Courses

80110 Growth and Development 1.5 A Semester-long course dealing with the physical and mental consequences of normal human growth and development, with emphasis on the craniofacial region.
80120 Orthodontic Diagnosis and Its Biological Foundations 1.5 A Introduction to various concepts of craniofacial growth theory in orthodontic diagnosis and the treatment of dental malocclusion. Special emphasis placed on the role of genetics in the etiology of malocclusion. This course includes development of diagnosis, physiology of craniofacial growth, morphometric considerations, growth and development, genetic variability in the type and extent of craniofacial deformity and facial asymmetry.
80130 Orthodontic Laboratory Procedures 1.5 A Practical experience in taking and analyzing orthodontic diagnostic records, developing treatment, and executing orthodontic procedures.
80160 Orthodontic Treatment 1.5 A Enables the student to successfully plan treatment for patients in his practice and to order and use equipment needed in the orthodontic office.
80161 Delivery of Orthodontic Services by the General Practitioner 1.5 A Seminar and laboratory sessions concern orthodontic appliances and equipment needed in the general practitioner's office. Treatment requires the ability to recognize different types of malocclusions that should be treated in the orthodontic office, and the ability to diagnose and plan orthodontic treatment. Orthodontic appliances are constructed and fitted to the patient's teeth in the office. This course is designed for individuals who are beginning their dental practice, and who need to learn the basics of orthodontic appliance construction and fitting. This course may be taken in conjunction with orthodontic treatment.
80162 Dental Assisting 1.5 A Emphasis is placed on assisting the orthodontist in the treatment of patients with malocclusion. This course is structured around the clinical aspects of orthodontic practice as they relate to orthodontic treatment. The student will have the opportunity to participate in the clinical aspects of orthodontic treatment, under the supervision of the orthodontist.
80170 Orthodontic Clinics 1.5 A Clinical experience in orthodontic diagnosis, treatment planning, and treatment; selected patients with malocclusion assigned for treatment according to the orthodontist's discretion. This is an opportunity for the orthodontist to observe the patient's response to treatment, and to evaluate the results of treatment. This course is intended for students who have completed their orthodontic education and who wish to continue their education in orthodontics. The course is designed to provide an opportunity for students to continue their education in orthodontics, and to gain experience in the practice of orthodontics. The course is structured around the clinical aspects of orthodontic practice as they relate to orthodontic treatment. The student will have the opportunity to participate in the clinical aspects of orthodontic treatment, under the supervision of the orthodontist.
80171 Advanced Orthodontic Concepts 1.5 A This course is designed for the student who has completed his orthodontic education and who wishes to continue his education in orthodontics. The course is structured around the clinical aspects of orthodontic practice as they relate to orthodontic treatment. The student will have the opportunity to participate in the clinical aspects of orthodontic treatment, under the supervision of the orthodontist.
80172 Social Orthodontic Potentials 1.5 A This course is designed for the student who has completed his orthodontic education and who wishes to continue his education in orthodontics. The course is structured around the clinical aspects of orthodontic practice as they relate to orthodontic treatment. The student will have the opportunity to participate in the clinical aspects of orthodontic treatment, under the supervision of the orthodontist.

For Graduate Students

80200 Control Theory and Craniofacial Morphogenesis 3 A B The student is required to take this course in the first semester. Students should have completed the necessary pre-requisites before registration for this course. This course is designed to provide an understanding of the craniofacial growth processes and their relationship to the development of orthodontic treatment. Students are expected to read and discuss the literature on craniofacial growth processes and to prepare a seminar presentation on a specific topic.
80201 Orthodontic Disease and Treatment Planning 3 A B This course is designed to provide an understanding of orthodontic treatment planning and its application to clinical practice. Students are expected to read and discuss the literature on orthodontic treatment planning and to prepare a seminar presentation on a specific topic.
80202 Orthodontic Diagnosis and Treatment Planning 3 A B This course is designed to provide an understanding of orthodontic diagnosis and treatment planning and its application to clinical practice. Students are expected to read and discuss the literature on orthodontic diagnosis and treatment planning and to prepare a seminar presentation on a specific topic.
80203 Advanced Orthodontic Theories 3 A B The student is required to take this course in the second semester. Students should have completed the necessary pre-requisites before registration for this course. This course is designed to provide an understanding of the craniofacial growth processes and their relationship to the development of orthodontic treatment. Students are expected to read and discuss the literature on craniofacial growth processes and to prepare a seminar presentation on a specific topic.
Pedodontics

Department Head: Stephen H. Y. Wei
Faculty: professors Clarence A. Fall, Ud L. Kandelman, Arthur A. Novak, Less M. Bimstein, Stephen H. Y. Wei
Degree offered: M.S. (Certificate also offered)

The Department of Pedodontics provides instruction for dental and graduate students in the prevention and treatment of dental diseases in children. Instruction covers didactic, laboratory, and clinical experiences. It gives special consideration to reviewing current literature and managing dental problems of handicapped children, and emphasizes efficient treatment through proper utilization of dental auxiliary personnel and record management.

The Graduate Program

Graduate study in pedodontics leads either to certification or a master's degree. The program gives special emphasis to preparation for certification by the American Board of Pedodontics. It is fully accredited by the Council on Dental Education of the American Dental Association.

Students are trained in all phases of pedodontics, to permit them career choices in practice, education, or research. Approximately 50 percent of the program is devoted to advanced clinical activity, 30 percent to didactic courses and practice teaching, and 30 percent to original research.

The program comprises a core of clinical and basic science courses, supplemented by elective selections determined by the student's individual interests. Development of a minor subject area is recommended. Oral development programs have been arranged with several other departments. Close association with the Department of Pediatrics in the College of Medicine, and with the University Hospital and University Hospitals and Clinics, permits emphasis on oral rehabilitation under general anesthesia, instruction in physical diagnosis, and management of exceptional children.

Research Opportunities

Research carried out by graduate students in pedodontics 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 areas of cariology, dentistry for handicapped persons, fluoride therapy, and child behavior management.

Quality of Faculty

Faculty members hold numerous national and state offices, membership, consultancies, and honors in professional organizations. They serve as reviewers for several professional journals and federal granting agencies. They also participate regularly in continuing education programs for dentists and other health science personnel. Several members are Diplomates of the American Board of Pedodontics.

Financial Aid

Support is available to qualified students in pedodontics through grants from the Office of Maternal Child Health, Bureau of Community Health Services, Department of Health, Education, and Welfare.

Admission

Applying to the Graduate College.

Courses

90.109 Pedodontic Diagnosis and Treatment

Concepts of growth and development, behavior management, and preventive techniques specific to pediatric patients.

90.110 Clinical Pedodontics

Comprehensive clinical management of pediatric patients.

90.116 Clinical Seminar in Pedodontics

Discussion of patient management, case histories, and treatment philosophies.

Primarily for Graduates

90.210 Introduction to Advanced Clinical Pedodontics

For the graduate student, emphasis on growth and development of child management, and therapy.

90.234 Microscopic Endodontic Laboratory

Laboratory facilities of intermediate endodontic appliances.

90.235 Growth and Development in Dentistry and Lab

Critical review and senior clinician's knowledge of growth and development of the child, with particular emphasis on principles and practices of integrated orthodontics. Laboratory demonstrations of biomechanics in appliance fabrication is emphasized.

90.239 Adverse Electric Membrane

An.

90.240 Advanced Endodontic Procedures

Discussions of growth and development, behavior management, preventive/therapeutic techniques, and dynamics of pedodontic periodontics.

90.240 Pediatric Periodontics

Discussions of preventive orthodontics, fluoride therapy, team and nutrition guidance, aesthetics, pharmacology, affective behavior related to pediatric patient.

90.240 Pediatric Laboratory Seminar

Development management, preventive/therapeutic techniques, and care for the handicapped child.

90.246 Pediatric Laboratory Seminar

Community responsibilities and practice management, research activity, and advanced preventive programs for the handicapped child.

90.249 Dental Management of the Handicapped Child

Principles and techniques for managing severe handicapping conditions of children in the dental office.

90.250 Research in Pedodontics

Research design and the completion of an original research project in research. The results are to be presented in a seminar form.

90.251 Thesis Preparation

Presentation of original research project and comprehensive examination.
Master of Science Program
The Master of Science program is designed primarily to provide training for teaching, research, and specialization in periodontology. The program meets all eligibility requirements for American Board of Periodontology certification. The program requires:
Satisfactory completion of a minimum of at least 78 semester hours of required and elective coursework;
Preparation and defense of an acceptable thesis based on original research requiring 11 semester hours of research and three semester hours of thesis preparation;
Satisfactory completion of a comprehensive written and oral examination.
Completion of the program requires 20 to 22 calendar months of full-time study.

Ad Hoc Interdisciplinary Ph.D. Program
Under Graduate College regulations, proposals for interdisciplinary doctoral programs of study may be developed. The Graduate College grants final approval of such individual programs. The Department of Periodontics will assist in the development of individual doctoral programs designed to train dentists for careers in teaching and research in periodontal diseases. Such programs will be interdisciplinary with anatomy, biochemistry, microbiology, pharmacology or physiology.

Certification
Designed to meet all the requirements of the American Board of Periodontology for eligibility for certification, the certification program provides a sound foundation for the clinical practice of periodontology.
Completion of the program requires 24 calendar months of full-time study with:
Satisfactory completion of a minimum of 80 semester hours of required and elective courses;
Satisfactory completion of a comprehensive written and oral examination; and
An acceptable literature review paper.
Opportunities are provided for experience in clinical and basic research. The certification program may be combined with the Ph.D. program.

Facilities
The department has 20 modern and well-equipped operating rooms devoted exclusively to periodontics, and access to hospital experience in the adjacent University Hospitals and the Veterans Administration Medical Center. Research facilities include a departmental research laboratory, and college laboratories in histology and histochemistry, microbiology and biochemistry, electron microscopy with EM and scan capabilities, and growth and development. These college facilities are in addition to those available by arrangement in the University Hospitals, the Veteran's Administration Medical Center, and in the basic science departments.

Financial Aid
The applicant must be financially prepared to undertake untapped studies. Assistantships are offered dependent upon available resources. The Ph.D. program is supported by a full research stipend.

Admission
Admission to graduate study in periodontics requires the O.D.S. degree or its equivalent, and satisfaction of Graduate College admission requirements. (See "Graduate College" section of the Catalog.) In addition to the Ph.D. program, the department gives strong preference to applicants with the M.D. degree. Interviews are encouraged but not mandatory.
Courses
Predoctoral

0211 Introduction to Periodontology

Fundamental concepts of periodontology for dental hygiene students exposed to lecture and seminar hours supplemented by slide-tape series.

0212 Advanced Periodontal Disease Students

Differential diagnosis and treatment plan for periodontal disease.

0214 Periodontic Methods

Best practices in periodontology, presented in lecture and seminar format supplemented by slide-tape series.

0215 Periodontal Therapy

Preclinical principles of periodontal therapy and their clinical application.

0216 Advanced Periodontal Therapy Students

Differential diagnoses and treatment planning for periodontal disease.

0217 Preventive Teaching in Periodontology

Preclinical principles of periodontal therapy and their clinical application.

0218 Surgical Techniques in Periodontology

Hands-on surgical techniques for periodontal patients.

0219 Surgical Techniques in Periodontology

Hands-on surgical techniques for periodontal patients.

0220 Biostatistics in Periodontology

Statistical analysis of patient outcomes.

0221 Advanced Periodontology

Students will learn the principles of periodontal disease and treatment planning.

0222 Preventive and Community Dentistry

Students will learn the principles of periodontal disease and treatment planning.

Graduate

0223 Advanced Periodontology

Provides in-depth graduate student with comprehensive review of periodontal therapy.

0224 Clinical Series in Periodontology

Comprehensive management of periodontal patients, presented with emphasis on treatment planning and case documentation and preparation for comprehensive dental therapy. Current dental science seminars increase.

0225 Methods of Instruction in Periodontology

Emphasizes differential diagnoses and treatment planning for periodontal disease.

0226 Preventive Teaching in Periodontology

Preclinical principles of periodontal therapy and their clinical application.

0227 Advanced Periodontal Therapy Students

Differential diagnoses and treatment planning for periodontal disease.

0228 Surgical Techniques in Periodontology

Hands-on surgical techniques for periodontal patients.

0229 Surgical Techniques in Periodontology

Hands-on surgical techniques for periodontal patients.

0230 Biostatistics in Periodontology

Statistical analysis of patient outcomes.

0231 Advanced Periodontology

Students will learn the principles of periodontal disease and treatment planning.

0232 Preventive and Community Dentistry

Students will learn the principles of periodontal disease and treatment planning.

Preventive and Community Dentistry

Graduate head: James D. Brown
Faculty: instructors James D. Brown, Necia George, Nelson D. Logan, W. Phillip Pratt
Associate professor Howard W. Field
Assistant instructors William Cunningham, Robert E. Glanz, Paul E. Carter, Ronald Stimpel, Dawn H. Willard
Instructor Roland Beckman
Degree offered: M.S.

Programs in preventive and community dentistry are designed to increase dental students' awareness of unmet health needs and to encourage them to develop and implement approaches to alleviate these needs.

Extramural programs provide students with opportunities to interact with health care teams and members of communities in low-income areas.

The department conducts five full-time academic 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 are two mobile dental vans, one with five operators and a second smaller unit designed for prevention programs. The vans are operated throughout the year, and give senior dental and dental hygiene students and graduates an experience which closely simulates community dental practice.

Master of Science Program

The Master of Science degree program is designed to prepare students in community dentistry, with emphasis on research, teaching, or administration.

The program is open to students with a minimum of 42 semester hours of coursework and prerequisites to meet the M.S. and residency requirements.

Courses
Predoctoral

0111 Introduction to Preventive Dentistry

Introduction to the dental services and programs offered to the public.

0112 Preventive Dentistry I

Specific data describing dental diseases and prevention methods for the control and prevention of disease.

0113 Preventive Dentistry II

Specific data describing dental diseases and prevention methods for the control and prevention of disease.

0114 Preventive Dentistry III

Specific data describing dental diseases and prevention methods for the control and prevention of disease.

0115 Preventive Dentistry IV

Specific data describing dental diseases and prevention methods for the control and prevention of disease.

0116 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

0117 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

0118 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

0119 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

01120 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

01121 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

01122 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

01123 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

01124 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

01125 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.

01126 Clinical Practice

Clinical program to allow the student to provide a comprehensive preventive and restorative service for the general public.
200 Community Dentistry
3.3h
Introduction to community dentistry, include study of a community’s dental health problems and strategies for solving them, stressing the importance of public health education and community participation in the planning of dental programs. Problems of dental care delivery are examined from the school, work, and other points of view. The role of the dentist in preventive and public health efforts is discussed.

11130- Introduction to Hypnosis in Clinical Practice
1.5h
Introduction to hypnosis as an essential component of the clinical health sciences. Emphasis on historical background, a survey of current clinical uses, and practical applications for the health care professional. Appropriate consent of course director. Same as PSY 3104.

11131 Community Oral Health Experience
2.5h
A two-week immersive experience in a public health setting. Students will participate in the delivery of oral health care services to underserved populations through a multisite program in the Greater Washington, D.C. area, including: various public health agencies, local clinics, community centers, and other community agencies. Practical experience includes hands-on treatment of patients in multiple settings, providing opportunities to develop and practice interdisciplinary skills.

Graduate
11200 Clinic Review in Preventive and Community Dentistry
2.5h
Review of literature on current subject matter, guidelines of individual faculty members, and through discussion. Discussion of current research, with analysis of research presented in written reports, including a critical review of literature and research presented at national conferences.

11201 Practicum: Teaching Preventive and Community Dentistry
2.5h
Practicum geared toward preparing current residents and graduate students for teaching assignments in preventive dentistry and for the students to enhance their understanding of the complex nature of preventive dentistry. The students will develop an understanding of the educational process as it relates to preventive dentistry.

11202 Research Seminar in Community Dentistry
4.0h
A seminar on a variety of topics related to community dentistry, including research methods, community intervention, and public health policy. Students will present research findings and participate in discussions of current issues in community dentistry.

11203 Independent Study in Preventive and Community Dentistry
4.0h
Independent study in an area of special interest to the student and under the supervision of a faculty member. The student will develop a course of study, including a plan of study, which will be approved by the faculty advisor.

Removable Prosthodontics
Department head: Forrest K. Berman
Faculty: professors Harold C. Appleby, Ronald L. Clingan, William E. Dietrich, associate professors Theodore H. Miller, Forrest K. Berman; assistant professor Lawrence R. Hobel, James F. Johnson; assistant professors Robert A. Brogn, John R. Thivolle
Degree offered: M.S.
Removable prosthodontics is the specialty of dentistry involving complete dentures and removable partial dentures.

The predoctoral program provides the student with the basic principles, techniques, and concepts of removable prosthodontics required for the practice of general dentistry, through laboratory projects and treatment of patients with prosthodontic needs.

The Master of Science degree program prepares the candidate for a career in education and research. It also satisfies the formal training requirements for eligibility for the American Board of Prosthodontics examination.

The requirements are flexible, permitting the development of a plan of study which will fit the individual needs of each student. This is possible since normally not more than two students are accepted each year for advanced training in the department. Each student is required to prepare a thesis based on original research and pass an oral and/or written comprehensive examination. The student’s adviser serves as chair of the examining committee. The student is required to meet all the requirements for the master’s degree as outlined in the Manual of Rules and Regulations of the Graduate College.

Minimum requirements for admission to the program correspond to the minimum requirements for admission to the Graduate College. In addition, the student must hold a D.S.O. or D.D.S, degree or its foreign equivalent.

Courses
85-100 Prosthetic Materials Laboratory
2.0h
Theory and evaluation of dental materials with basic applications. Same as 85-101.

85-101 Removable Prosthetic Techniques Laboratory
2.5h
Technical procedures in construction of complete and removable partial dentures.

85-105 Removable Prosthetic Technique Laboratory
2.5h
Laboratory exercises in construction of complete and removable partial dentures.

85-106 Removable Prosthodontics
3.5h
Seminars and clinical experiences; mouth examination, diagnosis, prognosis, and treatment of patients requiring complex removable partial dentures.

85-105 Removable Partial Dentures Seminar I
1.0h
Review of current literature in the principles, practices, and concepts of removable partial denture rehabilitation.

85-107 Complete Dentures Seminar II
1.0h
Review of past research in principles, practices, and concepts of complete denture rehabilitation.

85-102 Research Seminar in Prosthodontics
4.0h
Literature review, protocol preparation, and laboratory exercises.

85-103 Thesis Preparation: Removable Prosthodontics
4.0h
Preparation and defense of thesis based research.

85-104 Advanced Clinical Removable Prosthodontics
4.0h
Treatment of patients requiring complete and removable partial dentures.

85-201 Techniques: Removable
4.5h
An in-depth examination of the technical processes involved in the construction of complete and removable partial dentures.

85-202 Prosthodontics: Removable Prosthodontics
Clinical and classroom learning experience designed by advisor.
Removable Prosthodontics/DENTISTRY

Review of current literature in prosthodontics.

Discussion of assigned readings that are considered essential in removable prosthodontics literature.
College of Education

The nation's first university-level professional school in education was established at The University of Iowa in 1872. The department became the School of Education in 1907, and the College of Education, structured in the basic pattern which governs it today, was founded in 1913. 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 are the early developments in educational testing and measurement, which helped lay the foundation for the present-day educational testing and measurement industry, thus making Iowa City one of the best known centers for this educational specialty.

The college has eight divisions: Post-Secondary and Continuing Education; Educational Administration; Educational Psychology, Measurement, and Statistics; Secondary Education; Counselor Education; Special Education; and Instructional Design and Technology. The college also has a Social Foundations of Education Unit.

The University is accredited by the National Council for Accreditation of Teacher Education (NCA TE) for the preparation of elementary and secondary teachers and other professional school personnel, with the state the highest degree approved. Teacher preparation programs are also reviewed and approved by the Iowa Department of Public Instruction.

Teacher Education Programs

The College of Education offers undergraduate programs in teacher education leading to state of Iowa teacher certification in early childhood and elementary teaching, secondary school teaching, teaching in special education for mentally retarded and physically handicapped children, and health occupations education. Students admitted to the Teacher Education Program (T.E.P.) are degree candidates in the College of Liberal Arts or College of Business Administration and must complete the requirements for the Bachelor of Arts, Bachelor of Science, Bachelor of General Studies, or Bachelor of Business Administration degrees as explained in those college sections of the University Catalog. Policies, rules, and regulations of these colleges apply to students in the T.E.P. Students seeking the B.S. degree should especially note that a maximum of 40 semester hours of credit earned in the College of Education may be applied toward the degree.

Admission

Students who are interested in becoming teachers should indicate their proposed teaching major on the application for admission to The University of Iowa. Students who decide at a later date to enter the Teacher Education Program must declare the appropriate teaching major as their major in the College of Liberal Arts Advising Office, 116 Sontheimer Hall, and submit an Application for Admission to the Teacher Education Program to the Office of Admissions, 107 Calvin Hall by May 15 preceding the academic year in which the applicant plans to enroll in professional education courses.

Applications received after that date will be approved only if faculty and practical resources permit.

Although freshmen are admitted to the T.E.P., students are not eligible to enroll in professional education courses before they have completed 28 semester hours. The academic records of all students admitted to the T.E.P. will be reviewed at the end of each semester and students who have not maintained a 2.2 grade-point average on all coursework attempted and on all University of Iowa coursework will be
dropped from the T.E.P. Students who are dropped from the T.E.P. may reapply and may be readmitted when the required 2.2 grade-point average is achieved. If enrollment limits have not been reached.

Because of the limits of faculty and teaching stations, it may be necessary to restrict enrollments in early childhood education, elementary education, and special education, and in social studies and English in secondary education. In the event that the number of T.E.P. applicants exceeds the capacity of a program, students will be selected by rank order on the criteria established by the faculty.

To be admitted to foundation courses in education, an undergraduate student must:

- Have been admitted to The University of Iowa as a degree candidate;
- Have completed the American College Tests;
- Have attained sophomore standing (2nd semester hour) prior to the semester during which he or she seeks to enroll in the foundations of education sequence of courses;
- Have achieved a 2.2 grade-point average in all college coursework attempted and coursework completed at The University of Iowa; and
- Have submitted an Application for Admission to the Teacher Education Program (see date below).

Graduate students must:

- Have been admitted to the Graduate College;
- Have a cumulative grade-point average of not less than 2.0 (2.7 for M.A.T.) on undergraduate coursework; and
- Have been admitted to a specific certification program (e.g., elementary education, special education, or secondary English).

Student Teaching

The final phase of the Teacher Education Program is the professional semester, devoted to student-centered student teaching and directed observation in a variety of settings. Periodic seminars provide for discussion and evaluation of student teachers' experiences. The student teaching requirement may not be met by transfer credits accepted under unusual circumstances and with approval in advance.

To register for student teaching, the student must have:

- Satisfactorily completed 8 semester hours during one academic session in residence at The University of Iowa;
- Satisfactorily completed 7 TP:78 Educational Psychology and Measurement, 7ES1: Artistic Education for Instruction (Elementary), and 7E-100 Introduction to Early Childhood Teachers or 78-100 Introduction to Secondary School Teaching and 7ES9: Pre-Education Practicum or 7ES-91 Pre-Education Practicum;
- Satisfactorily completed the appropriate methods courses;
- Maintained a cumulative grade-point average of not less than 2.2 if an undergraduate student, or 2.7 if an M.A.T. candidate, on all college work attempted, all college work attempted at The University of Iowa, and all work attempted in his or her teaching major; and
- Filed application for an assignment by March 15 preceding the academic year during which student teaching is desired.

Waivers

Students who have completed practical teaching experiences or courses which they feel should be considered in lieu of requirements should consult with their advisers concerning waiver procedures.

The CUTE Program

Students who feel they may better advance their educational interests through student teaching in an inner-city alliance, and who are interested in working with inner-city youth, may apply for the Cooperative Urban Teacher Education (CUTE) program through the Director of Student Teaching. Iowa is one of several midwest institutions which place selected students in the Kansas City inner-city system. The program is open to any student who meets the requirements for student teaching.

Overseas Student Teaching

In cooperation with the University of Wisconsin-River Falls, a split student teaching assignment is available during weeks in one of our regular centers and eight weeks in Australia, England, Republic of Ireland, Scotland, or Wales. Students must make their own travel arrangements. Housing will be located for the students by the on-site coordinator. Students electing this program must meet the regular requirements for student teaching.

State Requirements

Certification to teach in Iowa requires an education component in human relations. This requirement can be met with 7X:170 Human Relations for the Classroom Teacher.

Certification to teach in many states requires a course in U.S. history or in American government. An initial certificate may be obtained in Iowa without meeting this requirement. However, a certified teacher who has not previously met the requirement must complete a minimum of 2 semester hours of U.S. history or American government before his or her certificate can be renewed. Students are therefore encouraged to include such a course in their preservice programs. Any of the following courses will satisfy the requirement:

30:1 Introduction to American History 4 s.h.
30:10 The American Political System 4 s.h.
Up to 4 semester hours may also be used toward social science core Requirement of the College of Liberal Arts:
16:81 American History 3 s.h.
16:82 American History 3 s.h.
16:10 The Colonial Period in America 3 s.h.
16:182 American Revolution Period 1740-1789 3 s.h.
19:183 United States to the Early Republic 3 s.h.
Psychology of Education
7E: 106 Educational Psychology and Measurement 3 a.h.
7E: 107 Child Development 3 a.h.
7E: 107 Psychological Bases of Instructional Design 3 a.h.
7E: 108 Socialization of the School-Age Child 2-3 a.h.
7H: 101 Educational Psychology 3-4 a.h.
7H: 100 Exceptional Children 3 a.h.

Curriculum Foundations
7W: 120 Introduction to Instructional Design and Technology 3 a.h.
7E: 105 Curriculum Foundations 2-3 a.h.
7H: 106 Curriculum Foundations 2-3 a.h.

Cross-cultural Factors
7U: 103 The Culturally Different in Educational Settings 3 a.h.
7F: 104 Education, Race, and Ethnicity 3 a.h.
7C: 105 Psychological Aspects of Black Behavior and Personality 3 a.h.
7E: 106 Multicultural Concepts and Educational Systems 3 a.h.

Teaching Methodology
7E: 100 Methods Elementary School Language Arts 3 a.h.
7B: 110 Methods: Social Studies 3 a.h.
7W: 122 Choosing Instructional Strategies 3 a.h.
7H: 112 Teaching of Adults 3 a.h.

Science
This minor is designed to help individuals acquire a better understanding of the function of science in the modern world. Problems of pollution, energy shortages, depletion of natural resources, world-wide starvation, and many others are examined. Courses requirements are as follows:
Any two of the following courses (for a total of 6 semester hours):
97: 102 Societal and Educational Applications of Earth Science Concepts and Topics 3 a.h.
97: 103 Societal and Educational Applications of Biological Concepts 3 a.h.
97: 105 Societal and Educational Applications of Selected Concepts of Physics 3 a.h.

Human Relations
This minor which emphasizes human relation education is designed to acquaint individuals with several basic techniques and concepts of counseling. It offers individuals an opportunity to acquaint themselves with alternative opportunities within the counseling profession. Course requirements are as follows:
Each of the following:
9C: 190 Testing Group Processes 3 a.h.
9C: 199 Counseling for Related Professions 3 a.h.
At least 12 semester hours from the following:
7C: 139 Introduction to Peer Counseling 3 a.h.
7C: 110 Process of Change and the Counselor 2-3 a.h.
7C: 112 Human Sexuality 3 a.h.
7C: 116 Human Relations for Service Professions 3 a.h.
7C: 133 The Culturally Different in Educational Settings 3 a.h.
7C: 150 Psychological Aspects of Men's and Women's Roles 1-3 a.h.
7C: 155 Psychological Aspects of Black Behavior and Personality 3 a.h.
7C: 105 Workshop in Counselor Education 3 a.h.
7C: 185 The Drug Culture 3 a.h.
7C: 187 Management and Motivation in Organizations and Activites 1-3 a.h.
7C: 183 Individual Instruction in Counselor Education: Undergraduate 3 a.h.
Master of Arts in Teaching

The M.A.T. program is a 28-semester-hour minimum nonthesis program designed for academically superior liberal arts graduates who included few or no professional education courses in their undergraduate programs. The program leads to a Master's degree and certification as a secondary teacher in such fields as art, business, English, foreign languages, home economics, mathematics, science, and speech and drama. A grade-point average of at least 2.7 on undergraduate coursework is required for admission. At least 18 semester hours of graduate coursework in the student's proposed teaching field must be completed. A sufficient number of semester hours of graduate work in education (not less than 20) must be taken to satisfy certification requirements.

Specialist in Education

This degree is granted upon the completion of a prescribed two-year, postbaccalaureate program designed for students preparing themselves professionally in such fields as teaching, administration, supervision, and special education. Of the minimum of 60 semester hours required for the degree, 28 are prescribed in the area of specialization; the remaining credit may be earned in content fields, supervised experience, research, and elective courses. The research must culminate in a written report. Course requirements and regulations the M.A.T. are the same as for the Master's degree, except that 15 semester hours of resident work on campus are required in one 12-month period or in two summer sessions, and coursework completed ten years prior to the final examination must be evaluated to determine the amount of credit that may be accepted toward fulfillment of the program requirements.

Doctor of Philosophy

The Ph.D. is the highest academic degree and is conferred upon those students who have demonstrated superior scholarship and mastery of research skills in coursework as well as in the preparation and defense of a dissertation.

Professional Improvement

Students may be admitted to a professional improvement program for purposes of taking limited coursework rather than a degree program. This program provides for minimal achievement appropriate for persons seeking initial credits, who are uninterested in career plans, or whose applications are too late to permit processing for regular admission into degree programs. Faculty review committees may admit students to this program rather than as degree candidates due to incomplete information, unclear degree objectives and the like, in order to permit registration in the University.

Certification Only

Students who have not been certified as teachers and who do not wish to pursue the M.A.T. or do not meet the admissions requirements may be admitted under the classification, "certification only." With students in this program, the adviser plans the academic and educational sequence of the program to meet the requirements for certification. Since enrollment is limited in early childhood education, elementary education, special education, and social studies, and English in the secondary program, admission or graduate students to this program is at the discretion of the program. Persons who wish to meet certification requirements for positions other than as a teacher (i.e., counselor, administrator, or curriculum specialist) who meet basic requirements and need only a few courses to validate or update their certification would apply for professional improvement status. Admission to a certification only program requires a minimum undergraduate grade-point average of 2.5.

Bulletin

Prospective graduate students should write to the College of Education for the bulletin, Advanced Studies in Education which provides specific information about the various programs, admission procedures and requirements, and rules and regulations.
Support Units and Special Resources

The Center for Educational Experimentation, Development, and Evaluation develops proposals, conducts studies, publishes reports and monographs, and provides pre- and postdoctoral training. Its program relates to instructional technology, materials and systems design and development, research, demonstrations and dissemination of research, and curricular products. It works in collaboration with federal, state, and private agencies, colleges, and cooperating school districts to design and conduct cooperative research, development, and evaluative projects. The Computer-Based Education Laboratory offers hardware and consulting support for computer applications and instructional development related to ongoing instruction at the College of Education.

The Curriculum Laboratory provides materials primarily for students and faculty members interested in curriculum problems. It brings together a convenient central location approximately 20,000 elementary and secondary textbooks, reference books, courses of study, bibliographies, pamphlets, and non-print media such as filmstrips, games, records, etc. The Laboratory also houses a 17,000-volume youth collection.

The Early Childhood Education Center provides practice, curriculum development, and research opportunities for undergraduate and graduate students preparing to work with preschool children. The Center enrolls some 80 children for two months to five years. Both full-day and half-day programs are provided.

The Educational Media Laboratory houses a variety of instructional equipment and materials; its facilities provide opportunities to develop skills in design and production of instructional materials and in the operation of instructional equipment of all types. In addition, laboratory staff members provide service to students and faculty of the College of Education for production of visual aids, color slides, filmstrips, super 8 film, thermos, transparencies and other materials related to instructional development.

The Educational Placement Office serves undergraduate teacher certification students interested in teaching positions, as well as graduate students seeking other certified school positions. Graduate students interested in college teaching positions in education or in other fields, as well as those interested in administration or positions in higher education, are also served by this office.

The Education Library is located in the Main Library. It provides books, periodicals, reference books, films, ERIC microfiches, tests, and a reserved book room for students and faculty.

Instructional Activities for the Classroom Teacher is a cooperative program between the University of Iowa and the State Department of Public Instruction involving the entire state of Iowa. The purpose is to conduct an in-service program for all classroom teachers of the handicapped.

The Iowa Testing Programs staff develops standardized educational tests, such as the widely-used Iowa Tests of Basic Skills and Iowa Tests of Educational Development, for use in elementary and secondary schools. The department also conducts research studies in educational measurement and evaluation, publishes brochures, sponsors lectures and symposia, provides consulting services to school systems, and provides training experience for graduate students in measurement and statistics.

North Central Association (NCA) of Colleges and Schools is the largest and most active of six regional accrediting associations in the United States. Iowa is one of 19 NCA-member states. The NCA's primary purpose is to foster improvement in education at the elementary, secondary, and collegiate levels by self-evaluation of educational programs, validation by evaluation teams, and adherence to policies and standards for continued membership. The University of Iowa belongs, and supports the office of the other of the Iowa NCA State Committee.

The Reading Clinic makes possible investigative into the fundamental causes of reading deficiencies and experimentation with methods of overcoming these deficiencies. It provides facilities for observation and practice in the diagnosis and teaching of severely retarded readers.

The University Hospital Center for Disturbed Children is located in the child psychiatry unit of the University's Psychiatric Hospital. Children attending this school are residents of the child psychiatry unit. The program is supported by the Psychiatric Hospital and directed by the College of Education. Opportunities are available for student teaching and practice experience in school psychological services.

Statistical Laboratory contains a variety of calculating equipment. It provides experience in the application of such equipment to the analysis of statistical data, and it provides facilities for the analysis of research.

University Counseling Services are facilities available to students in counseling psychology for research and practical purposes.

University Hospital School is a University-affiliated facility and, as such, it provides a valuable service to school districts to developmentally disabled youngsters, interdisciplinary training activities for personnel, and research projects in program development and effectiveness.

The University Hospital-Speech contains two unique, integrated services sections, a residential program for physically handicapped youngsters from throughout Iowa, and a day program for mentally retarded youngsters from surrounding school districts. Placement of children in the facility is worked out cooperatively with parents, appropriate agencies, and local school programs.

In addition to providing direct services to developmentally disabled youngsters, the University Hospital School has two other closely related functions—specialized training for workers and trainees in all areas concerned with handicapped children, and official research pertaining to cause and prevention of handicapping conditions.

The basic philosophy of the facility is to return children to their local community programs within the shortest possible time. This philosophy is reflected in the
maintenance of cooperative ties with local community programs either through outreach activities for training, pre-placement and follow-up purposes, or through conferences held at the facility.

Teacher Certification Services
Though each state has its own teacher certification requirements, a majority of state certification agencies have entered into an agreement to issue certificates to applicants who have completed approved teacher education programs in institutions accredited by the National Council for Accreditation of Teacher Education. The University of Iowa teacher education programs have been approved by the council. Students planning to major in special education are advised to be certain they will be eligible for certification if they plan to teach in a state other than Iowa.

Financial Aids
Persons interested in employment opportunities in any of the support units and special resources listed above should contact the director of each facility and indicate their interests, their academic and experience records, and their career or degree goals at The University of Iowa.

Graduate Assistantships
Individual academic programs provide opportunities for teaching, research, or service assistantships, as well as fellowship and related employment opportunities. Inquiries should be addressed to the chair of the division or to the director of the special program in an area in which the student believes he or she can provide service or achieve an outstanding academic record. If the student has applied or admission, his or her student file is available for review by those responsible for selecting the assistantship(s) for the student's program. Assignments are normally, but not always, made from within the program area of the assistantship.

Special Graduate Assistantships in Education
The Iowa Testing Programs and the Iowa Mississippian Research Foundation provide sufficient funds to support a limited number of special graduate assistantships in education. Students admitted to or pursuing any of the advanced degree programs offered by the College of Education are eligible to apply provided they are United States or Canadian citizens. The assistantships are renewable for a limited number of times, and, at the present, provide stipends similar to those for other assistantships. Students are assigned to work under the direction of a faculty member in a research capacity, and must be enrolled for not less than 9 nor more than 12 semester hours per semester. All candidates must submit transcripts of all college work completed (undergraduate as well as graduate), letters of recommendation, and scores on the Graduate Record Examination (GRE) Aptitude Test. The application must be filed in a special form which may be obtained from the director of the Iowa Testing Program, Lindquist Center, College of Education. The application deadline is February 1.

Loans and Outside Employment
Information about commercial and federal loans as well as part-time employment in the University and the community may be obtained from the Office of Student Financial Aid.

L. A. Van Dyke Student Loan Fund
This loan fund has been established by the friends of Associate Dean Emeritus L. A. Van Dyke in recognition of his significant contribution to education in the state and the nation, and is available to degree candidates in secondary education with superior performance records as teachers or administrators. For further information and application forms, contact Professor J.E. McAdam, Division of Secondary Education, W 041 Eavey Hall, The University of Iowa, Iowa City, Iowa 52242, or the University Office of Student Financial Aid.

College of Education Graduate 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:

- Perry Eugene McCleaner Award: To the outstanding candidate for an advanced degree in educational administration.
- Paul C. Packer Award: To the outstanding candidate for the master's degree in education.
- Harvey H. Davies Award: To an outstanding student in educational administration or higher education.
- Lambda Theta Graduate Award—M.A. and Ph.D. levels: To an outstanding graduate student of high scholarship, promise in the professional areas of research, teaching or writing, and striking personal qualities.

Faculty
Ninety-five percent of the members of the faculty with academic rank held earned doctorates in their teaching fields, and 95 percent 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 on the College of Education faculty also hold academic ranks 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 academic rank both in their academic disciplines and in education.
Research and Development

The college has a strong history of commitments to educational development and research. In addition to independent research by individual faculty members, several studies are being pursued with the support of foundation and federal grants awarded to divisions and individual staff members. Most members of the faculty are active in professional societies, and several recently have held or now hold key offices in such organizations at the national level. Systematic research programs are sponsored through the Center for Education and School Organization at the national level. Such programs are described above.

Intervisitental Courses

EDU 150: Facilitating Career Development in School

Prospective student developers of career education and guidance programs in schools, as well as individuals interested in the role of career education in schools, are invited to participate in this course. It is offered in association with the Conference on Education and School Organization at the national level. The division of counseling education is primarily involved in the training of practitioners and educators in the graduate level, with degree programs in student development in postsecondary education, rehabilitation counseling, counseling and human development, counseling psychology, and substance abuse counseling. In addition, the division offers training in interviewing and interpersonal skills for students in other professional and graduate programs, as well as some basic courses in these areas for undergraduate.

Student Development in Postsecondary Education

Master of Arts

The M.A. program provides preparation for college positions in admissions, student activities, financial aid, student union, career planning and placement, residence halls, foreign student services, community college counseling, school counseling, and external degree programs. The program is designed to meet the needs of students who wish to continue their education and can be expected to meet the needs of students in the following areas:

Prerequisites: Course in Education.

EDU 211: Student Research Topics

Graduate Record Examination (GRE) Aptitude Test

A score of at least 1,000 on the Graduate Record Examination (GRE) Aptitude Test is required on one of the two aptitude portions of the Graduate Record Examination. Evidence of outstanding leadership in extracurricular activities at an undergraduate institution; Highly successful experience in the field; Candidates must also evidence an appropriate level of emotional balance, personality, and interpersonal skills. Students admitted on a conditional basis will usually be required to earn a 3.0 grade-point average to be admitted to regular status.

Education Specialist

The Ed.S. program provides specialized professional preparation in college student development beyond the master's level for persons not planning to enter doctoral study; to prepare candidates for such positions as associate dean or dean of students at a small college or as director of admissions, student activities, financial aid, student union, career planning and placement, residence halls, foreign student services, community college counseling service, adult continuing education, external degree programs, and, with experience, as college teachers.

Admission requires completion of a master's degree in counseling, school counseling, personnel work, or a closely related area, and a 3.0 grade-point average. Successful experience in college student personnel work or equivalent experience is desirable.

Doctor of Philosophy

The Ph.D. program provides preparation for such positions as counselor, counselor-educator, researcher, associate dean or dean of students, or as director of admissions, student activities, financial aid, student union, career planning and placement, residence halls, foreign student services, community college counseling service, adult continuing education and external degree programs.
The M.A. thesis or its equivalent is not necessary for admission to the Ph.D. program, but to take the Ph.D. comprehensive examination, the student must offer an M.A. thesis or equivalent as evidence of ability to do research. Students whose credentials for admission are not entirely satisfactory may be admitted conditionally. Students admitted on a conditional basis usually are required to earn a 3.5-grade-point average to be admitted to regular status.

Counseling Psychology

Doctor of Philosophy

The program provides preparation in general psychology and research methods in order to help students become counseling psychologists who are competent both in the provision of a wide range of human services and in conducting research on a wide variety of psychological problems. Graduates teach courses in counseling, conduct their own research and direct that of their students, supervise counselor trainees, and consult with other student services personnel. Graduates occasionally take service positions in community mental health agencies or similar practices.

Preference, applicants for admission to the program will have an undergraduate major or minor in psychology, or a major in some related field; a grade-point average of 3.0 or higher; Graduate Record Examination (GRE) Aptitude Test score of 1,200; and three letters of recommendation. A personal interview may be required before final admission. All application materials must have been received by February 1 of each year; students will be notified about March 15 concerning their applications. Very few students (four to eight) are admitted to the doctoral program each year.

Rehabilitation Counseling

Master of Arts

The M.A. program provides preparation for work in state rehabilitation agencies, sheltered workshops, rehabilitation centers, mental hospitals, prisons, and other public and private agencies concerned with the rehabilitation of the handicapped.

Admission requirements are the same as the minimum requirements of the Graduate College. In addition, a personal interview is highly desirable. Applications are reviewed March 1 for fall admission only.

Doctor of Philosophy

The Ph.D. program provides preparation for leadership in college and university rehabilitation counselor education and research programs in universities and state agencies.

Admission requirements for the Ph.D. program are the same as the minimum requirements of the Graduate College, plus an M.A. thesis or equivalent. Applicants who have recently graduated from an M.A. program in rehabilitation counseling, and who have not had at least one year of full-time work experience in rehabilitation counseling, will not be considered. Such work experience is viewed as highly desirable and will enhance the application. Applications are reviewed March 1 for fall admissions.

Counseling and Human Development

Master of Arts

The M.A. program provides preparation for counseling in a variety of settings.

Admission requirements for the M.A. program are a 2.5 minimum undergraduate grade-point average and completion by the applicant and his or her references of forms supplied by the Office of Student Personnel, College of Education.

Educational Specialist

The purpose of the Ed.S. program is to enable counselors and counselor supervisors to increase their competence beyond the master's level.

Admission requirements are a master's degree or equivalent in counseling and experience as a counselor, a 3.0 minimum grade-point average on all graduate study, and the completion of forms supplied by the Office of Student Personnel, College of Education.

Doctor of Philosophy

The Ph.D. program provides preparation for teaching, leadership, and research positions in counseling.

Admission requirements are a 3.25 minimum grade-point average and satisfactory performance on the Graduate Record Examination (GRE) Aptitude Test; and a master's degree or its equivalent in a counseling area.

Substance Abuse Counseling

Master of Arts

The purpose of the M.A. program is substance abuse counseling to prepare individuals to function in a wide variety of community counseling settings. The emphasis is on individual, group, and family counseling.

Admission requirements are the same as the minimum requirements of the Graduate College. In addition, a personal interview and some experience in the field are highly desirable.

Facilities

A wide variety of counselor education practicum experiences is available in a large number of settings in neighboring community agencies, schools, and colleges, as well as in many agencies throughout the University.

Financial Aid

Depending on federal funding, graduate training fellowships may be available for students entering the rehabilitation counseling and drug counseling programs. Many other graduate students in the Division of Counselor Education hold a wide variety of graduate assistantships. For example, many of the University's student service units award part-time assistantships to graduate students in the college student personnel program. Applicants for assistantships should contact the coordinator of the particular counselor...
emphas, senior high school, community college, or other setting, major emphasis on counseling procedures. Prerequisite: consent of instructor.

7C301 Normal Personality 3 a.h.
Study of personality as related to normal and abnormal behavior; history of personality theory with an emphasis on current theories of stress, anxiety, motivation, behavior, and personality development. Prerequisite: PDC 101 and PDC 102, or consent of instructor.

7C302 Personality Psychology 3 a.h.
Comprehensive review of major psychodynamic and intrapsychic processes from the perspectives of neurosis, neuroses, and psychosomatic disease. Emphasis is on understanding the development, treatment, and prevention of abnormal behavior. Prerequisite: 7C301 and PDC 102, or consent of instructor.

7C305 Introduction to Human Services 3 a.h.
History, philosophy, and status of social service personnel: emphasis on close study approach to human service personnel and their work.

7C307 The College Student 3 a.h.
Physical, psychological, and social characteristics of college students—elements of higher education.

7C325 Seminar: Student Services 3 a.h.
Survey of the study and structural organization of student services, problems, and crises related to the complex areas of academic and personal administration in higher education. May be repeated. Prerequisite: consent of instructor.

7C333 Practice in Student Services 3 a.h.
Supervised practice in college student personnel agencies. May be repeated. Prerequisite: consent of instructor.

7C335 Administration of Student Services 3 a.h.
Organizational theory, theories of administration, personnel administration, human relations, and other aspects of management for college student personnel services.

7C336 Seminar: College Student Services Research 3 a.h.
Lectures, discussions, and seminars on selected college student personnel research studies. May be repeated.

7C337 Seminar: Reading in Research in Education 3 a.h.
Study of research articles, research syntheses, and text with emphasis on development of research methodology and research techniques.

7C341 Seminar: Fluency in Professional Interviewing 3 a.h.
Prerequisite: consent of instructor.

7C343 Seminar: Psychological Aspects of Identity 3 a.h.
May be repeated. Prerequisite: consent of instructor.

7C344 Supervised Practice in Rehabilitation Psychology 3 a.h.
May be repeated. Prerequisite: consent of instructor.

7C345 Supervised Practice in Rehabilitation Procedures 3 a.h.
Full-time work under supervision in a related program area of rehabilitation psychology. Prerequisite: consent of instructor.

7C349 Advanced Counseling and Psychotherapy 3 a.h.
Theories and techniques of counseling others with personal and interpersonal problems. Prerequisites: 7C301 and 7C302.

7C350 Experimental Approaches to Counseling Research 3 a.h.
Appraisal of experimental methodology and laboratory procedures in study of counseling and mental hygiene. Prerequisite: consent of instructor.

7C355 Processes and Outcomes in Counseling and Psychotherapy 3 a.h.
Give students-based knowledge of state of research on the process and outcome of counseling and psychotherapeutic procedures. Prerequisites: PDC 101 and PDC 102, or consent of instructor.

7C356 Seminar: Current Trends in Counseling 3 a.h.
Recurrent literature on recent advances in counseling centers and community mental health programs. Participation in an ongoing activity and exposure of this activity. Prerequisite: 7C301 and concurrent enrollment in 7C345.

7C370 Advanced Group Counseling and Psychotherapy 3 a.h.
Survey of theories and techniques of group counseling and psychotherapy. Integration of theory into supervised experience and research on group counseling. Prerequisite: 7C305.

7C376 Behavioral Counseling and Psychotherapy 3 a.h.
Focuses on qualitative evidence of techniques of behavioral therapy and approaches to human behavior. Prerequisites: consent of instructor.

7C378 Advanced Practical in Counseling 3 a.h.
Supervised practical in counseling: Intensive study of theoretical and methodological approaches for advanced study in the area of counseling. Prerequisite: Consent of instructor.

7C380 Practice in College Teaching 3 a.h.
Provides qualified graduate students with supervised college teaching experience in character education courses; teaching in collaboration with faculty; observation and analysis of college teaching; planning and evaluation of courses. Prerequisites: consent of instructor.

7C382 M.A. Thesis in Counselor Education 3 a.h.
Prerequisite: consent of instructor.

7C385 Educational Specialist Research in Counselor Education 3 a.h.
Prerequisite: consent of instructor.

7C402 Practice in Counseling Psychology 3 a.h.
Supervised practice in counseling services. May be repeated. Prerequisites: 7C301 and 7C302, or equivalents, and consent of instructor.

7C404 Advanced Practice in Counseling Psychology 3 a.h.
Advanced practice of more advanced student as part of internship in counseling services. Prerequisites: 7C301 and 7C302.

7C405 Seminar on Supervisor 3 a.h.
Seminar for students involved in a counseling service in the capacity of counselor. Prerequisites: 7C301 and 7C302.

7C406 Seminar: Research in Counseling 3 a.h.
Prerequisite: consent of instructor.

7C410 Ethics and Law in Counseling Psychology 3 a.h.
Prerequisite: consent of instructor.

7C420 Ph.D. Thesis in Counselor Education 3 a.h.
Prerequisite: consent of instructor.

The Division of Educational Administration functions to prepare individuals for administrative positions within the educational field on the M.A., Ed.D., and Ph.D. levels.

The primary purpose of the M.A. program is to prepare individuals for appointments as elementary or secondary school principals, central staff members, for certain positions within state departments of education, and for positions with area education agencies.

The Ed.D. program is designed to prepare students for appointments as superintendents of schools, in area education agencies, state departments of education, and the U.S. Office of Education, and to assist school administrators in upgrading their administrative skills.

The primary purpose of the Ph.D. program is to prepare students for positions as assistant superintendents, or at all levels of school administration and to be able to teach educational administration at the college and/or university level.

The Division of Educational Administration offers its programs jointly with the elementary and secondary as well as all other divisions in the College of Education. It also offers joint programs with other colleges in the University.

To be eligible for certification by The University of Iowa for certification in Iowa as an elementary principal, secondary principal, or superintendent, an examination is required. Hold or be eligible to hold an Iowa Permanent Professional Teaching certificate.

Have a minimum of four years of experience.
successful teaching experience with a valid teaching certificate; 
Have earned at least 20 semester hours of graduate credit in a planned program in general school administration at The University of Iowa; and 
Have a master's degree.

In addition, each certificate has these requirements:

Elementary Principal (Endorsement 11): completion of the educational administration program with elementary school emphasis;

Secondary Principal (Endorsement 22): completion of the educational administration program with secondary school emphasis; and

Superintendent (Endorsement 11): 60 semester hours of graduate work in a planned program in general school administration.

M.A. in Educational Administration

The purpose of this program is to prepare individuals for appointments as elementary or secondary school principals, central staff, or positions with area education agencies. The student may take the program with the 32 semester hours minimum, or without (32 semester hours minimum).

Couse Requirements

With the aid of his or her advisor, the student prepares a plan of study including these general requirements:

TE:117 Philosophies of Education 2-3 s.h.

TE:121 Educational Psychology 3-4 s.h.

TD:201 Foundations of School Administration 3 s.h.

The student must specialize in elementary, secondary, or central staff administration, by completing one of the programs outlined below. The candidate may choose a program approved by his or her advisor to satisfy degree requirements.

Elementary School Administration

TE:180 Educational Measurement for the Classroom Teacher 2-3 s.h.

TD:261 Elementary School Principal 3 s.h.

TD:262 Elementary School Organization Patterns 3 s.h.

TE:300 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle School 3 s.h.

TD:304 Seminar: Elementary Supervision and Administration 2-3 s.h.

TD:385 Supervision of Instruction 2-3 s.h.

Two of the following:

TD:303 Seminar: Administration and Coordination of Curriculum 2-3 s.h.

TD:310 Analysis and Appraisal of Curriculum 2-3 s.h.

TE:304 Analysis and Selection of Children’s Literature to Develop Educational Environments 3 s.h.

TE:305 Supervision of Elementary School Language Arts 3 s.h.

TE:351 Supervision of Elementary School Social Studies 3 s.h.

TE:252 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.

TE:253 Supervision of Elementary School Mathematics 3 s.h.

TE:254 Building Foundations for Reading: Preprimary and Primary 2-3 s.h.

TE:255 Supervision of Intermediate Grades Reading 3 s.h.

TE:267 Supervision and Curriculum Development in the Kindergarten and Early Primary 2-3 s.h.

TE:268 Supervision and Curriculum Development in Pre-kindergarten Care and Education 3 s.h.

TE:280 Supervision of Student Teachers and Auxiliary Personnel 2-3 s.h.

Secondary School Administration

TD:201 Computer Applications in Education 2-3 s.h.

TD:280 Secondary School Principal 3 s.h.

TE:180 Curriculum Foundations 2-3 s.h. (same as TD:180)

TD:290 Improving Instruction in the Secondary School 3 s.h.

TD:275 Issues and Trends in School Guidance 2-3 s.h.

TD:291 Secondary School Curriculum 2-3 s.h.

TE:143 Introduction to Statistical Methods 3 s.h.

Central Staff Administration

TE:143 Introduction to Statistical Methods 3 s.h.

TD:203 Computer Applications in Education 2-3 s.h.

TD:255 Financial Management of Local School Systems 3 s.h.

Thesis

A student selecting the M.A. program with thesis must take TD:395 M.A. Thesis in Education Administration and a final oral examination on the thesis.

Comprehensive Examinations

The student takes two three-hour examinations in areas of emphasis selected with the approval of his or her advisor.

Ed.S. in Educational Administration

This program is designed to enable educational personnel to meet original certification requirements or to upgrade their background and skills to prepare them for positions as principals, superintendents, and other administrative and supervisory positions in educational agencies. A student desiring certification plans a program approved by his or her advisor to meet state certification requirements.

Course Requirements

TE:117 Educational Psychology 5-4 s.h.

TE:117 Philosophies of Education 3-4 s.h.

TD:201 Foundations of School Administration 3-4 s.h.

TD:267 Theory in Administration 3 s.h.
Program Emphasis
Students must complete the balance of their minimum required hours (minus cognates and electives) of the following areas of emphasis. Courses specifically listed in each area of specialization are the required courses.

Elementary School Administration
7P: 150 Educational Measurement for the Classroom Teacher 2-3 s.h.
7D: 261 Elementary School Principal 3 s.h.
7D: 262 Elementary School Organization Patterns 3 s.h.
7E: 300 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 3 s.h.
7D: 303 Seminar: Administration and Coordination of Curriculum 2-3 s.h.
7D: 304 Seminar: Elementary Supervision and Administration 2-3 s.h.
7D: 381 Analysis and Appraisal of Curriculum 2-3 s.h.
7D: 383 Supervision of Instruction 2-3 s.h.

Secondary School Administration
7E: 186 Curriculum Foundations 2-3 s.h. (same as 7E: 186)
7P: 150 Educational Measurement for the Classroom Teacher 2-3 s.h.
7D: 203 Computer Applications in Education 2-3 s.h.
7D: 290 Secondary School Principal 3 s.h.
7D: 290 Improving Instruction in the Secondary School 3 s.h.
7S: 291 Secondary School Curriculum 2-3 s.h.
7E: 270 Issues and Trends in School Guidance 2-3 s.h.
7P: 143 Introduction to Statistical Methods 3 s.h.

General School Administration
7E: 300 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 2 s.h.
or
7S: 291 Secondary School Curriculum 2-3 s.h.
7D: 203 Computer Applications in Education 2-3 s.h.
7D: 291 Administration of Professional Personnel 2-3 s.h.
7D: 295 Financial Management of Local School Systems 3 s.h.
7D: 298 Legal Aspects of School Personnel 2-3 s.h.
or
7D: 299 Legal Aspects of School Administration 2-2 s.h.
7P: 143 Introduction to Statistical Methods 3 s.h.

Cognates
The student must complete a minimum of 8 semester hours bearing a cognate relationship to educational administration, subject to the advisor's approval.

Electives
The student chooses electives completing the 60 semester-hour requirement for the Ed.S. degree in the program for general or central staff administration, the student may choose electives for specialization in such fields as staff personnel, business affairs, instruction, theory, legal aspects, curriculum, and information systems.

Research
All candidates for the Ed.S. degree must complete a formal research paper (4 semester hours) dealing with a specific problem in school administration or instruction.

Comprehensive Examination
The comprehensive examination for the Ed.S. degree consists of one threE-hour examination in educational administration and one three-hour examination in a specialized area either in educational administration or in a related or cognate field.

Ph.D. in Educational Administration
The purpose of this program is to prepare students for positions at all levels of school administration, to do research in educational administration, and to teach educational administration at the college or university level.

All prior preparation and experience is carefully analyzed and a sequence of courses determined to best equip the individuals for their career objectives. As a general guideline, the student is expected to have a general background in professional education, educational administration, and an area specialization in at least one aspect of educational administration.

Commonly selected specialization areas are: general administration, elementary school administration, secondary school administration, systems analysis and research, school finance, curriculum, legal aspects, theory, and school personnel. Students specializing in general and secondary administration must complete a 10-semester-hour cognate outline the College of Education.

Proficiency in two tool research areas must be demonstrated.

Comprehensive Examinations
Each doctoral student must complete satisfactorily three three-hour examinations in areas approved by the student's advisor and the dissertation chair. One of these examinations will be based on the general field of educational administration. The other two examinations will be based on the student's chosen area of specialization. Students pursuing doctoral programs in areas other than educational administration desiring to utilize some aspect of educational administration as an area of concentration for which they would request a comprehensive examination should consult with their educational administration advisor early in their sequence of study.

Any of the areas of specialization open to doctoral students in educational administration are open for this purpose to other doctoral students provided they meet the necessary prerequisites for
Early Childhood and Elementary Education

70-201 Seminar: The Foundations of Education
- Exploration of the relationship between education and economics, including supply and demand, and the role of government in planning, efficiency and effectiveness, Prerequisite: "Several.

70-202 Survey of Educational Research
- Description of current trends in educational research, development of theoretical bases and research techniques, methods of data collection, design, interpretation, "Several.

70-203 Research Project
- Small-scale research projects developed and executed; supervised experiential training in teaching, management, analysis, and reporting of research activities, student assumes major responsibility, Prerequisite: "Several.

70-204 Educational Project
- Research project. Prerequisite: consent of instructor.

70-205 Educational Administration Practice
- Experience exercises in working with educational personnel, design and operation of educational programs, planning, evaluation, and decision-making.

70-207 Seminars: Educational Theory and Educational Administration
- Presentation of current issues related to particular aspects of educational theory and systems development and problems for presentation and discussion, Prerequisite: "Several.

70-208, Pr. D. candidate, and consent of instructor.

70-209 Seminar: Value Problems in the Administration of American Education
- Philosophical and sociological basis underlying American system for the education of public education; various issues as to exist at the present time, in conformity and diversity in democratic society and democratic educational systems; contemporary issues, "Several as 70-206.

70-210 Analysis and Synthesis of Curriculum
- Comprehensive investigation of systematic procedures for identifying and evaluating the nature of educational programs in various fields, critical analysis of a given school district's curriculum offering, "Several for demonstration, curricular, and supervisory programs or positions.

70-211 Supervision of Pupils
- Problems and procedures in working effectively with teachers and staff groups, methods of avoiding misunderstandings, "Several for demonstration, curricular, and supervisory programs or positions.

70-212 Seminar for Educational Administration
- Problems of non-technical aspects of educational administration; emphasis on problem solving within an organization; specific problems presented, "Several.

70-213 Special Topics in Educational Administration
- Individual and group investigation of contemporary problems and issues in educational administration, Prerequisite: "Several and consent of instructor.

70-214 Seminar in Educational Administration
- Advanced study of selected problems in educational administration, Prerequisite: consent of instructor.

70-215 Fluid Service Project in Educational Administration
- Supervised work project which is needed for an actual school setting, Instructor responsible for selection, supervision, evaluation, etc., Prerequisite: consent of instructor.

70-216 Teaching in Educational Administration
- Supervision of the research, design, and writing of a thesis at the M.A. level provided in an individual instruction format, Prerequisite: consent of advisor.

70-217 Educational Specialization in Educational Administration
- Supervisor of the design, research, and writing of a research project of significant quality for an advanced level student which provides an individual longitudinal study, Prerequisite: consent of instructor.

70-218 Ph.D. Thesis in Educational Administration
- Supervisor of the research, design, and writing of a thesis at the Ph.D. level provided in an individual instruction format, Prerequisite: consent of advisor.

Early Childhood and Elementary Education

Chair: Jerry N. Kahn

The division's programs are designed to prepare graduates for employment in specific parochial roles in public schools and institutions of higher learning. All of its programs have been approved by the Iowa Department of Public Instruction and meet National Council for Accreditation of Teacher Education approval standards.

Undergraduate Programs in Early Childhood Education

Students pursuing a major in early childhood education may elect to major in either the B.A. or the B.B. degree. The B.A. degree requires four years of study or the equivalent in foreign language. The B.B. degree requires two seminars of study or the equivalent in foreign language. In all other respects the B.A. and B.B. degree requirements are identical.

Preparation for early childhood teaching involves study of child development, parent-child relationships, and organization and administration of child care centers, in addition to curriculum and methodology appropriate for young children. The program involves wide reading, creative planning, and application of knowledge in working with groups of young children in public or private early childhood centers or classrooms. The early childhood education program is designed specifically to prepare students to teach children in preschool groups, in classes for three- four- and five-year-old children, and in kindergartens, and meets the requirements of the Iowa Endorsement 53 for kindergarten teachers. Students interested in dual certification at the prekindergarten/kindergarten level and the kindergarten/elementary level should elect the elementary education major as described in a subsequent section and in early childhood education area of specialization. A student successfully completing this combination is eligible for Iowa teaching certificate endorsements 10 (K-3) and 53.

Students majoring in early childhood education must complete the science/mathematics foundation designated for them as a prerequisite to enrolling in 7E:182 Methods: Elementary School Sciences and 7E:183 Methods: Elementary School Mathematics. This prerequisite may be satisfied in one of three ways:

1. Satisfactory completion of 7S:55-58 Science Foundations I-IV and 22M:60 Theory of Arithmetic or
2. Satisfactory completion of equivalent courses taken at a college or university approved college or university or
3. Completion of eight semester hours of the following courses which satisfy the College of Liberal Arts natural science core requirement, and the passing of special tests administered by the University's Examinations and Testing Service during the content of 7S:55-58 and 22M:60.

Students not passing the science examination must register for 7S:14 Science Foundations I, Students not passing the mathematics examination must register for 22M:30 Theory of Arithmetic.

Undergraduate students should complete these required foundation courses in their sophomore year.
Students seeking Iowa Department of Public Instruction approval to teach preschool handicapped children should refer to the "Special Education" section of the Catalog.

Copies of the requirements for each area of specialization are available in the College of Education office and at the Early Childhood and Elementary Education Division office. Courses in the area of specialization may be taken pass-fail if they are offered in the pass-fail option.

Student Teaching
Students should submit student teaching applications to the College of Education by March 1 of the preceding academic year during which they plan to do their student teaching. Students register for student teaching under 7E:158 Supervised Teaching in an Early Childhood Center. The student teaching period is one full semester for 16 semester hours of credit. This is considered a full load, and a student must have special approval from the division chair to register for any additional coursework.

Undergraduate Programs in Elementary Education

Students pursuing a major in elementary education may elect to meet requirements for either the B.A. or the B.S. degree. The B.A. degree requires four semesters of a B.A. major equivalent in one foreign language. The B.S. degree requires four semesters of study or the equivalent in one foreign language. In all other respects the B.A. and B.S. degree requirements are identical.

Elementary teachers serve in a variety of school organizational patterns, including self-contained rooms wherein the teacher assumes responsibility for most of the curricular areas, departmental positions wherein their responsibilities are concentrated in one or two subject areas, and team-teaching assignments wherein two or more teachers assume shared responsibility for the total instructional endeavor. Preparation for elementary teaching involves the acquisition of a broad general education background. In-depth study of at least one elementary curriculum subject area. And professional study of the learning process, of the interaction and structure of curricular materials suitable for school age children, and of the methodologies and procedures most appropriate for presenting these materials. Study in the program is rigorous. It involves wide reading, creative planning, and application of knowledge in the classroom.

The program is designed specifically to prepare students to teach kindergarten through sixth grade. Special sequences are also available for students seeking the prekindergarten/kindergarten endorsement and for those seeking approval to teach in middle schools or junior high schools. Students interested in certification for elementary teaching and approval for special education should note the requirements for admission to each of these programs. Students interested in this combination must make a separate application to each program and these applications will be considered independently.

The science-mathematics core requirement is the same for this program as for the early childhood education program.

Undergraduates should complete these fundamentals requirements in the sophomore year:

7E:91 Pre-Education Practicum 2 s.h. or equivalent experience (7E:91 must be taken concurrently with 7E:167)
7E:100 Introduction: Elementary and Early Childhood Teaching 3 s.h.
7P:75 Educational Psychology and Measurement 3 s.h.
7W:91 Audiovisual Equipment for Instruction 1 s.h.

Graduate students may elect equivalent graduate-level courses with the approval of their advisors.

The student must complete this elementary methods sequence to be eligible for student teaching:

7E:160 Methods: Elementary School Language Arts 3 s.h.
7E:161 Methods: Elementary School Social Studies 3 s.h.
Early Childhood and Elementary Education/EDUCATION

7E:182 Methods: Elementary School Science 2 a.h.
7E:183 Methods: Elementary School Mathematics 2 a.h.
7E:194 Methods: Elementary School Reading 3 a.h.

Areas of Specialization

An area of specialization is required in a teaching field. The areas of specialization offered are elementary art, the arts in early childhood and elementary education, bilingual education, early childhood, health education, elementary language arts, elementary mathematics, multicultural education, elementary music, elementary reading, elementary physical education, elementary sciences, elementary social science, special education, and elementary generalist.

The student should consult with his or her adviser concerning courses which will serve to strengthen preparation for teaching in a subject area and meet the specific requirements for that area. Copies of the requirements for each area of specialization are available in the College of Education office and at the Early Childhood and Elementary Education Division office. Courses in the area of specialization may be taken pass/fail if they are offered with the pass/fail option.

Student Teaching

Regardless of the area of specialization selected, students must complete a minimum of 15 semester hours of credit in student teaching. Students should apply to the College of Education by March 15 preceding the academic year during which they plan to do their student teaching. No more than two assignments will be made in any one semester.

Most students in this program will register in 7E:191 Supervised Teaching in the Elementary School: Interactive Phase for 8 semester hours and 7E:193 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase for 7 semester hours. This is considered a full load, and a student must have approval from the Division chair to register for any additional coursework.

In certain areas of specialization, other registration patterns are required. The most common of these are:

7E:191 Supervised Teaching in the Elementary School: Interactive Phase 4 a.h.
7E:193 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase 4 a.h.
7E:195 Supervised Teaching in an Early Childhood Center 7 a.h.
7E:191 Supervised Teaching in the Elementary School: Interactive Phase 7 a.h.
7E:193 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase 6 a.h.
7E:192 Laboratory Practice in Elementary School 2 a.h.
7E:191 Supervised Teaching in the Elementary School: Interactive Phase 4 a.h.
7E:193 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase 4 a.h.
7E:191 Supervised Teaching with Physically Handicapped 7 a.h.
7E:191 Supervised Teaching in the Elementary School: Interactive Phase 4 a.h.
7E:193 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase 4 a.h.
7E:192 Supervised Teaching with Mentally Retarded 7 a.h.

Students should consult with their advisers concerning the appropriate registration pattern.

Master of Arts in Elementary Education

This degree program, which may be taken with thesis (30 semester hours minimum) or without (32 semester hours minimum), is designed to prepare master's degree candidates in elementary education to serve as team leaders, grade level or subject area supervisors, or curriculum consultants. Successful completion of this degree, together with four years of successful teaching experience, qualifies the student for certification as an elementary school supervisor, Iowa Endorsement 12.

Admission requirements are the same as those established by the Graduate College and, in addition, the applicant must have completed an undergraduate program of teacher preparation in either early childhood or elementary education. Only one course, 7E:200 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools, is specifically required of all candidates, but each candidate must elect at least one course in each of these categories: social foundations, educational psychology and measurement, and supervision. In addition, each candidate must complete an area of specialization and selected coursework in advanced methodology.

Graduate students who have not completed an undergraduate program in elementary education may be admitted as "certification only" candidates.

Master of Science in Elementary Science

This degree program is designed to prepare master's degree candidates in elementary science to serve as team or departmental science specialists. The program may be taken with thesis (30 semester hours minimum) or without (32 semester hours minimum).

Admission requirements are the same as those established by the Graduate College and, in addition, the applicant must have completed an undergraduate program of teacher preparation in elementary education.

Four courses are required of all candidates:

7E:402 Advanced Techniques of Teaching Science in the Elementary School 3 a.h.
7E:202 The Science Curriculum in the Elementary School 2-3 a.h.
7E:390 Seminar: Science Education 1 a.h.
7E:392 Current Readings in Science Education 2 a.h.

In addition, all candidates must complete a total of 16 to 20 semester hours of coursework in two sciences areas, including a minimum of 10 semester hours in the major science area. Candidates' advisers must approve courses they elect in the two areas and all electives.
Master of Arts in Developmental Reading

This degree program is designed to prepare graduate students for positions as reading specialists in kindergarten and grades K-12. Successful completion of this program, together with four years of successful teaching experience, qualifies the student for certification as a reading specialist, Iowa Endorsement 54. The program is offered with thesis (30 semester hours minimum) and without thesis (32 semester hours minimum). The following are required of all candidates:

7E:171 Reading Clinic: Teaching Techniques 2-3 s.h.
7E:172 Reading Clinic: Teaching Practicum 2-3 s.h.
7E:254 Building Foundations for Reading: Pre-Primary and Primary 2-3 s.h.
7E:265 Supervision of Intermediate Grade Reading 3 s.h.
7E:304 Methods: High School Reading 2-3 s.h.
7E:364 Seminar: Elementary Reading 2-3 s.h.
7E:264 Seminar: Secondary Reading 3 s.h.

In addition, candidates must complete one or more courses each in the curriculum, supervision, and social foundations areas. The student selects the remaining elective hours with the advisor's approval.

Doctor of Philosophy in Elementary Education

The purpose of this program is to prepare candidates for college and university teaching and research positions in elementary education and for research, curriculum, supervision, or administrative positions in public school systems and government educational agencies.

The program requires a minimum of 80 semester hours, including hours earned for the dissertation. Each student prepares an individual plan of study in consultation with an advisor. The final plan must be approved by the advisor and the division chair.

As a general guideline, each student is expected to have a broad background in all faculties of elementary school education and a very strong area of specialization in at least one faculty. Commonly selected specialization areas are elementary school administration, children's literature, early childhood, curriculum, language arts, mathematics, reading, and social studies.

Each doctoral student must also 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 parental school administration; or it may be a subject field, such as English.

In addition, all students must demonstrate competency 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 assistantships involve teaching in a good early childhood Education Center; some involve the supervision of undergraduate majors enrolled in 7E:91 Pre-Education Practicum; and some involve the teaching of sections of undergraduate methods courses and the supervision of student teachers. Most assistantships are classified as graduate assistantships. This classification permits students to register for a maximum of 12 semester hours credit per semester. Holders of assistantships must register for a minimum of 9 semester hours per semester.

All assistantships are awarded on a competitive basis. To be considered for an assistantship, an applicant must have been admitted as a graduate student and must have been accepted in an advanced program by the College of Education. Inquiries concerning assistantships should be directed to the division chair.

Courses

7E:171 Growth and Motor Development 2 s.h.

The course deals with aspects of motor development from prenatal to late childhood. Special emphasis is given to age and sex similarities. For physical education majors only.

7E:172 Methods and Materials: Elementary School Physical Education 3 s.h.

Practical considerations and curriculum planning for prospective teachers of elementary school physical education. For physical education majors only. Offered spring semesters, Prerequisite: 7E:171, 7E:371, or consent of instructor. Same as 7E:272.

7E:192 Special Education Practicum 1 s.h.

Directed study hours per week working with children and teachers in elementary school and/or early childhood centers. Corequisites: 7E:171, 7E:151, or 7E:272.

7E:200 Introduction: Elementary and Early Childhood Teaching 3 s.h.

Overview of elementary and early childhood education including general expectations, content and methods, administrative responsibilities, and general classroom management. In addition, social studies and basic terminology.

7E:311 Introduction to English 3 s.h.

Basic examination of elementary education considered in relation to the social, educational, and institutional functions, strategies, and communication processes. Prerequisite: 7E:200.

7E:315 Nutrition with Children 3 s.h.

Child nutrition—approaches and techniques commonly used in nutrition education of children. Prerequisite: 17:11 or consent of instructor. Same as 17:139.

7E:346 Remedial Methods in Speech and Hearing 3 s.h.

Emphasis on elementary school; emphasis in consultation with 7E:151, which provides an introduction to educational and clinical practice in elementary education. Prerequisite: 17:141 or consent of instructor. Same as 17:139.

7E:368 Psychology of Elementary Education 3 s.h.

Practicum in classroom process, socialization in and ecological factors affecting the educational process. Emphasis on social and interpersonal relationships. Prerequisite: 7E:364 or consent of instructor. Same as 7E:378.

7E:372 Introduction to Elementary Science Study Program in Elementary School 3 s.h.

Development of science learning experiences, content, and teaching methods and organization of science units. Emphasis on teaching and learning science units. Teachers may select science units to construct a course of study for their local students.

7E:373 Introduction to Environmental Studies for K-12 3 s.h.

Introduction to materials and activities available for introduction in environmental studies to the K-12 curriculum as a course sequence and as means of supplementing existing curricula. Corequisites: 7E:191, 7E:111.

7E:377 Implementation of Environmental Studies for K-12 3 s.h.

Preparation of seasonal activities in the area of environmental studies, construction of laboratory, demonstration, and implementation or activities. Same as 7E:117.

7E:378 Evaluation of Environmental Studies for K-12 2 s.h.

Evaluation of activities in the area of environmental education, construction of laboratory, demonstration, and implementation or activities. Same as 7E:117.

7E:395 Continuation of 7E:105 3 s.h.

7E:396 Continuation of 7E:106 3 s.h.

7E:397 Introduction to the Science: A Process Approach 2 s.h.

Familiarization with the concepts, rationale and methodologies of Science, A Process Approach (SAPA), an elementary science program initially developed by the U. S. Office of Education.

7E:398 Introduction to the Science Curriculum Improvement Study Program in Elementary School 3 s.h.

Focus on an activities program which supports science curriculum development grade K-12. Emphasis on organizational, content, and resource needs of science program.
70-158 Website Multicultural and English Education 2 s.h.
Method of instruction for multicultural and bilingual settings to include R.E.A. attributes or experience and area-specific areas of the teaching process, including curriculum and research development and task and related influences.
70-157 Website Early Childhood Education II 2 s.h.
An examination with current educational theories in all curricular areas; special emphasis on application of educational theory and in administration principles for kindergarten and home and second grade.
70-153 Website Classroom Management 1 s.h.
Workshop activities: activities, principles, strategies, and theories related to teaching and classroom management. May be repeated.
70-171 Website Reading Clinic: Teaching Techniques 4 s.h.
70-173 Website: Clinics: Reading Pedagogy 6 s.h.
70-173 Website: Teaching Elementary School Mathematics 4 s.h.
Study of the elementary school maturation curriculum, with special emphasis on: 4 photographs of the student's ability, objectives of unit, errors, test methods, criterion referenced, and evaluation of instructional results. Required: 70-105, 71-122.
70-174 Website: Teaching Secondary School Mathematics 4 s.h.
Mathematics of various fields and modern geometry concepts is developed. Prerequisite: 70-105: Elective: 70-106.
70-179 Website: Elementary Language Arts 3 s.h.
Workshops for elementary teacher and language arts curriculum and activities for kindergarten through fifth grade. Emphasis on: creative writing, language development, oral story-telling, modal reading program to develop reading and language comprehension. Required: 70-105, 71-122.
70-179 Website: Reading Workshop 3 s.h.
For elementary school teachers, reading teachers, reading specialists, and principals who wish to improve their expertise in reading instruction. Topics for study include individualization of instruction, reading motivation, comprehension, reading concepts, selected comprehension, and teacher competencies.
70-179 Website: Early Childhood Education 3 s.h.
Emphasis on understanding and teaching developmentally appropriate curriculum. Emphasis on instructional methodology and strategies and current instructional background. Application to these materials and development of instructional sequences. Required: 70-104, 71-105, 72-105.
70-179 Website: Elementary School Mathematics 5 s.h.
Workshops are short-term, semester-based courses dealing with specific topics of current interest to elementary schools. Emphasis is on practical application of modern methodologies of teaching and learning. Required: 70-105, 71-105, 72-105.
70-179 Website: Children's Response to Literature 3 s.h.
Part of an ongoing and suggested reading program for kindergarten-grade 6. Special attention to helping children develop a wide range of responding to literary qualities, for example, specific comprehension, writing skills, creative drama, movement, and art.
70-179 Website: Exploring Diverse Cultures and Literature 3 s.h.
Explores values of diverse cultures, facilitates students' understanding of cultural literacy, expands ability to grasp diverse literatures, and provides guided experience in local techniques. For students in education, speech and dramatic arts.
70-151 Website: Reading in the Classroom 3 s.h.
Principles for the elementary teacher. Emphasis on the development of logical thought in the work and the processes of logical thought. May be repeated.
70-155 Website: Science for Elementary Students 3 s.h.
70-155 Website: Supervision of Science in the Elementary School 3 s.h.
Pedagogy, selection, and grade placement of course, classroom procedures, and evaluation of specific teaching aids such as charts, demonstration equipment, visual aids, text trips.
70-154 Website: Reading: Reading 3 s.h.
For teachers interested in reading and teaching. Implementing some of the ideas of John Dewey in their classrooms. Special classroom procedures along with externships of approximately seven topics for various grade levels.
70-155 Website: Supervision of Science in the Elementary School 3 s.h.
Curriculum content for elementary school art emphasis on art projects, new methods and materials. Includes studio practice, field trips, demonstrations, observations, seminars. Same as 70-105.
70-155 Website: Supervision of Science in the Secondary School 3 s.h.
70-155 Website: Classroom Observation Techniques 3 s.h.
Applications and Analysis 3 s.h.
Application of systematic observation techniques to interpretive communications. Characteristics and structures of classroom teaching and school counseling. cookie on ways to assess various dimensions of the classroom setting in relation to classroom and parental interests to analyze information obtained in such settings.
70-155 Website: Basic Workshop in Project 5 s.h.
Special emphasis on the development of the teacher's ability to plan, design, and direct a project. Required: 70-105, 71-105, 72-105.
70-155 Website: Supervised Teaching in the Elementary School (Discussion/Research) 3 s.h.
Field teaching at the elementary level. Required: 70-105, 71-105, 72-105.
70-155 Website: Supervised Teaching in the Elementary School (Directed Pedagogical Phase) 3 s.h.
Prerequisite: application must be made to the Office of Student Personnel, College of Education. Required: 70-105.
70-155 Website: Supervised Teaching in the Elementary School (Directed Pedagogical Phase) 3 s.h.
Prerequisite: 70-105, 71-105, 72-105.
70-155 Website: Pedagogical Education and Educational Evaluation 3 s.h.
Practical examination of educational practices within various communities, both international and local: educational perceptions of the experience and instructional practices and the institutional curricula and educational institutions which serve them.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
70-155 Website: English Lab Practicum Elementary Schools 3 s.h.
Practical experience in direct planning and teaching of English in an elementary school. Required: 70-105, 71-105, 72-105.
Minor
The purpose of the minor is to provide an enriched background in educational psychology, educational testing, and research methods in education. A division adviser selected by the student will aid in choosing courses totaling 18 or more semester hours, of which 12 semester hours must be in 100-level courses. This minor does not lead to certification as a public school teacher.

Master of Arts in Educational Psychology
This program provides an overview of educational psychology as an area of scholarly inquiry. It includes coursework in human development, principles of learning and teaching, educational measurement, and research methods. The program does not prepare the student for entry into a specific vocation. Rather, it contributes to a broad understanding of the psychological principles on which education builds.

Students may take this degree with or without thesis. The degree without thesis requires a minimum of 32 semester hours of coursework. The degree with thesis requires a minimum of 36 semester hours of coursework plus 2 to 4 semester hours of thesis credit. Both programs require PSY 443 Introduction to Statistical Methods or the equivalent.

Students plan the remainder of the program in consultation with their advisers, choosing courses from the following four areas: teaching and learning, developmental processes, measurement and research, and social foundations of education. Students must take at least one course in each of these areas and a concentration in three courses in at least two areas. The faculty encourages degree candidates to enroll in at least two courses outside the division. Courses in elementary or secondary curriculum supervision, special education, counseling, and psychology are commonly used to meet this requirement.

The program culminates in six hours of comprehensive examinations over the student’s areas of concentration. The adviser develops the plan for these examinations in consultation with the student and the other members of the student’s committee.

The admission 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.

Master of Arts in Educational Measurement and Statistics
A master’s 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 educational agencies. The program is also appropriate for students who seek to broaden their knowledge of measurement and research methodology for personal development.

The degree may be taken without thesis (32 semester hours minimum) or with thesis (minimum of 36 semester hours of coursework plus 2 to 4 semester hours of thesis credit). All students must complete a core of courses totaling 18 to 20 semester hours. Included in this core are a graduate-level survey course in educational psychology, elementary and intermediate courses in classical statistical methods, an introduction to general statistical methods, a course in educational research methodology, and courses in the development and use of evaluation instruments.

The elective credits, totaling 10 to 12 semester hours, must include at least one course in elementary, secondary, or post-secondary education. The remaining electives may be chosen from the fields of psychology and educational psychology, statistical methods, educational measurement, computer programming, and data processing, mathematics, mathematical statistics, and counseling.

The final comprehensive examinations typically include three-hour examinations in educational measurement and in applied statistics (classical or Bayesian). With the approval of the M.A. committee, the student may take two-hour examinations in these fields plus a two-hour examination in educational psychology or a substitute area. Three-hour examinations require a minimum of three courses in the area; two-hour examinations assume a minimum of two courses in this area.

Grades-point average requirements for admission to the program are the same as those established by the Graduate College. Normally, if the candidate’s score for either the quantitative or verbal portion of the Graduate Record Examination (GRE) is less than 500, the applicant will not be accepted. However, if there is outstanding evidence of superior ability, the faculty may approve acceptance on a conditional basis. 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.

Master of Arts in Reading Disability
This program provides training in the diagnosis of reading disabilities and the prescriptive teaching of reading. Graduates of the program can qualify for certification as reading consultants. They typically return to classroom teaching or take positions as reading clinicians, supplementary reading teachers, or reading consultants. Graduates of the thesis program typically expect to enter doctoral programs in the field of reading.

The nonthesis program requires a minimum of 32 semester hours including the following core courses:

- PSY 170 Introduction to Psychology of Reading 3 s.h.
- PSY 173 Survey of Diagnostic/Prescriptive Approaches to Reading Instruction in Grades K-12 4 s.h.
Doctor of Philosophy in Educational Psychology

This doctoral program prepares graduates for a variety of careers that share a concern for the application of psychological principles to educational practices. Such careers include professorships at the university and college level, and research or administrative positions in educational agencies, clinics, hospitals, testing organizations, and the 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.

The program includes emphases in three substantive areas—teaching and learning, motivation and cognitive processes, and human development. In addition, students take considerable coursework in measurement, statistical analysis, and research methodology.

All students must meet the following minimum course requirements (or approved equivalents) in the first 24 semester hours following admission to the program:

- **7P:143 Introduction to Statistical Methods**
- **7P:243 Intermediate Statistical Methods**
- **7P:270 Advanced Psychology of Reading**
- **7P:273 Reading Clinic: Diagnostic Practicum**
- **7P:302 Advanced Theories of Learning**
- **7P:303 A.M. Thesis in Educational Psychology, Measurement or Statistics**

Elective courses are chosen from the same fields enumerated for the nonthesis program.

For both the thesis and nonthesis programs, the comprehensive examinations typically include a three-hour examination in reading disability and two 90-minute examinations in related fields. With the advisor's approval, the nonthesis student may substitute a comprehensive project for one or more of the written examinations.

The grade-point-average requirement for admission to the program is the same as that established by the Graduate College. When the applicant's total score on the verbal and quantitative parts of the Graduate Record Examination (GRE) Aptitude Test is below 1000, and no entering evidence of superior ability is available, the applicant will be rejected or admitted only on a conditional basis. Applicants must have two years of approved teaching experience. The faculty reviews applications when they are received.

Before writing the Ph.D. comprehensive examinations, the candidate must meet two additional requirements. The first of these is one 200-level course in educational or psychological measurement or 7P:246 Design of Experiments or one course in philosophy of science. The second applies to candidates who took the M.A. degree without thesis. Such candidates must undertake a project in lieu of the thesis. This project must be approved by three members of the educational psychology faculty.

The balance of the candidate's program is planned jointly by the student and the advisor. Every candidate must register for a minimum of 10 semester hours credit in Ph.D. thesis.

The record of every student admitted to the program is reviewed near the end of the second semester of residence. The division faculty considers course grades, evidence of critical and analytical skills, development during the previous year, and promise 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 their coursework, they must write comprehensive examinations. Typically, these examinations consist of a total of nine hours of written examinations in two or more areas. One of these areas must be chosen from the following: general educational...
Doctor of Philosophy in Educational Measurement and/or Statistics

The purpose of this program is to prepare 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.

Every student must complete the following core courses or their equivalents:

- TP:131 Educational Psychology 3 s.h.
- TP:243 Intermediate Statistical Methods 4 s.h.
- TP:148 Bayesian Statistics 3 s.h.
- TP:285 Construction and Use of Evaluation Instruments 3 s.h.
- TP:267 Educational Measurement and Evaluation 3 s.h.
- TP:244 Correlation Methods 3 s.h.
- TP:245 Design of Experiments 3 s.h.
- TP:260 Educational Research Methodology 3 s.h.

The student's advisor will suggest additional coursework in areas appropriate to the student's interests and vocational objectives. These courses typically include additional work in educational measurement, applied statistical methods, scaling of measures, and educational psychology.

Students who concentrate in the area of statistics, with the intent of teaching on the college level, will be 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 will develop familiarity with computer programming techniques and processing equipment.

Qualifies to enter the program without completing an M.A. thesis must complete a substitute project approved by three members of the division faculty. The project must be completed before the writing of the Ph.D. comprehensive examinations. A minimum of 90 semester hours is required for the degree, including 12 to 16 semester hours of thesis credit.

The record of every student admitted to the program is reviewed near the end of the second semester of residence. The division faculty will consider course grades, evidence of critical and analytical skills, development during the previous year, and promises for continued growth. Students who show insufficient potential or deficiencies that cannot be remedied will be dropped from the program.

Following completion of the major portion of their course work, candidates must write comprehensive examinations. Typically, these consist of three three-hour written examinations over the fields of applied statistics, educational measurement, and educational psychology or an approved substantive area. A substitute area will generally be one in which the candidate has at least 9 semester hours of coursework. In lieu of one written examination, the student's committee may assign a project involving analytical, evaluative skills, or research creativity. The written examinations are followed by an oral examination in which the committee members may seek further evidence of the candidate's command of the three fields. A single decision is rendered on all aspects of the comprehensive examinations.

Applicants for admission to the program must hold an M.A. degree from an accredited institution. The grade-point-average requirement is the same as that required by the Graduate College. If an applicant's scores on the verbal and quantitative sections of the Graduate Record Examination (GRE) Aptitude Test total less than 1000, and there is no offsetting evidence of superior ability, the applicant will be rejected. The student who expects to concentrate in the area of statistics should have training in college mathematics through differential and integral calculus. The absence of such training is a deficiency which must be made up during the first year of residence. At least one year of professional experience in teaching, research, or a related field is highly desirable. The faculty reviews all applications as they are received.

Doctor of Philosophy in Educational Psychology with Concentration in Reading Disability

This program prepares graduates for careers as college teachers, as directors of reading programs, and as supervisors of remedial reading programs in larger school systems.

The courses required are essentially the same as those for the doctoral program in educational psychology. The elective courses, however, will include those pertinent to the area of reading and related courses offered by the divisions of Special Education, Early Childhood and Elementary Education, and Secondary Education, and the departments of Speech Pathology and Audiology, Linguistics, and Psychology. One of the comprehensive examinations must be in the area of reading disability.

The admission requirements are the same as those for the Ph.D. program in educational psychology.
Instructional Design and Technology

Chair: Lowell A. Schorh

Program Director: Lowell A. Schorh, Lawrence M. Stoline

Graduate Program

Graduate Programs

The division does not offer an undergraduate degree. There are, however, a number of courses open to undergraduate students on an elective basis.

Master of Arts

The general goal of the M.A. program is to provide a basic background in instructional design and technology for classroom teachers or for those who plan careers as instructional designers and technologists in education, business, or industry. The degree may be taken with or without thesis. It requires a minimum of 30 semester hours.

A minimum grade-point average of 2.85 in all previous coursework and a Graduate Record Examination (GRE) Aptitude Test score of at least 1000 are required for regular admission. Students
with GRL scores of less than 1000 and/or grade-point averages below 2.5 may be admitted conditionally. Teaching or relevant work experience may be helpful.

Educational Specialist
The general purpose of the Ed.S. program is to provide specialized training in instructional design and technology beyond that attained in the M.A. program. The program requires a minimum total of 90 semester hours. Admission requirements are the same as for the M.A., except that a minimum grade-point average of 3.0 on all previous graduate work is required for regular admission.

Doctor of Philosophy
The general purpose of the Ph.D. program is to provide a broad background for students interested in teaching, research, and leadership positions in instructional design and technology. There is relatively heavy emphasis in this program on helping the student acquire the research-based knowledge and skills necessary to expand his or her understanding of learning and instruction and of the fact that which influence them. The program requires a minimum total of 90 semester hours.

Admission requirements are the same as for the M.A., except that a minimum grade-point average of 3.2 on all previous graduate work is required for regular admission.

Courses
711/1107 Psychological Bases of Instructional Design 3 hrs. Basic research on motivation, motivation process, and educational psychology, with particular emphasis on teaching and learning. Prerequisite: Psych 101.
711/1108 Communication Theory and Methods 3 hrs. Basic theory and practice for planning, evaluating, and using simple and formal interaction in small or large group presentations. For educators, journalists, administrators, or others professionally involved in instructional design and development. Topics include social psychology, language, communication, marketing, advertising, displays, and related communications.
711/1109 Communications Media Design 3 hrs. Students are made aware of mass, current, and social movements; reception; and design of messages, implement strategies for media selection, and communication techniques. Includes practice in creative selection and message conservation. Same as MS 336.08.
711/1115 Workshop in Instructional Design and Technology 3 hrs. Workshops are individually arranged, based on student demand and instructor availability. Prerequisite: Ph.D. candidacy.
711/1120 Introduction to Instructional Design and Technology 3 hrs. Important roles, responsibilities, programs, and goals. Prerequisites: 711/115 or consent of instructor.
711/1123 Developing and Implementing Instructional Strategies 3 hrs. Emphasis on needs-based methods; course is switched: section 1 for students interested in general education, section 2 for students interested in health sciences, section 3 for students interested in educational technology, section 4 for those concerned primarily with government, business, and industrial training. Same as MS 340.
711/1125 Choosing Instructional Strategies 3 hrs. Emphasis on methods providing the objectives of the course, the materials of the course, the teaching situation where the course is to be used, and the learning characteristics of the students. Prerequisite: 711/1123.
711/1127 Photographic Instruction 3 hrs. Principles and procedures in instructional and professional materials using still and motion pictures. Prerequisites: 711/1125 or consent of instructor.
711/1128 Plugins into the Classroom 3 hrs. Various sources of classroom activities that incorporate computer software into the classroom. Emphasizes individual and group activities. Prerequisite: 711/1125.
711/1129 Introduction to Computer Programming 3 hrs. Theory and practice of programming; learning characteristics of computing systems and applications. Prerequisite: 711/1130.
711/1130 Computer Programming 3 hrs. Theory and practice of programming; learning characteristics of computer applications. Prerequisite: 711/1129.
711/1133 Survey of Instructional Design and Technology 3 hrs. Survey of computer-assisted instruction and media design, with emphasis on selected instructional techniques. Prerequisites: 711/1123 and 711/1125.
711/1150 Design and Production of Media for Instruction 3 hrs. Techniques related to the design and production of multimedia instructional materials for use in instructional applications. Prerequisite: consent of instructor. Prerequisites: 711/1123 and 711/1125.
711/1151 Workshop in Instructional Design and Technology 3 hrs. Workshop arrangements are individually arranged, based on student demand and instructor availability. Prerequisite: Ph.D. candidacy.
711/1152 Advanced Study in Instructional Design and Technology 3 hrs. Advanced study of the instructional design principles with theory emphasized on current issues. Prerequisites: 711/115 and 711/1125.
711/1153 Advanced Topics in Computer Assisted Instruction 3 hrs. Present and future impact of computer technology on instruction. Prerequisites: 711/115 and consent of instructor.
711/1157 Professional Readings 3 hrs. Professional readings and current approaches to instructional media research. Prerequisites: 711/1123 and 711/1125.
711/1160 Communication of Educational Media 3 hrs. Principles of organizational and personnel management as they apply to developing media programs. Prerequisites: 711/115 and 711/1125, or equivalent.
711/1161 Leadership and Management Health Services Education 3 hrs. Survey of current issues, problems, and approaches. Prerequisite: 711/115.
711/1178 Research Methods in Instructional Design and Technology 3 hrs. Research methodologies, experimental design, and statistical analysis. Prerequisites: 711/1145 or equivalent, 711/1133, 711/1123, and consent of instructor.
711/1179 Evaluating Learning in Health Sciences 3 hrs. Emphasis on the role of the health care professional as teacher and learner. Explains learning theory and how it might be applied to the evaluation of health care related learning experiences. Prerequisites: 711/1123 and 711/1160.
711/1180 Computers in Health Sciences Instruction 3 hrs. Introduction to instructional and educational psychology, instructional design and technology, and communication technology for the health sciences. Prerequisites: 711/1123 and 711/1125.
711/1182 Preparation of Technical Manu 3 hrs. Preparation of technical manuscripts, with an emphasis on adherence to national and international standards for publication. Prerequisite: 711/1133 or equivalent.
711/1193 Advanced Study in Instructional Design and Technology 3 hrs. Advanced study of instructional design principles with theory emphasized on current issues. Prerequisite: 711/115 and 711/1125.
711/1195 Special Topics in Instructional Design and Technology 3 hrs. Exploration of major areas of special interest to the student. Prerequisite: consent of instructor.
Postsecondary and Continuing Education

Bachelor of Science in Health Occupations

The health occupations education major has been designed to prepare teachers for employment at the community college level in preparatory health occupations education programs. In addition to basic skill and core requirements in the College of Liberal Arts, students will complete courses in professional education and additional coursework in the health occupations education specialty field(s) and/or supporting areas.

Students making application to this program must currently hold 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, respiratory therapy, and the like. The health occupations education major is planned upon this base, and provides work in professional education and the liberal studies appropriate to teachers who wish to acquire a baccalaureate degree.

Applicants to this program must satisfy criteria for admission to the Teacher Education Program (T.E.P.) of the College of Education.

Program requirements:

Coursework in Professional Education

7P:131 Educational Psychology 3-4 s.h.
7P:150 Educational Measurement for the Classroom Teacher 2-3 s.h.
Appropriate coursework in social foundations

Curriculum and Teaching Procedures

One course from each group:

7W:120 Introduction to Instructional Design and Technology 3 s.h.
7W:121 Designing and Developing Instructional Materials 3 s.h.
7W:122 Choosing Instructional Strategies 3 s.h.

7H:112 Teaching of Adults 3 s.h.

7H:271 The Community College 2-3 s.h.
7H:197 Philosophy of Vocational Education 2 s.h.

Additional Requirements

7H:191 Community College Teaching Internship 8 or 12 s.h.
7H:190 Seminar Health Occupations Education 3 s.h.

Additional specialty coursework in health occupations education

Students may avail themselves of special workshops or courses offered by specific health colleges when appropriate prerequisites have been met.

Coursework may also be taken in specific basic sciences supporting health occupations education.

In addition to coursework in the health specialty and basic sciences, students may also choose electives from the College of Education or other supporting units.

Coursework in the health occupations education specialty and supportive fields should be carefully planned in consultation with the advisor.

Graduate Programs

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 colleges, and is appropriate for positions such as assistant dean, business manager, development officer, assistant to the president, director, in-servie director, and division or program chair.

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) Aptitude 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.
Specialist in Education

The Ed.S. program in postsecondary education provides preparation for undergraduate-level teaching in two- and four-year colleges, and for administrative/academic who are not planning to continue for a doctorate.

The Ed.S. degree may be awarded upon completion of a joint program totaling at least 90 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. In either case, the candidate must fulfill these degree requirements:

- Completion of 18 semester hours, including a structured internship, in professional education and related fields appropriate for college teaching or administration;
- Completion of a minimum of 28 semester hours in the candidate's area of specialization (teaching field or administration);
- Completion of 10 semester hours of electives approved by the candidate's adviser;
- Completion of a 4-semester-hour research project in 1H.365 Educational Specialist Research in Higher Education; and
- Comprehensive examinations.

Course requirements for the college teaching track are as follows:

7H.271 The Community College 2-3 S.H.
7H.230 Intern Seminar 2-3 S.H.
7H.330 College Teaching Internship 2-3 S.H.
7H.175 Post-High School Staff Development Workshop 1 S.H.
7W.501 Audiovisual Equipment for Instruction 1 S.H.
7F.131 Educational Psychology 3 S.H.
7X.170 Human Relations for the Classroom Teacher 1-3 S.H.

An approved American history or government course 2 S.H.

Course requirements for the administration track are determined by the student in consultation with his or her advisor.

The comprehensive examinations include a three-hour written examination on the candidate's area of concentration (college teaching or administration); a three-hour written examination covering the candidate's area of specialization within the area of concentration; and an oral examination covering both the area of concentration and the area of specialization.

Students majoring in higher education with a college teaching concentration may write a second examination in their teaching field, in lieu of the examination on the area of specialization.

Students majoring in another field and desiring to complete a teaching field in higher education should consult with an adviser in higher education early in their studies. In consultation with the student, the adviser will develop a plan of study individually for the student.

Teaching Internship

Program participants teach part-time for a full semester at cooperating community colleges under the supervision of an experienced faculty member in that community college, with field supervision from The University of Iowa. Interns participate as fully as possible in the academic life of the host community college, and usually gather data for their Ed.S. research project during the internship.

Participants must be willing to travel to a community college and reside there for the one-semester program. Some interns are accommodated at nearby community colleges, but preference will be given to those willing to travel for that experience.

Admission

Applicants for admission to the Ed.S. program in higher education must satisfy the general requirements for admission to the Graduate College. Candidates are selected on the basis of grade-point average, Graduate Record Examination (GRE) Aptitude Test score, and promise for professional growth, transcripts, GRE scores, and three letters of recommendation are required for regular admission. An interview is recommended.

Doctor of Philosophy

The Ph.D. program continues to attract persons who are likely to serve as top-level administrators, specialists, researchers, or teachers in postsecondary institutions or related public or private agencies.

The program offers four areas of concentration: general administration, curriculum and instruction, academic administration, community college, and continuing education (adult education). The program requires a minimum of 90 semester hours beyond the baccalaureate.

The candidate chooses one area of concentration and must earn 18 to 24 semester hours of credit in that area. Ordinarily the candidate chooses a minor (12 to 30 semester hours) that complements the area of concentration. The dissertation research (10 to 15 semester hours) is expected to deal with a specific problem in the area of concentration. These three components—concentration, minor, and dissertation research—comprise a major part of the typical doctoral program, and give the student the opportunity to specialize.

While the doctoral program places heavy emphasis on administration at both the theoretical and applied levels, the student is expected to take coursework outside the division, using the flexibility of the program to develop expertise in basic and applied research in such areas as institutional analysis, teaching-learning theory, and curricular and the nature of knowledge.

Comprehensive examination is required for the doctorate to cover the general area of higher education and the candidate's area of the M.A. concentration, minor, and dissertation.

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, Graduate Record Examination (GRE) Aptitude Test score, and promise for professional growth. Transcripts, the GRE Aptitude Test scores, and three letters of recommendation are required for regular admission. An interview is recommended.
Secondary Education

Chair: John E. McEachan


The division provides teacher preparation programs in all secondary school subjects in which the College offers academic programs.

Persons who guide and facilitate the learning experiences of all secondary school students must have an understanding and appreciation of adolescent sources and background in the liberal arts, an open attitude toward contemporary society and its problems, and enthusiasm for the subject taught.

Junior and senior high school teachers usually specialize in a particular subject, although they often teach classes in both their major field and in related fields. In addition to guiding the learning experiences of students in the classroom, secondary teachers plan and develop teaching materials, construct and correct tests, keep records and prepare reports, counsel with parents, and perform other administrative and supervisory duties.

They are also involved in directing and supervising student activities, including clubs and social events, and they participate in out-of-school affairs as interested members of the community in which they teach. Developing and maintaining effective relations with parents and the local community is an important facet of the teacher's responsibility.

Teacher Certification

Students preparing for secondary school teaching must fulfill the general requirements for a bachelor's degree in the College of Liberal Arts or in the College of Business Administration. They must complete the professional courses necessary for the teaching certificate; students preparing to teach art, music, or physical education typically take methods courses and acquire student-teaching experience at both the secondary and elementary levels. Undergraduate candidates for certification to teach in a secondary school should complete at least three courses in the selected areas. The 75:81 Pre-education Practicum, the 78:100 Introduction to Secondary School Teaching, and the 78:105 Educational Psychology and Measurement are required.

Students complete the methods course in their major teaching field prior to the semester in which they do student teaching. They select a student teaching field based on their major, with at least 12 semester hours of credit. Student teaching in the secondary field is available in the main office of the College of Education and in the central office of the Division of Secondary Education.

Graduate Program


The Department of Business Education will be renamed effective May 1, 1981. No new applicants to the Business Education programs are being accepted.

*Minimum grade-point average for admission is 3.0.*

The M.A.T. programs are intended for students with superior academic records who did not complete work for teacher certification at the undergraduate level. Programs leading to the M.A. or M.S. and Ed.S. degrees usually combine advanced work in the academic disciplines and professional education, and are designed for the preparation of master teachers, department heads, supervisors, curriculum coordinators, directors, and coordinators for secondary schools and community colleges.

More extensive interdisciplinary programs leading to the Ph.D. degree also prepare individuals to serve as college or university instructors in their respective fields of specialization in colleges of education or in the academic department of their major field. Some of the interdisciplinary programs are administered jointly by the College of Education and other academic units of the University.
Social Foundations of Education

Doctor of Philosophy

The Ph.D. program requires a minimum of 60 semester hours in social foundations, which must include at least 12 semester hours in the major area of specialization and a minimum of 6 semester hours from each of two additional areas. In addition, the student must take at least 12 semester hours in related courses in the College of Education, 9 of which must be in one area, of concentration, with an educational administration, educational psychology, measurement and evaluation, post-secondary and continuing education, etc. Approximately one third to one half (30 to 45 semester hours) of each student's program is devoted to coursework in depth from at least one other program in the University, such as history, philosophy, political science, sociology, etc. These sequences are individually planned by the student with the advice of his or her advisor and suggestions from the advisor's departmental and/or department. Two research topics are required and are selected from the following alternatives in accordance with the individual candidate's research interests and program: two courses in a graduate level statistics and methodology of science and philosophy of social science methodology; foreign language(s) proficiency exam. In addition, all students are required to complete the course for 71-100 Seminar in Educational Research Strategies. Dissertation research is normally taken for 12 to 14 semester hours of credit.

Courses

Social Foundations and Comparative Education

71-100 History of American Education 3 s.h.
71-100 European Schools 3 s.h.
71-100 European Social Changes in the European Centers, and Education and Social Change 3 s.h.
Special Education

Cheri C. McKeen
Faculty, programs: Aylard Health, Pittsford E. Hours, Paul M. Fein

Undergraduate Programs

The Division of Special Education advises its graduates to continue to find opportunities as teachers of special classes in the public schools or as resource-people for teachers working with handicapped children in regular classrooms. Opportunities in the latter area reflect the trend of special education toward the accommodation of handicapped children in regular classrooms with supplementary help rather than the segregation of handicapped children in special classes.

The University of Iowa program in special education aims to give the B.A. or B.S. student a knowledge of the characteristics of exceptional children, education programs currently provided for exceptional children, methods of reaching exceptional children, and practical experience with exceptional children.

A student minoring in special education may qualify to teach the mentally retarded at the elementary level (State of Iowa Approval B1) to teach the mentally retarded at the secondary level (State of Iowa Approval B1). Endorsement 20), or to teach the physically handicapped at the elementary level (State of Iowa Approval 84). Both elementary-level programs require that the student also complete the requirements for certification in elementary education (State of Iowa Endorsement 10). At the secondary level the student must complete the regular secondary education foundations program and complete the major in special education, including student teaching with the mentally retarded at the secondary level.

Two areas of concentration are also offered. Students interested in teaching preschool handicapped must complete a major in early childhood education. Students interested in teaching severely/profoundly handicapped must also complete a major in elementary or secondary mental retardation.

Program Requirements

Elementary Mental Retardation

First Year
7 u:30 Introduction to Special Education 2 a.h.
7 u:150 Exceptional Children 3 a.h.
7 u:135 Mental Retardation 3 a.h.

Second Year
7 u:31 Teaching Mildly Mentally Retarded Elementary 3 a.h.
7 u:235 Pracitcum with Mildly Handicapped 2 a.h.
7 u:135 Teaching Moderately Mentally Retarded 2 a.h.
7 u:334 Practicum with Moderately Handicapped 2 a.h.

Third Year
7 u:192 Supervised Teaching with Mentally Retarded 7 a.h.

Students completing this program will be recommended for State of Iowa Approval R (Mental Disabilities K-6).

Elementary Physically Handicapped

First Year
7 u:30 Introduction to Special Education 2 a.h.
7 u:130 Exceptional Children 3 a.h.
7 u:128 Orientation to Rehabilitation of Physically Handicapped Child 3 a.h.
3 15 Introduction to Speech and Hearing Processes and Disorders 3 a.h.

Second Year
7 u:138 Methods of Teaching Physically Handicapped 3 a.h.
7 u:34 Practicum with Moderately Handicapped 2 a.h.

Third Year
7 u:193 Supervised Teaching with Physically Handicapped 7 a.h.
Students completing this program are recommended for State of Iowa
Approval 84 (Physical Disabilities K-9).

Students completing this program are recommended for State of Iowa
Endorsement 20 (Secondary Teaching) and Approval 41 (Mental Disabilities 7-12).

Preliminary Guideline

**Second Year**
- TU 12: Teaching Middly Mentally
  Retarded: Secondary 3 s.h.
- TU 13: Practicum with Middly
  Handicapped 2 s.h.
- TU 14: Teaching Middly Mentally
  Retarded 2 s.h.
- TU 15: Practicum with Middly
  Handicapped 2 s.h.
- TU 16: The Culture Different in
  Education Settings 3 s.h.
- TU 17: Facilitating Career Development,
  in Schools 4 s.h.
- TP 170: Introduction to Psychology of
  Reading 3 s.h.
- TU 103: Selection and Use of Media for
  Instruction 3 s.h.
- SU 140: Clinical Practice 3 s.h.

Third Year
- TU 192: Supervised Teaching with
  Mentally Retarded 5 s.h.
- TU 193: Supervised Teaching with
  Psychologically Handicapped 7 s.h.
- TU 194: Practicum with Severely
  Handicapped 3 s.h.
- TU 195: Supervised Teaching with
  Severely Handicapped 3 s.h.

Students completing this program will be recommended for State of Iowa
Endorsement in Psychologically Handicapped, pending program approval
by Iowa Department of Public Instruction.

**Undergraduate Admission**

Sixty-five students who have completed at least one year of college coursework
are eligible for special education each year. Admission decisions are based on
numerical college grade-point average(s)
and experience with the handicapped.

Examples of acceptable volunteer or paid experience with handicapped
persons are: counseling in a summer camp program for the handicapped;
work with the handicapped sponsored by community or volunteer organizations;
estivational, child, adult, or special education.

Documentation forms are available from the
Division of Special Education Office. Documentation forms and the application to
the Teacher Education Program must be submitted by May 15.

**Graduate Programs**

The purpose of the graduate programs in special education is to train new
personnel and to retain existing staff so that both groups can better provide
appropriate levels of service to handicapped children. Most applicants to the
graduate program have undergraduate preparation as teachers either in normal
or special education.

Applications from students without valid
teaching certificates will be reviewed by the
teachers' admission committee.

Graduate programs are offered for certificate only, and at the M.A., Ed.S.,
and Ph.D. degree levels. Students who have teaching certificates or additional
certificates are available at the
graduate level in elementary and
secondary education or special
education.

**Master of Arts**

Most students admitted to the M.A.
program in special education are
seeking to add an approval to teach
either the emotionally disturbed or the
learning disabled.
The M.A. program prepares students to function as teachers in resource, integrated, and self-contained classrooms. The program requires a minimum total of 38 semester hours. A list of required courses is available from the division office.

To be admitted to the M.A. program, students pursuing certification in special education must already be eligible for certification in either elementary or secondary education. Candidates with prior successful teaching experience are given preference. Some students who do not wish to seek certification may be selectively admitted to the M.A. program in special education. Members admitted depend on the resources available.

Educational Specialist in Special Education

The purpose of the program is to provide advanced graduate training for professionals in the field of special education. This may include individuals in consultation, supervisory work, and work-study coordination in special education. The program requires a minimum total of 60 semester hours. In addition to the general graduate admission requirements listed below, requirements for admission to this program include a master's degree in special education or equivalent; preparation and certification in special education; and a minimum of one year full-time teaching experience before admission to the program.

Educational Specialist in Special Education Administration

The primary objective of the program is to provide advanced 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 supervisors and assistant directors. Successful completion of the program qualifies the person for certification in Iowa to serve as a director of special education (State of Iowa endorsement 48) and also qualifies the person for Gitana of Iowa Endorsement 81) certification in general school administration. Graduates are certifiable and employable as administrators of special education generally throughout the Midwest and the nation. The program requires a minimum total of 90 semester hours of credit.

The admission to the program is limited on the basis of resources available. From five to eight new students are admitted each year. In addition to the general requirements listed below, admission requirements include a master's degree and certification in some area of teaching exceptional children, and classroom experience as a teacher.

Educational Specialist in School Psychology

The purpose of this program is to provide coursework and internship training in the areas of education and psychology which will enable graduates to be competent school psychologists. Successful completion of the program qualifies the person for certification to serve as a school psychologist (State of Iowa endorsement 40). The program requires a minimum total of 60 semester hours.

The deadline for receipt of applications for admission to the school psychology program is February 15. Approximately ten students are admitted each year. It is preferred that the applicant have as least a 3.0 grade-point average on previous coursework.

Doctor of Philosophy

The purpose of the Ph.D. program in special education is to prepare students as consultants, school psychologists, directors of special education, and university teacher trainers. The program permits students to study and practice more extensively in their area of interest in special education. The program requires a minimum total of 90 semester hours.

In addition to the general admission requirements listed below, requirements for admission to the Ph.D. program include a master's degree or equivalent; a minimum of one year of full-time teaching experience with exceptional children except the school psychology program. The admissions committee gives preference to applicants with several years of experience.

Special Facilities

Special facilities available to students in special education include the University Hospital School (for mentally and physically disabled) and the University Psychiatric Hospital/Child Psychiatry Program (for children and youth with behavior disorders).

Financial Aid

A limited number of teaching and research assistantships are available to full-time students in M.A., Ed.D., and Ph.D. programs. The Janice Zobor Memorial Tuition Stipend is available to an undergraduate student in the training program for teachers of the physically handicapped.

General Admission Requirements

Graduate admission requirements of the Division of Special Education conform to those used generally by the College of Education, with the following additions:

Completion of the Graduate Record Examination (GRE) Aptitude Test before being admitted to the program (combined scores of 1500 or above are preferred); and

Documentation of having worked successfully with children and youth.

Courses

7510 Introduction to Special Education 3 s.h.
General educational programming course required of undergraduate majors in special education; discussion of assessment process, IEP development, systematic teaching, behavioral analysis, recommended for undergraduates interested in special education.

7531 Teaching Mildly Handicapped Students 3 s.h.
Methods of assessing and teaching skills in math, language arts, social learning, communication, functional self-help skills, Prerequisites: FYU 130, FYU 135, and FYU 136.

7535 Teaching Mildly Handicapped Students 2 s.h.
Special education teaching strategies for teaching children with mild disabilities in academic and social areas; classroom management; translation from secondary school to work. Prerequisites: FYU 130, FYU 135, and FYU 136.
72-127 Education of the Gifted 3.0 hrs.
   Designed to prepare the following interventions regarding the gifted: identification, assessment, placement, and educational programming. Prerequisites: PSY 108, 110, and 112.

72-130 Methods of Teaching Physically Handicapped 3.0 hrs.
   Designed to provide special teachers and educational aides with instruction needed when working with physically handicapped students in classrooms. Prerequisites: PSY 108, 109, and 110. Offered spring semesters, Prerequisites: 72.130.

72-131 Special Education for Blind and Visually Handicapped 1.5 hrs.
   Emphasis on the unique educational needs of the visually handicapped student. Prerequisites: 72.130.

72-132 School Psychology in Exceptional Children 3.0 hrs.
   This course provides an overview of special education services for exceptional children. Prerequisites: 72.130.

72-133 Introduction to Learning Disabilities 3.0 hrs.
   Introduction to the identification, characteristics, and remediation of learning disabilities. Prerequisites: PSY 108, 109, 110, and 112.

72-134 Introduction to Emotional Disabilities 3.0 hrs.
   This course provides an overview of emotional disabilities. Prerequisites: PSY 108, 109, 110, and 112.

72-135 The Gifted Child: A Differentiated Education 3.0 hrs.
   This course examines the instruction and assessment of gifted students. Prerequisites: 72.130.

72-136 Teaching the Gifted 3.0 hrs.
   Topics include identification, assessment, instruction, and the role of special services in the education of gifted students. Prerequisites: 72.130.

72-137 Teaching Exceptional Students: Bluntly Defined 3.0 hrs.
   This course focuses on the teaching of students with special needs, including those with mental retardation, emotional disturbance, and learning disabilities. Prerequisites: 72.130.

72-138 Methods of Teaching Secondary and Elementary Special Educati 3.0 hrs.
   Designed to provide practical and specialized training to prospective teachers. Prerequisites: 72.130.

72-139 Methods of Teaching Physically Handicapped 3.0 hrs.
   Designed to provide special teachers and educational aides with instruction needed when working with physically handicapped students in classrooms. Prerequisites: PSY 108, 109, and 110. Offered spring semesters, Prerequisites: 72.130.

72-140 Methods of Teaching Physically Handicapped 3.0 hrs.
   Designed to provide special teachers and educational aides with instruction needed when working with physically handicapped students in classrooms. Prerequisites: PSY 108, 109, and 110. Offered spring semesters, Prerequisites: 72.130.

72-141 Introduction to School Psychology 1.5 hrs.
   Introduction to school psychology with considerations of current issues and stress a total overview of contemporary issues. Prerequisites: PSY 108, 109, and 110.

72-142 Animal Behavior in Special Education 3.0 hrs.
   An introduction to animal behavior with considerations of current issues and stress a total overview of contemporary issues. Prerequisites: PSY 108, 109, and 110.

72-143 Multicultural Issues in Special Education 1.5 hrs.
   Multicultural issues in special education with considerations of current issues and stress a total overview of contemporary issues. Prerequisites: PSY 108, 109, and 110.

72-144 Special Education for Blind and Visually Handicapped 1.5 hrs.
   Emphasis on the unique educational needs of the visually handicapped student. Prerequisites: 72.130.

72-145 Introduction to Learning Disabilities 3.0 hrs.
   Introduction to the identification, characteristics, and remediation of learning disabilities. Prerequisites: PSY 108, 109, 110, and 112.

72-146 Introduction to Emotional Disabilities 3.0 hrs.
   This course provides an overview of emotional disabilities. Prerequisites: PSY 108, 109, 110, and 112.

72-147 The Gifted Child: A Differentiated Education 3.0 hrs.
   This course examines the instruction and assessment of gifted students. Prerequisites: 72.130.

72-148 Teaching the Gifted 3.0 hrs.
   Topics include identification, assessment, instruction, and the role of special services in the education of gifted students. Prerequisites: 72.130.

72-149 Teaching Exceptional Students: Bluntly Defined 3.0 hrs.
   This course focuses on the teaching of students with special needs, including those with mental retardation, emotional disturbance, and learning disabilities. Prerequisites: 72.130.

72-150 Methods of Teaching Secondary and Elementary Special Educati 3.0 hrs.
   Designed to provide practical and specialized training to prospective teachers. Prerequisites: 72.130.

72-151 School Psychology 3.0 hrs.
   The role of the school psychologist in the education of the exceptional child. Prerequisites: 72.130.

72-152 Methods of Teaching Physically Handicapped 3.0 hrs.
   Designed to provide special teachers and educational aides with instruction needed when working with physically handicapped students in classrooms. Prerequisites: PSY 108, 109, and 110. Offered spring semesters, Prerequisites: 72.130.

72-153 Methods of Teaching Physically Handicapped 3.0 hrs.
   Designed to provide special teachers and educational aides with instruction needed when working with physically handicapped students in classrooms. Prerequisites: PSY 108, 109, and 110. Offered spring semesters, Prerequisites: 72.130.

72-154 Introduction to School Psychology 1.5 hrs.
   Introduction to school psychology with considerations of current issues and stress a total overview of contemporary issues. Prerequisites: PSY 108, 109, and 110.

72-155 Multicultural Issues in Special Education 1.5 hrs.
   Multicultural issues in special education with considerations of current issues and stress a total overview of contemporary issues. Prerequisites: PSY 108, 109, and 110.

72-156 Special Education for Blind and Visually Handicapped 1.5 hrs.
   Emphasis on the unique educational needs of the visually handicapped student. Prerequisites: 72.130.

72-157 Introduction to Learning Disabilities 3.0 hrs.
   Introduction to the identification, characteristics, and remediation of learning disabilities. Prerequisites: PSY 108, 109, 110, and 112.

72-158 Introduction to Emotional Disabilities 3.0 hrs.
   This course provides an overview of emotional disabilities. Prerequisites: PSY 108, 109, 110, and 112.

72-159 The Gifted Child: A Differentiated Education 3.0 hrs.
   This course examines the instruction and assessment of gifted students. Prerequisites: 72.130.

72-160 Teaching the Gifted 3.0 hrs.
   Topics include identification, assessment, instruction, and the role of special services in the education of gifted students. Prerequisites: 72.130.

72-161 Teaching Exceptional Students: Bluntly Defined 3.0 hrs.
   This course focuses on the teaching of students with special needs, including those with mental retardation, emotional disturbance, and learning disabilities. Prerequisites: 72.130.

72-162 Methods of Teaching Secondary and Elementary Special Educati 3.0 hrs.
   Designed to provide practical and specialized training to prospective teachers. Prerequisites: 72.130.

72-163 School Psychology 3.0 hrs.
   The role of the school psychologist in the education of the exceptional child. Prerequisites: 72.130.
72.280 Integration of Assessment Information 3-4 h.
Supervised practice in the integration of educational, psychological, social, and medical information into a total plan of educational and therapeutic services for children and adolescents to obtain the above information and present complete case studies in class. Prerequisites: 72.270, 72.240, 72.261, 72.270, and consent of instructor.

72.282 Curriculum Theory and Practice 3 h.
Same as 72.280, 72.281.

72.283 Advanced Laboratory Practice with Exceptional Children 3 h.
Observation, experimentation, and individual research pertaining to problems of teaching, learning, and administrative evaluation. Seminar topics and application of curricula materials for exceptional children. Prerequisite: consent of instructor.

72.283 Individual Inclusion in Special Education 3 h.
Prerequisite: consent of instructor.

72.287 Internship in School Psychologist 3 h.
Provides an opportunity for the student to work in actual school settings under the guidance of a supervisor. Prerequisites: 72.240, 72.261, and consent of instructor. Prerequisite for Ph.D. students: any course as for 72.261 or equivalent.

72.288 Seminar: Current Issues in School Psychology 3 h.
Readings and discussion of the current issues in school psychology such as ethical and legal standards, diagnosis, literacy, etc. For advanced students in school psychology. Prerequisite: consent of instructor.

72.304 Seminar in Special Education 3 h.
Section 1: Theoretical review of major studies in the field, intended to help in preparation for Ph.D. comprehensive examinations. Section 2: Research experiences in the methodology of research, program planning, data collection, and analysis. Prerequisites: 72.240, 72.261, 72.280, and consent of instructor. Prerequisite for Ph.D. students: any course as for 72.261 or equivalent.

72.305 Seminar: Current Issues in Special Education 3 h.
Administrative. Prerequisites: 72.240 and 72.261. May be repeated.

72.310 Practicum in College Counseling 3 h.
Prepares students for professional experience in college counseling. May be repeated. Prerequisite: consent of instructor.

72.320 Supervision of School Psychology Practicum 1 h.
Doctoral students gain experience supervising school psychology practicum or internship students. Prerequisite: consent of instructor.

72.325 Final Seminar Project in Special Education 3 h.
Provide part-time or full-time experience as an intern in school districts or state education agencies. Prerequisite: consent of instructor and admission to special education, Prerequisite: consent of instructor.

72.326 A Project in Special Education 3 h.
Prerequisite: consent of instructor.

72.330 Educational Specialist Research 3 h.
Research involving data analysis and writing a report on a topic of relevance to the Ph.D. candidate. Prerequisite: consent of instructor.

72.360 D.S. Practice in Educational Research 1 h.
Prerequisite: consent of instructor.

72.444 Ph.D. Practicum in Special Education 3 h.
Prerequisite: consent of instructor.
College of Engineering

Engineering is the profession in which a knowledge of the mathematical and natural sciences is applied to develop ways to utilize economically the materials and forces of nature for the benefit of mankind. The major aim of engineering is the creation of a new process, product, material, or system that is useful to our society. This activity demands a high degree of creativity coupled with broad knowledge, 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 in private practice.

The College of Engineering has two major responsibilities. The first is the responsibility for the undergraduate engineering curricula, laboratories, counseling, and other aspects of the undergraduate educational programs. The second responsibility is the graduate programs leading to Master of Science and Doctor of Philosophy degrees in modern areas of engineering. Education at the graduate level includes extensive activities in creative research and development in laboratories of the college by faculty members and graduate students.

Programs Offered

The College of Engineering offers programs leading to the Bachelor of Science degree in the professional fields of chemical engineering, civil engineering, electrical engineering, industrial engineering, and mechanical engineering. Programs leading to the Master of Science and Doctor of Philosophy degrees are offered in the fields of chemical and materials engineering, civil and environmental engineering, electrical and computer engineering, industrial and management engineering, and mechanical engineering.

The college also offers an undergraduate program leading to the Bachelor of Science in engineering degree for students whose career objectives cannot be met by the professional programs. The biomedical engineering program is an option within this degree structure.

Any of the undergraduate programs offered by the College of Engineering may be combined, in a five-year option, with a program leading to the Bachelor of Arts degree in the College of Liberal Arts.

The undergraduate programs in chemical, Civil, Electrical, Industrial, and Mechanical Engineering are accredited by the Accreditation Board for Engineering and Technology (ABET) of the American Association of Engineering Societies (AABES)—formerly the Engineers' Council for Professional Development (ECPO).

Undergraduate Programs

Degree Requirements

The engineering Bachelor of Science degrees require a minimum of 126 semester hours of credit including satisfaction of the specific requirements of the major program as described in the following sections. The candidate for a baccalaureate degree must be enrolled in the College of Engineering for at least the last 30 semester hours or 45 of the last 60 semester hours and must have a minimum grade-point average of 2.0 or college work used to satisfy the degree requirement as well as all work undertaken at The University of Iowa.
Admission Requirements

To qualify for admission to the College of Engineering as a freshman, an applicant must have:

- Completed the American College Test with a composite standard score of 24 or above and a standard score of 24 or above in mathematics.
- Successfully completed at least one and one-half units of algebra, one unit of plane geometry, and one unit of trigonometry.
- Ranked in the upper one-half of his or her high school graduating class.

High school physics and chemistry are recommended for all applicants.

Transfer applicants must submit a formal application and an official transcript of college work undertaken at other institutions. Each applicant should have:

- Completed at least one semester of calculus or its equivalent, and
- Maintained a cumulative grade-point average of at least 3.0, based on a 4-point marking system.

A maximum of 64 semester hours (or the equivalent) from a junior college will be accepted toward a baccalaureate degree.

After reviewing the records of either a freshman or transfer student applicant who does not meet minimum admission requirements, the director of admissions may admit the applicant unconditionally; admit on probation, require a summer session trial enrollment, or deny admission. Applicants who do not meet all of the criteria for admission to the College of Engineering are automatically considered for admission to the preengineering program in the College of Liberal Arts.

Curricular Structure

The undergraduate curricular programs in engineering are designed to assure an adequate foundation in mathematics and science, the humanities and the social sciences, engineering science, and engineering methods. Added to this base is preparation in an engineering specialization appropriate to the challenge presented by today's complex and difficult technological problems. The overall objective of the curricular programs is to provide an integrated educational experience directed toward the development of the ability to apply pertinent knowledge to the identification and solution of practical problems in each of the designated areas of engineering specialization. The specific objective of the curriculum is to prepare students for the practice of engineering.

The curriculum is structured into four parallel areas extending through the entire four years of undergraduate study. The areas are mathematics, basic and engineering sciences, humanities and social sciences, and engineering analysis and design. The mathematics, basic and engineering sciences, and humanities and social sciences develop the background required for engineers. The practice of engineering involves the ability to utilize this education to determine practical solutions to real problems. This ability is developed in the analysis and design areas.

The course sequence in this area begins with 560:1 Introduction to Engineering, First semester of the freshman year and terminates with senior-level design courses during the final year. Approximately one-half of the courses in the four areas are common to all of the programs. This group of common courses is called the engineering core and consists of courses in mathematics, chemistry, physics, rhetoric, and engineering science and design. Most of the core courses are taken in the first two years. This feature permits the first semester of the freshman year to be entirely common and the first three semesters to be arranged so that a student may follow any program major, transfer between majors, or not declare a major during this period, with only minor adjustments in scheduling. This gives students ample time to become familiar with the various major areas before choosing a specific engineering program.

In addition to the core program and the humanities and social sciences elective sequence, which is also common to each program, each degree program specifies a required group of courses which provide a common depth and breadth of topics to every student in each of the curricular programs. These courses provide a common background which the faculty expect of every graduate in each of the respective programs. The remaining courses are technical electives chosen by the student in consultation with his or her academic advisor. These courses allow the student to develop additional depth in areas of special interest that are ordinarily taken at the senior level.

The curriculum for the freshman year is as follows:

**First Semester**
- 4:13 Principles of Chemistry I 3 h.
- 10:1 Rhetoric 4 h.

**Second Semester**
- 4:16 Elementary Chemistry Laboratory 2 h.
- 10:2 Rhetoric 4 h.
- 520:5 Introduction to Engineering 4 h.
- 560:5 Engineering Graphics 2 h.
- Total 15 h.

A maximum of 7 semester hours is allocated for electives.

Students who qualify for 10:3 will be allowed 3 semester hours of free elective, while those taking the 8-semester-hour sequence of 10:1-2 may apply only 7 semester hours toward their engineering program.

The courses listed above are required of all students in engineering; 4:14 Principles of Chemistry II is recommended during the second semester for students who are biological or chemical engineering majors.

**Humanities and Social Sciences Requirements**

The goal of the humanities and social sciences area is to provide more effective preparation for professional responsibilities by integrating humanities and social sciences into the undergraduate engineering curriculum.

Supportive of this goal, the student is to select, with the advisor's approval, a minimum of 18 semester hours of
The humanities elective will consist of College of Liberal Arts core courses in the historical-cultural area and/or appropriate courses from any of the following departments and schools: American Civilization, Art and Art History, Classics, Asian Languages and Literature, Communication and Theatre Arts, English, History, Literature, Science, and the Arts: Music, Philosophy, Religion, Linguistics, or other departments approved by the College or Engineering faculty. Students may select courses from departments not included above with the approval of the assistant to the dean. Students shall select a minimum of 3 semester hours of advanced (100-level) coursework in the humanities area to secure sufficient depth of knowledge in an elected subject of study. The advanced coursework will build on a previously completed elementary course. Language courses will not satisfy any of the humanities requirements unless the courses are at or beyond the second-year level. Studio courses in art and music will not fulfill the requirement.

Undergraduate Academic Advising Center

Academic Standards

Semester Load Limit

A normal academic load is about 15 semester hours of coursework for a semester, 8 for a summer session. No student may register for more than 18 semester hours in a semester, or 9 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 and applicable to a bachelor’s degree in engineering, according to the following table:

- Freshman—less than 20 semester hours
- Sophomore—20 to 35 semester hours
- Junior—35 to 60 semester hours
- Senior—60 or more semester hours

Marking System

The college uses the 4-point marking system, in which grade points are awarded on a scale descending from A=4. For a full description see the
Credit by Examination

Students who have acquired knowledge in subjects other than those covered in regular courses may, with permission of the college, take examinations to receive credit toward graduation. A student wishing to exercise this opportunity should apply to the dean.

Advanced Placement

Under the Advanced Placement Program of the College Entrance Examination Board, a high school senior may take comprehensive achievement examinations in chemistry and in analytical geometry and calculus. The College of Engineering grants college credit and advanced placement of students who achieve satisfactory standards in these examinations. For information, write to the College Entrance Examination Board, 475 Riverside Drive, New York, N.Y. 10027.

Pass-Fail Option

A maximum of two courses taken on a pass-fail basis may be applied toward the requirement for the humanities and social sciences requirement. The pass-fail option may not be used for courses taken to satisfy the metric requirement.

Second-Grade-Only Option

A student may elect to repeat a course with only the new grade being counted in his or her grade-point average. This option can only be elected prior to the time of completing a course for which the repeated course is a prerequisite. The option may be applied to no more than two courses and it may be elected only once to a given course. Transfer students may apply the option only to a pro-rated basis. For example, a student transferring no more than 4 credits for the second-semester hours of applicable engineering coursework may use this option for one or two courses, while a student with between 42 and 86 semester hours of credit may use this option for no more than two courses, and students with 86 or more semester hours of transfer credit may use this option for only one course. Students wishing to exercise this option should apply to the dean of the college.

Satisfactory-Fail Courses

The noncredit professional fall semester courses, which are required in each of the professional programs, are offered only on a satisfactory-fail basis. No other engineering courses are offered on this basis. An F (failure) grade earned for such a class will not satisfy any portion of the professional seminar requirement.

Incomplete and No Report Grades

A make-up (incomplete) or Q (no report) which is not replaced by a final grade prior to the announced deadline within the student's next regular semester of registration will be replaced by a final grade of F (failure), except that students with incompletes from the spring semester are exempt from completing the course during the succeeding summer session.

Recognition for Academic Achievement

The college awards degrees "with highest distinction" to students in the highest 2 percent of the graduating class, "with high distinction" to students in the next highest 5 percent, and "with distinction" to students in the next highest 5 percent. Ranking is based on academic grade-point average after all college-level study undertaken to their final registration.

Dean's List

Engineering students achieving grade-point averages of 3.5 or above during a given semester on 12 or more semester hours of graded work with 1.0 or 0.0 standing on the current or past semester's record, are recognized by inclusion on the dean's list for that semester.
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 annual open house, UNICA Week, and the student-faculty reception for new students. Other college-wide matters of general student interest are also handled through the organization.

Engineering students publish their own student journal, the HawkEye Engineer. All positions are staffed by students, with faculty serving only in an advisory capacity.

Student branches of the American Institute of Chemical Engineers, the American Institute of Industrial Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the Institute of Electrical and Electronics Engineers are active at the University of Iowa.

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. Phi Lambda Upsilon, honorary chemistry and chemical engineering fraternity; Chi Epilson, honorary civil engineering fraternity;Eta Kappa Nu, honorary electrical engineering fraternity; and Pi Tau Sigma, honorary mechanical engineering fraternity, recognize the work of outstanding students in their respective fields.

Student organizations dedicated to providing support and assistance in the development of more equitable enrollments of women and minorities in the college are the Black Students in Engineering and the women's chapter of the Society of Women Engineers. A local chapter of Omicron Tau Eta, a national professional engineering fraternity, is active in service to the college and draws its membership from students throughout the college.

Professional Registration
Registration as a professional engineer is governed by the laws of each state. The minimum requirements involve graduation from an accredited engineering curriculum of at least four years, followed by at least four years of practical experience.

In Iowa the agency that controls and monitors the licensing procedures is the Iowa Board of Engineering Examiners. The first step in the procedure for students enrolled in an accredited program is to pass an examination on engineering fundamentals given at the University near the time of graduation. Following graduation and the successful completion of the engineering fundamentals exam, the graduate receives an Engineer-in-Training (E.I.T.) certificate. The final step in the procedure is to pass the advanced exam in a specialty area following a minimum of four years of approved professional experience. At that point the graduate engineer is a registered "Professional Engineer."

Graduate Programs
The general rules and regulations for the graduate programs are set forth by the Graduate College. However, the specific admission and degree requirements for each graduate engineering program are included in the sections devoted to the individual programs. Also included in those sections is a description of the financial aid available in each program and also a description of the principal areas of study and research.

College Facilities
The Engineering Library
The Engineering Library is a center of college activity. Its collection includes 50,000 books and 860 periodicals. It is equipped with microfilm and microfiche readers, and provides study spaces for 130 library users.

Computer Based Education (CBE) Laboratory
The Computer Based Education Laboratory provides interactive computer-based training in the University's FORTRAN 77, FUNDAMENTAL COMP 2000 computer systems via video display and typewriter terminals. The laboratory also contains line printers for work by students and facilities for high volume printed output as well as video equipment for instructional demonstrations.

Computer Services
Services of the Weeg Computing Center are used extensively by students and faculty of the college under the auspices of the college computer committees. The center maintains remote terminals and printers for access to the University computer systems in the CBE Laboratory. In addition, a number of microcomputers and microcomputers are available within the college for specialized use by students and faculty.

Employment Placement Services
Students and alumni can avail themselves of the placement services provided by the College of Engineering. Interview rooms and a placement library of informational material are located in the Engineering Building. Assistance is available for arranging interviews and obtaining information on job opportunities.

Organization of the College
Extraordinary demands have been imposed on the engineering profession in general and on engineering education in particular by the broadening spectrum of activities in which the engineer participates and by the increasing complexity of technology. The college has responded to these demands by imparting to the traditional pattern of college education, an organizational structure of engineering colleges. It has organized its faculty and students into different types of college sub-units—academic...
Iowa Institute of Hydraulic Research

The Iowa Institute of Hydraulic Research (IHR) is the third basic unit of the College. The Institute is widely acknowledged to be one of the world’s leading organizations in the areas of basic and applied fluid research.

The Institute co-sponsors programs of fundamental research and advanced design and analysis in the areas of environmental pollution, biotechnology, nuclear hydraulics, river mechanics, ice hydraulics, hydrology, water resources, hydraulic structures, fluid mechanics, and advanced instrumentation and data handling techniques for fluids research.

Diplomate student participation in all research and consulting activities is one of the hallmarks of the Institute’s operation.

Center of Materials Research

The Center of Materials Research is the fourth basic unit of the College. It was founded on the philosophy that technology of the future requires the integration of a variety of disciplines in order to transcend traditional methods of research and development.

The center is presently focused on programs of fundamental and applied research in biomedical engineering with particular emphases on biomaterials. Supported projects include: traumatic head and spinal injuries, hemodynamics, cardiac mechanics, prosthetic heart valves, and bone and joint biomechanics.

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.

Course Numbering System

The title of each course offered by the College of Engineering is preceded by a 3-digit prefix and a 3-digit suffix separated by a colon. The first digit of the prefix is 5, which identifies the course as being offered by the College of Engineering. The second digit of the prefix identifies the division of the college that offers the course, as follows:

52—Energy Engineering
54—Information Engineering
58—Materials Engineering
59—Systems Engineering

The third digit of the prefix identifies the engineering core courses or the courses offered by the divisions for a specific curriculum program, with the correspondence between the third digit and the curriculum programs as shown below:

0—Engineering Core
1—Biomedical Engineering
2—Chemical and Materials Engineering
3—Civil and Environmental Engineering
5—Electrical and Computer Engineering
8—Industrial and Management Engineering
7—Division Specialty Programs
8—Mechanical Engineering

The three-digit suffix of a course number identifies the level and type of course. Generally the suffix numbers below 100 designate courses for undergraduates, numbers 100 to 199 designate courses for undergraduates and graduates, and number 200 and above designate courses primarily for graduates. The tables below provide further details of conveying information on the level and type of courses:

001—009—Freshman core courses
010—019—Sophomore core courses
020—029—Junior core courses
030—089—Required courses in undergraduate programs
Biomedical Engineering

Sponsored by Kean Kim
Faculty: Professors Robert C. Knoblock, Clyde M. Tien, Ching-Jue Chen, Y. King Liu, Eric G. Maksian, Dennis B. McDonald, Kean Kim, and associate professor Howard S. Fetter.

The past two decades have seen a tremendous growth of technological activity in biology and medicine. As engineers have become increasingly involved with projects in the life and health sciences, there has been an increased 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: the biomedical engineering profession. The undergraduate biomedical engineering program is a curricular option offered within the Division of Science program at Kean University.

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, man–machine systems, etc.), in government (Veterans Administration, Environmental Protection Agency, Food and Drug Administration, etc.), or they may elect to pursue their formal education in the engineering, medical, or legal professions.

Many engineering college faculty members have joint appointments in the College of Medicine. Both biomedical engineering undergraduates and graduate engineering students participate actively in college faculty activities and their colleagues in the life and health sciences on projects of mutual interest.

Courses which have been designed primarily for the biomedical engineering program are identified by the digit 1 in the third position of the course number prefix. Course descriptions in the sections devoted to the Division of Information and Materials Engineering.

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 the student to satisfy the entrance requirements of the Graduate College and the colleges of Medicine, Dentistry, and Law.

**Curriculum**

**Sophomore Year**

**First Semester**

- 227137 Engineering Calculus III
- 562018 Thermodynamics I
- 540111 Introduction to Electrical Science
- 56015 Materials Science I
- 56010 Dynamics
- Total 17 a.h.

**Second Semester**

- 227138 Differential Equations and Linear Algebra
- 313099's Principles of Animal Biology
- 540112 Linear Systems Analysis
- 56019 Mechanics of Deformable Bodies
- Total 15 a.h.

**Junior Year**

**First Semester**

- 560238 Probability and Statistics for Engineering and Physical Sciences
- 560212 Principles of Design I
- 54018 Principles of Electronic Instrumentation
- 561811 Elementary Bio-engineering
- 530230 Mechanics of Fluids and Transfer Processes
- 561911 Professional Seminar
- Total 17 a.h.

**Second Semester**

- 298262 Physics of Waves and Optics
- 412101 Optical Chemistry
- 560222 Principles of Design II
- 560238 Technical Electives
- 560061 Humanities or Social Science electives
- Total 14 a.h.
and engineer the complete process as well as the equipment used in it. They choose the proper raw materials and operate the manufacturing facilities efficiently, safely, and economically. They are employed by basic industries such as heavy chemicals, petroleum, coal, and solvents as well as consumer-oriented industries such as plastics, food, fertilizers, pharmaceuticals, cosmetics, paints, and synthetic fibers. They are engaged in research, process and product development, process and plant design, actual production operation, and sales. Many experienced engineers become managers or administrators.

Courses which have been designed primarily for the chemical and materials engineering program are identified by the digit 2 in the third position of the course number prefix. Course descriptions are provided in this catalog primarily within the section devoted to the Division of Materials Engineering.

Bachelor of Science

The Bachelor of Science in Chemical Engineering degree program prepares the student for work in design, supervision, development, or sales. The curriculum includes extensive training in chemistry on the same level as chemistry majors. A sequence of mathematics courses together with the common engineering core courses provides a strong foundation. Undergraduate students have the opportunity to work with faculty members and graduate students on current research topics.

Curriculum

Sophomore Year

First Semester

22M:37 Engineering Calculus III 4 s.h.
560:10 Dynamics 3 s.h.
540:11 Introduction to Electrical Science 3 s.h.
560:15 Materials Science I 3 s.h.
Humanities or social science elective 3 s.h.
Total 16 s.h.

Second Semester

22M:38 Differential Equations and Linear Algebra 4 s.h.
560:12 Linear Systems Analysis 3 s.h.
540:15 Principles of Electronic Instrumentation 4 s.h.
520:20 Mechanics of Fluids and Transfer Processes 4 s.h.
562:12 Process Calculations 3 s.h.
Total 16 s.h.

Junior Year

First Semester

41:191 Physical Chemistry I 3 s.h.
29:82 Physics of Waves and Optics 3 s.h.
560:21 Principles of Design I 3 s.h.
552:43 Design for Energy and Momentum Transfer 4 s.h.
Technical elective 3 s.h.
562:91 Professional Seminar 0 s.h.
Total 16 s.h.

Second Semester

41:132 Physical Chemistry II 3 s.h.
41:143 Advanced Chemistry Laboratory I 3 s.h.
562:41 Chemical Engineering Thermodynamics 3 s.h.
562:44 Mass Transfer Operations 3 s.h.
Humanities or social science elective 3 s.h.
562:91 Professional Seminar 0 s.h.
Total 10 s.h.

Senior Year

First Semester

41:129 Organic Chemistry I 3 s.h.
562:45 Chemical Reaction Kinetics 3 s.h.
562:46 Economics in Design 3 s.h.
562:47 Unit Operations Lab I 2 s.h.
Humanities or social science elective 3 s.h.
562:91 Professional Seminar 0 s.h.
Total 14 s.h.

Second Semester

41:122 Organic Chemistry II 3 s.h.
41:141 Intermediate Chemistry Laboratory I 2 s.h.
562:49 Unit Operations Lab II 2 s.h.
562:49 Chemical Engineering Process Design 3 s.h.
Graduate Program

The Chemical and Materials Engineering Program offers curricula leading to the Master of Science and Doctor of Philosophy degrees. Through coursework and research, students gain an understanding of the principles of engineering science and then apply those principles to contemporary problems such as energy, environment, and materials. The emphasis is on research since most of the opportunities for graduates are in industrial research and development. About one-third of the program is devoted to a research project, and a thesis is required for each degree.

All candidates in advanced degree programs are required to assist faculty members in teaching or research as part of the graduate study plan.

Research is currently being conducted in materials science, mechanical and structural engineering, and environmental engineering. Some funded projects are described briefly below:

Air Pollution
The study of transport phenomena of atmospheric processes involving the analysis and numerical modeling of chemically reactive flows and combined mass transfer systems is ongoing. This research may help assess regional pollution control and energy-utilization strategies.

Fine Particles
A group of professors and graduate students is engaged in research on materials in finely divided form such as dust, powders, and aerosols. The goals of this group are to describe statistically the particles size and shape and then to relate these to the origin of the particles and their behavior. Potential applications include atmospheric pollution phenomena, chemical reactions, crushing and grinding, crystallization, grain dust explosions, storage and flow of granular solids, and ananes of machine wear.

Flow through Porous Media
Kluzaan flow and surface diffusion through various porous media are being studied. Practical applications are in gas separations, catalysis, and solar refrigeration, currently a solar energy application in being investigated.

Membrane Separations
several novel membrane processes have recently been developed in Chemical and Materials Engineering laboratories. This group is now actively investigating various aspects of these new techniques, such as optimization and design, as well as working on the development of an oxygen generator, and pervaporation process. A number of industrial gases as well as natural gas can be purified by these processes. These membrane processes can also be applied to separate liquid mixtures such as alcohol and water.

Mechanical Behavior of Cast Steel
Quantitative, optical, and scanning electron microscopieographic and metallographic analyses are being used to relate the characteristic features of the fracture surface and the microstructure to experimentally measured bulk mechanical properties such as the fracture toughness, fatigue crack growth rate, and others.

Master of Science
A thesis and a minimum of 30 semester hours of graduate credit are required, including at least 24 semester hours completed in residence at this University. Work completed in a college class and graduate credit must not exceed 8 semester hours. However, 6 semester hours may be completed if residence at another recognized graduate college or by correspondence study at the University of Iowa.

The minimum core requirement is 24 semester hours (about eight courses), and the remainder of the 30 semester hours may be devoted to research. To be eligible for the M.S. degree, the student is expected to maintain a minimum grade-point average of 3.0. Each M.S. degree candidate must defend his or her thesis at the final oral examination. Although it is possible to obtain an M.S. degree within one year, many students spend three or four semesters to complete the requirements.

Doctor of Philosophy
The Ph.D. degree is granted primarily on the basis of achievement rather than on the accumulation of semester hours of credit. However, the candidate is normally expected to have completed three academic years of residence, or two years if he already holds a recognized master's degree. In any case, the degree candidate is required to have completed at least 72 semester hours of graduate credit. A Ph.D. candidate is expected to maintain a minimum grade-point average of 3.5.

All doctorate students are required to pass a written and oral comprehensive examination prior to candidacy for the degree. The Ph.D. comprehensive examination may be a special design project, or at the discretion of the examining committee, it may consist of a written examination covering graduate work. These examinations are arranged by members of the examining committee. The examinations may be repeated. The rules for the comprehensive examination may be found in the manual of the Graduate College. There is no foreign language requirement. A final examination, which is a defense of the thesis, culminates the doctoral program.

Graduate Admission Requirements
Full admission to graduate study in this program is granted to students having a B.S. degree in chemical engineering with
Civil and Environmental Engineering

Program Chair: H. K. Kane

Undergraduate Program

Civil engineering courses built on the Foundation of Education are designed to give the student the broad educational background essential to modern civil engineering practice. Electives in the senior year permit greater breadth or additional concentration in such areas of specialization as structural and foundation engineering, environmental engineering, hydraulic engineering, and transportation engineering.

Curriculum

Sophomore Year

First Semester

560:10 Dynamics 3 s.h.
540:11 Introduction to Electrical Science 3 s.h.
560:15 Materials Science I 3 s.h.
520:10 Thermodynamics I 4 s.h.
Total 17 s.h.

Second Semester

520:58 Differential Equations and Linear Algebra 4 s.h.
540:12 Linear Systems Analysis 3 s.h.
560:19 Mechanics of Deformable Bodies 3 s.h.
520:20 Mechanics of Fluids and Transfer Processes 4 s.h.
Humaneities and social science elective 3 s.h.
Total 17 s.h.

Civil and Environmental Engineering

Program Chair: H. Kane

Undergraduate Program

Civil engineering courses built on the Foundation of Education are designed to give the student the broad educational background essential to modern civil engineering practice. Electives in the senior year permit greater breadth or additional concentration in such areas of specialization as structural and foundation engineering, environmental engineering, hydraulic engineering, and transportation engineering.

Curriculum

Sophomore Year

First Semester

560:10 Dynamics 3 s.h.
540:11 Introduction to Electrical Science 3 s.h.
560:15 Materials Science I 3 s.h.
520:10 Thermodynamics I 4 s.h.
Total 17 s.h.

Second Semester

520:58 Differential Equations and Linear Algebra 4 s.h.
540:12 Linear Systems Analysis 3 s.h.
560:19 Mechanics of Deformable Bodies 3 s.h.
520:20 Mechanics of Fluids and Transfer Processes 4 s.h.
Humaneities and social science elective 3 s.h.
Total 17 s.h.
Junior Year
First Semester
542:18 Principles of Electronic Instrumentation 4 s.h.
565:21 Principles of Design I 3 s.h.
580:32 Probability and Statistics for Engineering and Physical Sciences 3 s.h.
563:31 Structural Analysis I 4 s.h.
563:56 Soil Mechanics 3 s.h.
583:91 Professional Seminar 0 s.h.
Total 17 s.h.
Second Semester
29:82 Physics of Waves and Optics 3 s.h.
560:22 Principles of Design II 3 s.h.
563:35 Structural Design I 3 s.h.
523:80 Principles of Hydrodynamics 4 s.h.
563:91 Professional Seminar 0 s.h.
Humanities and social science elective 4 s.h.
Total 17 s.h.
Senior Year
First Semester
563:36 Structural Design II 3 s.h.
563:73 Transportation Systems Design 3 s.h.
523:84 Hydraulic Design 3 s.h.
583:91 Professional Seminar 0 s.h.
522:160 Principles of Environmental Engineering 3 s.h.
Humanities and social science elective 3 s.h.
Total 15 s.h.
Second Semester
565:74 Transportation Systems Design 3 s.h.
583:91 Professional Seminar 0 s.h.
563:97 Sector Project 1 s.h.
*Technical electives 6 s.h.
Humanities and social science electives 6 s.h.
Total 16 s.h.

Graduate Programs
The graduate program in civil and environmental engineering offers curricula preparing students for professional careers and further study in environmental engineering, environmental science, hydraulics, structural mechanics and materials, structural and geotechnical engineering, transportation, and water resources.

Hydraulics and Water Resources
The hydraulics and water resources curricula are associated with the Iowa Institute of Hydraulic Research, whose laboratory is world-renowned. The senior staff members of the laboratory are professors in the program and devote about half-time to teaching. The institute offers unique opportunities for students to participate actively in the research, analysis, and design aspects of real world problems. Considerable attention is given to the use of digital computers in mathematical modeling and in the acquisition and processing of data. The water resources curriculum also has ties to the Institute of Economic Research, the Institute of Urban and Regional Research, and the colleges of Business, Law, and Liberal Arts. Courses in hydraulics and water resources are described in this catalog within the section devoted to the Division of Energy Engineering.

Environmental Engineering and Science
The environmental engineering curriculum has two basic areas, one engineering and the other applied science. This curriculum maintains a heavy emphasis on interdisciplinary research and academic activities with other programs and colleges on campus, including the Institute of Hydraulic Research, the Institute of Agricultural Medicine and Environmental Health, the Institute of Urban and Regional Planning, and the colleges of Business, Law, and Liberal Arts. Coursework and research provide a general program of study or specialization in one of three areas: water quality management, air quality management, or solid waste management. Environmental engineering and science courses are described in the "Division of Energy Engineering" section of the Catalog.

Structural and Geotechnical Engineering and Structural Mechanics and Materials
The structural and geotechnical engineering and structural mechanics and materials curricula may be directed towards design, analysis, research, or a combination of these. Special strengths exist in the areas of time-dependent behavior of reinforced and prestressed concrete structures, optimal design of structural systems, soil behavior, and constitutive theory. Coursework and research in structural analysis, structural design, soil mechanics and foundation, optimal design, and materials are available. Courses in these areas are described in the "Division of Materials Engineering" section of the Catalog.

Transportation
The transportation curriculum includes work in planning, design, construction, and operation of transportation systems and facilities. A cooperative relationship exists with the graduate program in urban transportation offered by the Center for Urban Transportation (see "Urban Transportation"). Transportation courses are described in the "Division of Systems Engineering" section of the Catalog.

Laboratory and other facilities available in the civil and environmental engineering program are described in the "Division of Energy Engineering" and "Division of Materials Engineering" sections of the Catalog.

Master of Science
The Master of Science programs in civil and environmental engineering are designed to permit further concentration in the area or areas of the student's choice. Graduate are placed in advanced technical positions in industry, consulting firms, or government, or they may continue full graduate study. Current and projected demand for M.S. graduates is excellent. In general, the plan of study, with or without thesis, must include a minimum of 30 semester hours credit, with not more than 6 semester hours of credit...
allowed for the thesis. An additional 6
semester hours are required in the
norderns environmental engineering
curriculum.
Each student, with the approval of his or
her adviser, develops a plan of study
which satisfies special requirements of
the curriculum chosen by the student.
All candidates to the degree are
expected to have a minimum grade-point
average near 3.0 and are required to
pass written and oral examinations.

Doctor of Philosophy
The doctoral degree is granted primarily
on the basis of achievement, rather than
on a prescribed course of study.
Requirements as to semester hours of
coursework vary somewhat among the
various areas of specialty. The
candidate will normally need at least
three years of full-time work beyond the
baccalaureate degree, one year of
which is devoted to the preparation of a
dissertation which contributes to
specialization in the field. Some specialty
areas, e.g., qualifying examination is
required during the second semester for
students who have not earned an M.S. in
one of the University of Iowa graduate
programs in engineering.

All doctoral students are required to
pass a written and oral comprehensive
examination prior to formal admission to
candidacy for the degree. The
examination is normally taken when
substantially all of the student’s
coursework has been completed.
The program culminates in a final
examination, in which the candidate
must successfully defend his or her
dissertation.

Doctoral candidates are expected to
maintain a grade-point average of 3.2
throughout the doctoral program.
The program also cooperates in
interdisciplinary doctoral programs with
the program in Applied Mathematical
Sciences, e.g., the “Division of
Mathematical Sciences” section in
“Liberal Arts”.

Admission
Each curriculum of the program is quite
flexible, and students may be admitted
from all disciplines of engineering as
well as the mathematical and basic
sciences.

An applicant for the master’s degree
program is expected to have a
cumulative undergraduate grade-point
average of 2.0 (A=4); usually, 3.0 is
expected. For admission to candidacy
for the doctorate, the minimum grade-
point average is 3.2 based upon
previous graduate work. Applicants
whose grade-point averages are slightly
lower are invited to correspond
regarding admission possibility.

All applicants must meet the general
admission requirements of the Graduate
College (see “Graduate College”).

Financial Aid
A significant number of research
assistships are available on a variety of
research projects, as are a limited
number of teaching assistships and
fellowships. Selection of recipients
usually is based on scholastic
achievement and research interest.

Electrical and Computer
Engineering

Program chair: Robert C. Antonsen
Faculty: Associate professors Robert C. Antonsen, David H.
Chung, Earl D. Erman, Antana Kayral, Karl E.
Goffeney, Richard H. Hall, Deshake M. Reeds, Paul F.
Robinson
Professor emeritus Lawrence A. Mars
Associate professor James D. Schmitt, Herbert E.
Marks

Assistant professor anal of the D. Akon
Assistant professors Steve D. Cohen, Jaya K.
Targov, Frédéric Vioget
Adjunct assistant professor Reuben Delo
Dean of Engineering B.S.P.E., M.S., Ph.D.

Electrical engineering is concerned with the
generation, measurement, transmission, processing, and control of
electrical energy and of information in
the form of electrical signals. The
important role of the digital computer in
these activities is emphasized by the
program title, electrical and computer
engineering.

Graduates of the program are employed in
semiconductor, aerospace, telecommunications, robotics, computers,
and power industries. With the
B.S.E.E. degree, the electrical
engineer is prepared for an engineering
work in design, development,
manufacturing, sales, market analysis,
consulting, field service, and
management. The employment outlook
for the foreseeable future is quite
favorable.

Courses which have been designed
primarily for the electrical and computer
engineering program are identified by
the digit 2 in the third position of the
course number prefix. Course
descriptions are provided in this catalog
within the section devoted to the
Division of Information Engineering.

Undergraduate Program
The undergraduate program leads to a
Bachelor of Science in Electrical
Engineering, with a strong emphasis on
computer engineering. The curriculum
deals with electronics, instrumentation,
control and communication systems, and
computers.

To prepare the student for the electrical
engineering profession, the curriculum
provides a strong background in
languages, computers, computer systems,
electrical-magnetic, communication theory,
electronics, and design, in addition to
the basic engineering core of
mathematics, engineering design,
engineering science, and humanities.

Technical electives and advanced
programs are offered in biomedical
systems, computer systems, electronic
circuits, signal processing, digital and
control systems, applied physics, power,
and solid state devices.

Curriculum
Sophomore Year

First Semester
560.10 Dynamics
224.37 Engineering Calculus III
630.17 Thermodynamics
560.15 Materials Science I
640.11 Introduction to Electrical
640.12 Laboratory

Total
17 a.h.
Second Semester
23M:38 Differential Equations and Linear Algebra 4 s.h.
640:18 Principles of Electronic Instrumentation 4 s.h.
545:30 Digital Systems and Computers 3 s.h.
546:12 Linear Systems Analysis 3 s.h.
Humaniies or social science elective 3 s.h.
Total 17 s.h.

Junior Year
First Semester
29:92 Physics of Waves and Optics 3 s.h.
580:39 Probability and Statistics for Engineering and Physical Sciences 3 s.h.
545:80 Principles of Electrical Engineering Design I 3 s.h.
545:73 Electromagnetic Theory 3 s.h.
545:60 Communication Systems 3 s.h.
*545:91 Professional Seminar 0 s.h.
Total 15 s.h.

Second Semester
29:93 Modern Physics 3 s.h.
545:61 Principles of Electrical Engineering Design II 3 s.h.
546:40 Electronic Circuits 3 s.h.
546:60 Control Systems 3 s.h.
*545:91 Professional Seminar 0 s.h.
Humaniies or social science elective 3 s.h.
Total 16 s.h.

Senior Year
First Semester
545:70 Electrical Engineering Materials and Devices 3 s.h.
546:82 Principles of Electrical Engineering Design III 3 s.h.
*545:91 Professional Seminar 0 s.h.
**Science core elective 3 s.h.
Humaniies or social science elective 3 s.h.
Technical electives 4 s.h.
Total 16 s.h.

Second Semester
545:63 Principles of Electrical Engineering Design IV 3 s.h.
*545:91 Professional Seminar 0 s.h.
**Science core collective 3 s.h.
Humaniies or social science elective 3 s.h.
Technical electives 9 s.h.
Total 18 s.h.

*Professional Seminar must be taken at least once in the junior year and once in the senior year.
**Science core electives:
520:26 Mechanics of Fluids and Transfer Processes 4 s.h.
580:19 Mechanics of Deformable Bodies 3 s.h.
580:37 Engineering Management Science 3 s.h.

Graduate Program
The electrical and computer engineering program offers options leading to the Master of Science and Doctor of Philosophy degrees. Thesis and non-thesis M.S. programs are available, and other may precede Ph.D. studies. Excellence in scholarship and research is stressed through close contact with the faculty, throughout the period of graduate study and through programs tailored to individual requirements. Each graduate student is regarded as an important member of the program whose contributions are highly valued.

Each student selects an advisor, and with the advisor, plans an individual program, with freedom of choice guided by a few broad guidelines imposed by the Graduate College. Each program is unique, and research tools, for example, are not required by the Graduate College or by the program, but are introduced into the program by the student and advisor to the extent that they are appropriate to the student's goals.

The basic program, which is fundamental to electrical and computer engineering, has wide application, and this has resulted in interdisciplinary research in areas such as biomedical engineering, computer systems, and applied mathematics. Graduate students are encouraged to take courses in several interdisciplinary areas.

Opportunities are available for the graduate student to choose his or her own interests and participate in a creative effort. Well-established and funded research laboratories exist in the following areas:

Voves and Materials
Plasma physics, electro-chem, and acoustics, investigations utilize specialized laboratories in both the Engineering Building and Physics Research Building. Typical projects involve nonlinear wave interaction, plasma instabilities, laser optics, acoustic wave behavior, and ultrasonics.

Engineering in Biology and Medicine
Computer-assisted electrophylography, cardiac arrhythmia analysis, automated drug infusion, and image processing and speech recognition utilize a laboratory with its own real-time computer system. Some of these projects involve close collaboration with colleagues in the College of Medicine.

Controls and Systems
In cooperation with outside agencies, several projects applying modern control theory are in progress. These include stability considerations, time delay, and digital implementation. In the controls laboratory, investigation of real-time digital control, confinement system theory, and digital estimation utilize mini- and micro-computers. Other topics include applications of stochastic processes to problems in control and communication systems. Current investigations emphasize estimation, identification, and control for automatic dynamical systems having parameters modeled as jump processes.

Computer Systems
Fault-tolerant subsystem design and reliable system configurations, fault diagnosis, data security, data communications, networks, distributed systems, and self-checking systems are typical project areas.

In cooperation with nearby industry, the program also offers off-campus courses in electrical and computer engineering.
Master of Science
Thesis and nonthesis programs are available. The degree requires at least 30 semester hours of credit in an approved program acceptable to the adviser and the graduate committee. This must include at least 12 semester hours of coursework in electrical and computer engineering, not including courses required for electrical engineering undergraduates, and at least nine semester hours of coursework outside of electrical and computer engineering, ordinarily from mathematics and physics.
With thesis, up to eight semester hours of the 30 semester hours may be research credit.
Without thesis, at least 3 semester hours of 547/598 individual investigations are required in addition to the 12 semester hours in electrical and computer engineering. This independent study is to be a small-scale project completed under the supervision of the student’s program adviser.
The candidate for the master’s degree in electrical and computer engineering must also successfully complete a final examination which is conducted by a committee of at least three faculty members, of which the adviser is chair. One part of the final examination must consist of an oral defense of the thesis, if thesis candidates, or of the materials in 547/598 Individual investigations, for nonthesis candidates.

Doctor of Philosophy
Requirements are:
Balanced in a program adviser and filing of a tentative plan of study with the program during the first year;
At least 72 semester hours of credit in a program acceptable to the adviser and approved by the graduate committee, with at least 45 semester hours of credit earned in formal courses, including 30 semester hours in courses numbered 545;
Successful completion of the Ph.D. qualifying examination;
Successful completion of the Ph.D. comprehensive examination;
Successful completion of a research program; and
Successful completion of a final oral defense of the thesis.

Graduate Admission
The normal requirement for admission to the graduate program is at least a 2.7 grade-point average on all courses in electrical and computer engineering, mathematics, and physics for M.S. students, 3.0 for Ph.D. students. An M.S. student with a grade-point average less than 2.7 but better than 2.3 on courses in electrical and computer engineering, mathematics, and physics may be admitted on probation.
Students with baccalaureate degrees in related areas (e.g., physics, mathematics, and computer sciences) may be admitted. In such cases, additional coursework without graduate credit may be required.
Each application is reviewed on an individual basis. Extenuating circumstances may permit deviations from the normal standards.

Financial Aid
A number of fellowships, traineeships, assistantships, scholarships, and industrial grants are available to graduate students who qualify. These are awarded on a competitive basis.

Engineering
Program chair: George L. Lucas
Faculty, associate professors: E. T. Kuriy, C. E. Johnson, L. R. Andrews, K. B. Chandran
Assistant professor: Charles Stanbridge
Degree offered: B.S.E.
The increasing emphasis on interdisciplinary and transdisciplinary career objectives in engineering emphasizes the desirability of having available a degree program which combines a strong background in engineering fundamentals with the flexibility of choosing a major elective sequence to achieve specific educational goals of individual students. The primary objective of the Bachelor of Science in Engineering program is to provide such an option for students whose goals cannot be achieved within the framework of the designated degree programs.

The objective of the B.S.E. degree program is to provide the opportunity for each student to develop an individually-tailored program. However, a proper balance between breadth and depth must be maintained in order to result in a well-rounded education. To accomplish this, the curriculum contains core courses of sufficient breadth and depth 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 is scheduled for the final three semesters and builds from background acquired in the engineering core courses. In consultation with an advisor, the student’s elective sequence is planned to achieve a coherent program which satisfies the specific objectives of the student. The sequence is selected not later than the fifth semester of study and must be approved by a program review committee. The committee is also responsible for monitoring the progress of all students in the program and offering suggestions and advice as needed.

Curriculum
Sophomore Year
First Semester
22M:37 Engineering Calculus III 4 s.h.
530:16 Thermodynamics I 4 s.h.
540:11 Introduction to Electrical Science 3 s.h.
560:15 Material Science I 3 s.h.
560:10 Dynamics 3 s.h.
Total 17 s.h.

Second Semester
22M:38 Differential Equations and Linear Algebra 4 s.h.
540:12 Linear System Analysis 3 s.h.
550:10 Mechanics of Deformable Bodies 3 s.h.
546:16 Principles of Electronic Instrumentation 4 s.h.
*Humanities or social science elective 3 s.h.
Total 17 s.h.
Industrial and Management Engineering

Program chair: J.M. Lichtiweber

The industrial and management engineer has many opportunities for employment and service in industrial, governmental, research, and public service organizations. Employment opportunities are among the most varied in the engineering field. The industrial and management engineer may hold a staff position as adviser to management, or be in a line-unit participating directly in management decisions. Representative job titles include industrial engineer, systems analyst or engineer, operations research analyst, intern consultant, supervisor, or manager. The industrial and management engineer may be employed by a manufacturing firm, a government agency, or by a service organization such as an airline, bank, hospital, or university.

In general, the industrial and management engineer is concerned with the design, operation, and implementation of systems involving the optimal use of resources—human, material, and financial. The systems involved may range from small subsystems to extremely large systems. In order to accomplish these varying activities, the industrial and management engineer is skilled in mathematics, physical sciences, management, and human relations, as well as in computer systems, economics, optimization, and systems analysis and design. Both the undergraduate program in industrial engineering and graduate program in industrial and management engineering are designed to provide courses in these areas, while offering the student an opportunity to specialize in an area of choice.

Courses which have been designed primarily for students in industrial engineering and management engineering are identified by the digit 6 in the third position of the course number prefix. Most such courses are described in this catalog in the sections devoted to the Division of Systems Engineering (560 numbers) while a few courses pertaining to materials science or processing may be found in the section pertaining to the Division of Materials Engineering (556 numbers).

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 management science, production, operations research, quality control, human engineering, and information systems.

Curriculum

Sophomore Year

First Semester
650:10 Dynamics 3 a.h.
640:11 Introduction to Electrical Science 3 a.h.
650:15 Materials Science I 3 a.h.
560:27 Engineering Management Science 3 a.h.
22M:37 Engineering Calculus III 4 a.h.

Total 16 a.h.

Second Semester
650:12 Linear Systems Analysis 3 a.h.
520:18 Thermodynamics I 4 a.h.
22M:38 Differential Equations and Linear Algebra 4 a.h.
688:70 Materials Science II 3 a.h.
Economics elective 3 a.h.

Total 17 a.h.

Junior Year

First Semester
*311:1 Elementary Psychology 4 a.h.
540:18 Principles of Electronic Instrumentation 4 a.h.
560:21 Principles of Design I 3 a.h.
560:39 Probability and Statistics for Engineering and Physical Sciences 3 a.h.
666:71 Materials Processing I 3 a.h.
Industrial and Management Engineering/ENGINEERING

580:91 Professional Seminar 0 s.h.
Total 17 s.h.

Second Semester
580:22 Principles of Design II 3 s.h.
29:82 Physics of Waves and Optics 3 s.h.
580:91 Professional Seminar 0 s.h.
580:121 Design of Work Methods 3 s.h.
580:140 Operations Research I 3 s.h.
580:155 Human Engineering 3 s.h.
* **Technical elective** 3 s.h.
Total 16 s.h.

Senior Year
First Semester
580:91 Professional Seminar 0 s.h.
580:122 Information Systems Design 3 s.h.
*3:1103 Psychiatry in Management 3 s.h.
**Humanities elective 3 s.h.
**Technical electives 6 s.h.
Total 15 s.h.

Second Semester
580:91 Professional Seminar 1 s.h.
580:124 Operational Systems Design 3 s.h.
580:125 Quality Control, Reliability, and Engineering Statistics 3 s.h.
**Humanities elective (100-level) 3 s.h.
Science core elective 3 s.h.
**Technical elective 3 s.h.
Total 16 s.h.

The economics elective may be selected from:
56:100 Prices, Employment, and Production Theory 3 s.h.
66:100 Microeconomics 3 s.h.
66:111 Labor Economics 3 s.h.
66:172 Managerial Economics 3 s.h.

The science core elective may be selected from:
560:9 Mechanics of Deformable Bodies 3 s.h.
532020 Mechanics of Fluids and Transfer Processes 4 s.h.
29:83 Modern Physics 3 s.h.
A biological science course 3 s.h.

*Strongly recommended social science electives.*

**The humanities and social science electives must be selected to satisfy the humanities and social sciences requirements of the College of Engineering.**

**Technical electives. At least 9 of 12 hours are to be selected from the following list: The last course 23-semester hour is to be chosen with the approval of the academic adviser.**
567:101 Communication in Industry 3 s.h.
561:128 Engineering Administration I 3 s.h.
568:141 Operations Research II 3 s.h.
566:142 Production-Inventory Models 3 s.h.
568:143 Quantitative Investment Analysis 3 s.h.
566:148 Digital Systems Simulation I 3 s.h.
568:157 Advanced Managerial Psychology 3 s.h.
586:146 Advanced Human Engineering 3 s.h.
587:98 Individual Investigations or 587:198 Individual Investigations 3 s.h.

Graduate Program

The goal of the industrial and management engineering graduate program at both the M.S. and Ph.D. levels is to provide a modern, highly flexible curriculum of graduate studies. Each student's course of study will be based on the student's background, career objectives, and sound academic practice. Program faculty have research interests in areas related to engineering management and human factors; operations research, computing, and engineering statistics; materials processing; and transportation.

Student programs emphasizing research or engineering management and human factors may be developed from Division of Systems Engineering courses offered mainly to industrial and management engineering program faculty. M.S. students desiring a more general program may combine these two emphases at the M.S. level, while those desiring some specialization in engineering statistics, computing, or materials processing may accommodate these preferences through the combination of industrial and management engineering program courses and appropriate electives from other programs and departments of the university. Ph.D. programs center either in the areas of operations research and engineering statistics or engineering management and human factors.

Graduate students with an interest in transportation may participate in a program which is jointly administered with the Program in Urban Transportation.

Program faculty will periodically offer evening classes on campus or graduate extension classes off-campus.

Master of Science

The M.S. program requires a minimum of 30 semester hours of course work and research. Students may choose either a thesis or a nonthesis program, although research assistants may be required to write an M.S. thesis as a condition of their support. All students, however, are encouraged to obtain the master's degree with thesis. Students desiring eventual admittance to Ph.D. study are specially advised to select the thesis option. A tentative plan of study for each student is determined through consultation with his or her adviser; the final plan of study is reviewed by the student's examining committee, approved by the industrial and management engineering program chair and by the Graduate College dean.

Entering students in all programs will find some background in computer programming and probability and statistics helpful. Engineering management and human factors students will find elementary psychology and engineering economics useful preparation. Compensating coursework may be required for students with nonengineering backgrounds.

The student is required to maintain a minimum grade-point average of 2.75 on a minimum of 30 semester hours of graduate work to be eligible for the M.S. degree. The nature of the final examination will be specified by the examining committee and may be comprised of both written and oral parts. The examination will explore further the student's course preparation and/or an appropriate individual investigation.
Doctor of Philosophy

Typically, Ph.D. programs in industrial and management engineering contain at least 90 hours of study including research for the dissertation. Part-time Ph.D. study is discouraged. Average is no foreign language requirement.

Admission to degree candidacy will require a minimum grade-point average of 3.25 on all graduate work taken at The University of Iowa and the demonstration of a capacity for individual achievement. Upon completion of the coursework specified by his or her advisor and exam committee, the student will be admitted to the comprehensive examination, which includes both written and oral parts. Part of this examination will usually include the presentation of a dissertation proposal, so that the comprehensive committee can evaluate the student’s academic preparation in the light of the research to be performed. Upon having satisfactorily completing this examination, the student is accepted as a candidate for the Ph.D. and normally has only to complete and defend the dissertation.

Graduate Admission

Students with an M.S. objective may be admitted from accredited baccalaureate curricular engineering discipline or in the mathematical or physical sciences with a minimum grade-point average of 2.5 and/or an acceptable score on the Graduate Record Examination (G.R.E.) Aptitude Test (typically, at least 450 verbal, 600 quantitative). Students may be considered for conditional admission with a 2.3 grade-point average and lesser G.R.E. scores. Students from business of social science programs who have adequate mathematical preparation may also be considered for regular or conditional admission. The student’s conditional status must achieve regular status within two sessions of registration by attaining a grade-point average of at least 2.75 and regular acceptance by the industrial and management engineering graduate program faculty or be dismissed.

Students with a Ph.D. objective may be admitted from accredited baccalaureate or post-baccalaureate curricula in any engineering discipline or the mathematical and physical sciences with a minimum grade-point average of 3.0 and/or an acceptable G.R.E. Score (typically, at least 500 verbal, 700 quantitative). Students may also be admitted from business or social science programs on an individual basis. B.S. degrees are usually first admitted to the M.S. program.

Financial Aid

A number of quarter-time and half-time graduate student teaching and research assistantships are available. Awards are based on the student’s academic record and upon an assessment of the student’s potential contribution to the research and teaching goals of the program. Advanced graduate students may also qualify for higher stipend instructor positions. Students should write to the chair of the industrial and management engineering program for further information.

Mechanical Engineering

Program chair: Venkata C. Patel

Degrees offered: B.S.M.E., M.S., Ph.D.

Mechanical engineering is broadly concerned with energy, including its transformation from one form to another, its transmission, and its utilization. Mechanical engineers conceive, plan, design, and direct the manufacture, distribution, and operation of a wide variety of devices, machines, and systems—including complex machine systems—for energy conversion, environmental control, material processing, transportation, materials handling, and other purposes. They are engaged in all the engineering functions including applied research, creative design, development, testing, production, operation and maintenance, marketing and sales, and management, and are employed throughout all industries.

Courses designed primarily for the mechanical engineering program are identified by the digit 8 in the third position of the course number prefix. Course descriptions are provided in this catalog within the sections devoted to the Division of Energy and Materials Engineering.

Undergraduate Program

The undergraduate program prepares the student for a career in engineering, with an emphasis on the technical areas of thermal energy systems and the conversion of thermal energy to mechanical and electrical energy, mechanical systems and machines, and design and control of these systems. The undergraduate curriculum provides a substantial number of electives in both the technical and the humanities and social science areas. In consultation with his or her advisor, a student can develop capabilities to meet individual goals within the framework of the curriculum. All upper-division students are strongly encouraged to undertake projects of either an experimental or analytical design solution to a current problem.

Curriculum

Sophomore Year

First Semester

224:37 Engineering Calculus III
560:12 Dynamics
561:11 Introduction to Electrical Science
565:15 Materials Science I
620:16 Thermodynamics I
Total 17

Second Semester

224:38 Differential Equations and Linear Algebra
540:12 Linear Systems Analysis
540:18 Principles of Electronic Instrumentation
560:19 Mechanics of Deformable Bodies
4

540:12 Linear Systems Analysis
540:18 Principles of Electronic Instrumentation
560:19 Mechanics of Deformable Bodies
4

561:11 Introduction to Electrical Science
565:15 Materials Science I
620:16 Thermodynamics I
13

540:12 Linear Systems Analysis
540:18 Principles of Electronic Instrumentation
560:19 Mechanics of Deformable Bodies
12

560:19 Mechanics of Deformable Bodies
12
Graduate Program

The mechanical engineering graduate program at both the M.S. and Ph.D. levels is designed to educate students to utilize 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, career objectives, and sound academic practice.

Students pursuing a mechanical engineering program may major in the combination of programs and appropriate electives from other programs and departments of the College of Engineering and the University. Ph.D. student programs may center in any one of these areas, through the choice of appropriate coursework and research topics.

A graduation handbook describing the program policies and requirements in greater detail is available upon request.

Master of Science

Students who have earned a baccalaureate degree in an engineering curriculum or a curriculum in the mathematical or physical sciences with a minimum grade-point average of 3.0 may be eligible for admission to the Master of Science degree program in mechanical engineering.

The M.S. program requires a minimum of 30 semester hours of coursework and research. Students must choose either a thesis or non-thesis program, but the latter must involve at least 8 hours of 600-level courses. To earn the M.S. degree, the student is required to attain a minimum grade-point average of 3.0 on a minimum of 30 semester hours of graduate work and be successful in the final examination administered by the student’s committee.

The requirements for the M.S. degree may be completed within a calendar year. However, students with assistantship duties or other constraints may require more than one and two calendar years to complete the degree.

Doctor of Philosophy

Students who have earned a baccalaureate or post-baccalaureate degree in an engineering curriculum or a curriculum in the mathematical and physical sciences may be admitted as Ph.D. students if they have a minimum undergraduate grade-point average of 3.0 or 4.0, Reference letters, scores on the Graduate Record Examination (GRE) Aptitude Tests, student research interests, previous graduate study grade-point average, and other factors may also be considered in making the decision to admit a student. Students with a Ph.D. objective, who enter with a baccalaureate degree, are first admitted to the M.S. program.

Typically, Ph.D. programs in mechanical engineering require approximately 90 semester hours of credit, including research for the dissertation, beyond the baccalaureate degree. There is no foreign language requirement. Part-time study is discouraged, and students who cannot study full time on-campus will rarely be admitted to the Ph.D. program.

Admission as a Ph.D. student is conditional until the student successfully completes a qualifying examination that is administered by his or her committee during the second semester of studies, after initiating coursework for the Ph.D. degree. For students proceeding with the M.S. degree from the mechanical engineering program at The University of Iowa, the M.S. final examination can be regarded as the Ph.D. qualifying examination. The decision on whether the student’s performance in this examination is adequate for admission as a Ph.D. student shall be made by the student’s committee and the program Ph.D. study is discouraged, and students who cannot study full time on-campus will rarely be admitted, a Ph.D. committee is selected by the student and his or her advisor, subject to their willingness to serve, and approved by the program chair and the graduate dean. The Committee shall include at least five faculty members.
two from outside the program with at least one from outside the College of Engineering. 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. Upon completion of the coursework specified in the plan of study and upon the advisor's recommendation, the student will be admitted to the comprehensive examination given by the student's committee. The comprehensive examination shall be conducted within 24 months from the date of starting coursework for the Ph.D. degree. During this written and oral examination, the student will be examined over all elementary, intermediate, and advanced courses relevant to his or her degree program. The committee will evaluate the general academic standard attained by the student and his or her ability in engineering research. The comprehensive examination will also include the presentation of a dissertation proposal by the student, so the committee can evaluate the student's academic preparation for the proposed research.

Having satisfactorily completed the examination, the student normally has only to complete and defend the dissertation.

Requirements for the Ph.D. degree can generally be completed in two to three years beyond the master's degree.

Financial Aid

Financial support is available to M.S. as well as Ph.D. students, primarily through research and teaching assistantships from the Division of Energy Engineering, the Division of Materials Engineering, the Iowa Institute of Hydraulic Research, and the College of Medicine. These awards are made on a semester, academic year, or calendar year basis. Awards and requirements are competitive and are based upon the student's potential contribution to the research and teaching goals of the program. Students who fulfill their assistantship responsibilities adequately and continue to make satisfactory progress toward their degree objective will receive preference in the awarding of new assistantships. Advanced doctoral students may also qualify for higher-tilted instructor positions. All applications for financial support should be sent directly to the Mechanical Engineering program chair.

Division of Energy Engineering

Chair: Vivanda C. Fisi

Advisors: Claude M. Berry, Keith R. Long

Graduate Professor Emeritus of chemical engineering Harry Rose

Professor Emeritus Joseph W. Jones

Assistant professors Alex C. Crockett, Thomas E. Goeckner, Edward W. Schrader, James L. Schwerf, Theodore F. Smith, Donald L. Spencer, Jean-Clauude Therrien

Assistant professors Harold R. Flayter, Peter K. Kimball, John L. Lucas, Arno Davis

Adjunct assistant professor Arthur Gargan

Takashi Nakai, S. Pimen Vosha

The responsibilities of the Division of Energy Engineering include the development and teaching of courses at all levels, development and maintenance of teaching and research laboratories, and conduct of basic and applied research in the disciplinary fields of fluid, thermal, and environmental engineering. The division's goal is to maintain excellence in its teaching and scholarly activities, while remaining responsive to the changing engineering needs of society and its demands upon the engineering profession.

The applications of the fundamental principles of physical, chemical, fluid, and thermal sciences to the design of engineering components and projects; to the production, distribution, and utilization of water, energy, and materials; and to the protection of the environment; and to the ever-increasing interaction between engineering and health sciences are conveyed to the undergraduate student through a series of integrated courses at various levels. In addition to serving students in all engineering curricula through the core program, the division offers specialized courses for students majoring in biomedical, chemical, civil, and mechanical engineering, and campus-wide general courses highlighting the complex interaction between engineering and other fields of learning concerning problems of energy and environment.

At the graduate level, the division offers courses in thermal sciences, environmental engineering, fluid mechanics, hydraulic engineering, and water resources for students pursing advanced degrees in the civil and environmental engineering and mechanical engineering programs.

The division offers courses and research opportunities in the following major disciplinary areas:

Fluid Mechanics

Dispersion and diffusion of passive and reactive contaminants in rivers and lakes; experimental and theoretical studies of turbulent boundary layers, wakes, jets, and plumes; unsteady turbulent and transitional flows; analytical and numerical solutions of problems in ship hydrodynamics; physiological flow phenomena in cardiovascular and intestinal systems; wind loads on structures; detection and removal of airborne particles; laser and hot-wire anemometry; real-time acquisition and processing of data.

Thermal Sciences

Biological heat transfer; dynamics of aerocoolant suspensions; radiant heat transfer through real gases; radiative properties of rough surfaces; remote heat-dissipation measurements; design, performance, and heat transfer studies of solar-energy collectors and thermal storage systems; heat transfer in energy systems; plasma nonequilibrium; power-plant cooling systems; economics of power production.

Hydraulic Engineering

Design, modeling, and crake testing of intake and outfall structures; river management; thermal discharges into natural water bodies; cooling tower performance studies; sediment transport; formation of ice covers and ice jams; strength of ice; forces on structures.
Water Quality
Mathematical modeling of water quality in streams and lakes; optimal allocation of resources to control water pollution; removal of trace organics in water treatment; kinetic of nitrification in streams; algae stabilization in wastewater treatment; disposal of sludge from water and wastewater treatment; anaerobic treatment of sanitary sludge, biological reduction for the removal of sulfates from ground water; anaerobic treatment of high strength thermal sludge conditioning wastes; pilot scale evaluation of microencroaching for sludge densification.

Water Resources
Economics of water usage; management of reservoirs; stochastic hydrology; systems analysis; watershed modeling; water utilization by waste heat management.

Special Laboratories and Facilities
Undergraduate Instruction
The laboratory for undergraduate instruction in fluid and thermal science is located in the Engineering Building and contains a small wind tunnel; a water table; various air, water, and oil flow devices; and facilities for numerous small-scale experiments which demonstrate the principles of mass, momenta, and energy transfer. More specialized experiments are also performed in the other laboratories of the division and with the facilities of the Iowa Research Hydraulic Laboratory. Experiments in the environmental sciences are performed at the laboratories in the University Water Plant and the P.F. Morgan Sanitary Engineering Laboratory.

Fluids and Hydraulics Laboratory
Since most members of the senior research staff of the Institute of Hydraulic Research hold professional appointments in the Division of Energy Engineering, the teaching and research functions of the division are closely connected with the research and consulting activities of the Institute, particularly in the areas of fluid mechanics, hydraulic engineering, flow instrumentation, water resources, and the effects of thermal sciences related to diffusional and dispersal of waste heat in water.

The Institute houses some of the most modern research facilities in the world including a 300-foot long wave tank, several hydraulic flumes and wind tunnels, a dispersion tank, a wave tank, a special low-temperature flow facility for investigation of flow phenomena, and an environmental hydraulic flume for modeling of atmospheric flows. A new ice flume/towing tank is nearing completion. The Institute is also equipped with two computer-based data acquisition and control systems for on-line recording, storage, and processing of experimental data gathered at various points in the laboratory.

Thermal Engineering Laboratories
Experimental research is conducted in the solar, energy, thermal radiation, turbulence, and heat transfer laboratories in the Engineering Building. Solar energy research has been conducted recently and is being carried out by a central computer facilities, a computer-based data acquisition and control system with direct communication links to the University computer center. Specialized equipment consists of a supercomputer based test stand with provision for simultaneous evaluation of solar collectors, solar energy thermal storage facility, electric and acoustic aerodynamic measurement apparatus, an air plasma facility with spectroscopic diagnostic equipment, a spectral bidirectional reflectometer for radiant property measurements, and two-channel hot-wire and laser anemometers.

Environmental Engineering Laboratories
Research in environmental engineering is conducted in the division's Philip P. Morgan Sanitary Engineering Research Laboratory at the Iowa City Municipal Wastewater Treatment Plant, and in the water plant laboratory at the University Water Treatment Plant.

The Morgan laboratory is devoted to research activities in the wastewater treatment area. It includes a modern water chemistry laboratory and space for bench and pilot studies of the physical, chemical, and biological operations and processes of wastewater treatment. A permanent pilot facility at the Morgan laboratory is a 10,000-gallon aeration tank. Recent research conducted at the Morgan laboratory has included the aerobic treatment of wastes from a variety of sources, including the analysis of urban refuse, the thermal conditioning of sludges, and the processing of grains.

The water plant laboratory is the center of research in the water treatment and natural aquatic systems area. The 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 400,000-gallons-per-day water plant is especially designed to enable the isolation of treatment operations for special study without undue interference with the production and supply of treated water to the University, The Iowa River, which flows through the University campus, and the Coralville Reservoir approximately five miles upstream, serve as "natural" laboratories for the study of water quality and limnological research. The water plant laboratory has been remodeled to accommodate an expanded level of research activity.

Courses
Environmental Engineering
145/155 Thermodynamics
142 Basic principles of classical thermodynamics, including first and second laws, reversibility, entropy, heat, work, cycle performance, and thermodynamic systems and processes. Preface: 13-15. Cost: $15.60. 150/152 Dynamics of Fluid and Transport Processes
4.3+ Laws governing fluid flow and mass transport properties; fluid mechanics and Lagrange flow phenomena; heat and mass transfer; turbulence; measurement of flow properties; includes scheduled laboratory experiments. Preface: 239.07. Enroll by 5th of semester. Enroll in 150 for the first semester, 152 for the second semester. Students majoring in chemical engineering may only.
Special Program
320.00 Cooperative Education Taking Assignment
Mechanical Engineering
3.0 a.
Mechanical engineering students participating in the Cooperative Education Program register in this course during work assignment periods. Registration provides a record of participation in the program on the student’s permanent record card. Prerequisites: admission in the Cooperative Education Program and approval of the student’s advisor.

320.01 Experimental Engineering
4.0 a.
Principles of physical measurement, standards and calibration, evaluation of error, and statistical and economic analysis. Laboratory experience and computer experience in planning experiments. Prerequisite: Junior standing in engineering. Same as 220.90.

321.11 Elementary Bio-Engineering
3.0 b.
Course of basic bioengineering, emphasis on problems in engineering. Prerequisite: 220.12. Same as 851.01.

323.00 Mechanical Engineering Design Project
2.0 c.
Primary effort devoted to completion of a marketable design project. Contractual or 855.99 registration. Prerequisite: Same as 850.02.

General
321.01 Energy in Contemporary Society
3.0 a.
Technical, legal, economic, and social issues of energy production, delivery, and use, emphasis on cross-disciplinary implications of energy systems. Prerequisite: Junior, senior, graduate, or permission of instructor. Same as 410.11, 811.01, 811.11.

321.02 Technology of Environmental Pollution Control
3.0 b.
Principles of geometric and engineering principles in the control of the release of pollutants in the air, water, land and waste and their control, and waste management, including water recovery. Prerequisite: Senior standing in the University.

321.03 Environmental Planning and Assessment
3.0 b.
Fundamentals of the planning and assessment of environmental impacts of man-made systems. Includes a case study. Same as 410.12. Prerequisite: Graduate standing in the University.

321.04 Environmental Toxicology
3.0 b.
Development of principles for the assessment of toxicological and biochemical and ecological effects of modern hazardous materials. Prerequisite: 220.38 or equivalent. Same as 810.12.

321.05 Environmental Economics
3.0 b.
Foundations and applications of environmental economics in science and engineering: the study of alternative natural and man-made systems. Prerequisite: Senior standing in engineering. Same as 910.12.

322.01 Environmental Engineering Design Project
1.0 b.
Projects related to material of environmental systems, to include design, economic and ecological evaluation. Prerequisite: senior standing in engineering. Same as 850.10.

322.02 Environmental Engineering Design Project
1.0 b.
Projects related to material of environmental systems, to include design, economic and ecological evaluation. Prerequisite: senior standing in engineering. Same as 850.10.

322.11 Advanced Numerical Analysis
1.0 a.
Advanced numerical analysis, including finite difference, finite elements, interpolation, extrapolation, numerical integration, convergence, error analysis, solution of equations, optimization techniques, and computer applications related to solving engineering problems. Prerequisites: Same as 220.12 or equivalent. Same as 822.00.

322.12 Advanced Engineering Analysis
1.0 a.
Modelling of engineering problems by mathematical equations, mathematical solution techniques for differential equations, interpretation of mathematical solutions, applications in kinematics, mechanics, electricity, heat transfer, and fluid mechanics. Prerequisites: Same as 220.12 or equivalent. Same as 822.01.

Thermal Sciences and Energy Conversion
322.40 Thermodynamics
1.0 b.
First and second laws of thermodynamics. Applications of thermodynamics to heat transfer, refrigeration, power generation, and environmental and economic aspects of energy use. Prerequisites: Same as 220.12 or 222.12.

322.49 Heat Transfer
1.0 b.
Introduction to the principles of heat transfer by conduction, convection, and radiation. Analysis of common heat transfer problems. Prerequisites: Same as 220.12 or 222.12.

322.143 Intermediate Thermodynamics
1.0 b.
Thermodynamics of fluid and heat transfer processes. Basic principles of thermodynamics; theories of thermodynamics. Applications to thermodynamic properties of pure substances and solutions. Applications in engineering problems. Prerequisite: Same as 220.12 or 222.12.

322.144 Stellar Energy Conversion
1.0 b.
Introduction to thermonuclear physics, plasma, thermonuclear fusion, and related theories of energy transfer. Prerequisite: Same as 220.12 or 222.12.

322.145 Intermediate Heat Transfer
1.0 b.
Analysis of steady and unsteady conduction, forced and natural; convection; surface and porous media heat transfer; mass transfer and chemical reactions. Prerequisites: Same as 222.12.

322.146 Reinforcement Processes
1.0 b.
Application of integral equation and heat transfer principles to biological systems, with particular emphasis on the body's defense against heat transfer. Prerequisite: Same as 222.12.

322.147 Solar Energy Applications
1.0 b.
Solar radiation, atmospheric and earth's surface, and solar cells; measurement, collection, and conversion of solar energy, including solar energy systems design and conversion. Prerequisites: Same as 222.12 and 822.02.

322.148 Solar Energy Applications
1.0 b.
Solar radiation, atmospheric and earth's surface, and solar cells; measurement, collection, and conversion of solar energy, including solar energy systems design and conversion. Prerequisites: Same as 222.12 and 822.02.

322.149 Physics of Games
1.0 b.
Fundamental treatment of kinetic theory of gases, topics include kinetic theory of gases, Boltzmann equation, energy equations, nonequilibrium, waves, hydrodynamic, and hydrodynamic limit. Prerequisites: Same as 222.12 and 822.02.

322.150 Computer Heat Transfer
1.0 b.
Fundamentals of conducting heat transfer, analysis of convective heat transfer, numerical analysis and numerical simulation of turbulent heat transfer. Prerequisite: Same as 222.12 or equivalent.

322.151 Conduction Heat Transfer
1.0 b.
Fundamentals of conducting heat transfer; analysis of convective heat transfer, numerical analysis and numerical simulation of turbulent heat transfer. Prerequisite: Same as 222.12 or equivalent.

322.152 Convection Heat Transfer
1.0 b.
Fundamentals of convective heat transfer; analysis of convective heat transfer, numerical analysis and numerical simulation of turbulent heat transfer. Prerequisite: Same as 222.12 or equivalent.

322.153 Convection Heat Transfer
1.0 b.
Fundamentals of convective heat transfer; analysis of convective heat transfer, numerical analysis and numerical simulation of turbulent heat transfer. Prerequisite: Same as 222.12 or equivalent.

Environmental Sciences
322.162 Principles of Environmental Engineering
1.0 b.
Physical, chemical, and biological principles of water and wastewater systems, air pollution control, and solid waste management. Prerequisite: Senior or graduate standing in engineering.

322.163 Environmental Chemistry
1.0 b.
Principles of general, physical, and inorganic chemistry applied to water and air systems. Prerequisite: Same as 220.12.

322.164 Environmental Laboratory
1.0 b.
Laboratory work in physical, chemical, and biological analysis of water, wastewater, and air samples. Pre- or corequisites: Same as 222.12.

322.166 Environmental Microbiology
1.0 b.
Fundamentals of microbiology with applications to water and wastewater treatment systems. Prerequisite: Same as 222.12.

322.167 Hydrology
1.0 b.
Physical, chemical, and biological characteristics of natural water basins with emphasis on the role of the physical environment as the controlling factor in environmental management. Prerequisite: Same as 222.12.

322.168 Environmental Physiology
1.0 b.
Physical, chemical, and biological characteristics of human and animal systems with emphasis on the role of the physical environment as the controlling factor in environmental management. Prerequisite: Same as 222.12.

322.169 Environmental Engineering Design
1.0 b.
Practical aspects of the design of water and wastewater treatment systems. Prerequisite: Same as 222.12.

322.170 Environmental Decisional Principles and Tools
1.0 b.
Decisional principles and tools for water and wastewater treatment processes. Prerequisite: Same as 222.12.

322.171 Environmental Engineering Design
1.0 b.
Practical aspects of the design of water and wastewater treatment systems. Prerequisite: Same as 222.12.

322.172 Agricultural and Animal Waste Management
1.0 b.
Agricultural and animal waste management, emphasis on agricultural and animal waste management, including the recovery of nutrients from animal wastes. Prerequisite: Senior or graduate standing in engineering.

322.173 Animal Waste and Control Technology
1.0 b.
Animal waste and control technology, emphasis on waste management through culture of waste environments. Prerequisite: Senior or graduate standing in engineering or science.
Division of Information Engineering

Chen, Robert C., Associate Professor.

Seminars, Advanced Topics, and Research

15731 Advanced Water Resource Development 3-4 hr.

Introduction to the professional aspects of mechanical engineering, emphasis on fluid, energy, and power division. Each mechanical engineering student will select a project of interest for their seminar course during their junior year. Prerequisites: consent of instructor.

15798 Individual Investigations 3 hr.

Laboratory investigations, with topics chosen by the student in consultation with the instructor. Prerequisites: Consent of instructor and faculty advisor. Not more than 6 seminar hours may be taken for degree program. Prerequisites: consent of faculty advisor.

15810 Readings in Energy Engineering 3 hr.

For graduate students with considerable majors who desire credit in undergraduate engineering courses. May be repeated. Prerequisite: consent of instructor.

15813 Environmental Engineering Seminar 3 hr.

Discussion of research and recent advances in environmental engineering. Topics include waste, water, and air pollution, safety, and legislation. Prerequisites: senior or graduate standing.

15818 Mechanical Engineering Concepts Seminar 3 hr.

Current topics in fluid mechanics, thermal dynamics, energy conversion, thermodynamics, and materials science and design are presented and discussed by students, faculty and visiting engineers and scientists at weekly meetings. Prerequisites: senior or graduate standing. Same as 550-181.

15797 Contemporary Topics in Energy Engineering 3 hr.

Current topics in fluid, thermal, and environmental sciences and related energy systems. Topics and coverage determined by students and faculty interest. Prerequisites: consent of instructor.

15799 Individual Investigations 3 hr.

Laboratory investigation, computer study, literature review, and design studies are suitable topics. Must be taken the semester abroad. Prerequisites: consent of instructor and faculty advisor. Graduate standing and consent of faculty advisor.

15816 Research Energy Engineering, M.A. Thesis 3 hr.

For candidates for M.A. degree requirements. Prerequisites: consent of faculty advisor.

15826 Advanced Topics in Environmental Sciences 3 hr.

Surface and sub-surface hydrologic systems, environmental toxicity of hazardous and practical significance; environmental science and engineering may be repeated. Prerequisites: consent of instructor.

15797 Advanced Topics in Thermal Sciences 3 hr.

Advanced topics in thermal sciences: energy processes, combustion, heat and mass transfer, and applied numerical techniques. Indian and current literature, supplemented by laboratory and lecture discussions. Prerequisites: consent of instructor.

15797 Advanced Topics in Fluid and Thermal Engineering 3 hr.

Advanced topics in fluid mechanics, heat transfer, and related thermal applications. Prerequisites: experience and background in fluid mechanics, thermal sciences, and heat transfer. Prerequisite: consent of instructor.

15797 Research Energy Engineering, Ph.D. Thesis 3 hr.

For fulfillment of Ph.D. degree requirements. Prerequisites: consent of faculty advisor.
Division of Information Engineering/ENGINEERING 385

microprocessor systems. These include both complete development systems and single-board processors. This laboratory emphasizes real-time applications, controls, and signal processing.

The Electro-optics Laboratory is utilized for demonstrations and graduate research in coherent optics. Typical projects are concerned with the applications of lasers to communications, metrology, signal processing, and visualization of ultrasonic waves. The laboratory is equipped with four low power He-Ne lasers, a variety of optical benches, and associated electronic instrumentation.

The Plasma Physics Laboratory operates in conjunction with the Department of Physics and Astronomy. Experiments are performed in several large, double plasma and pickup-tendon confinement devices. Investigations are carried out on confinement, instabilities, double layers, layer and nonlayer waves, solitons and wave scattering.

Financial Aid
A number of fellowships, traineeships, assistantships, scholarships, and stipends are awarded. This qualified graduate students. They are awarded on a competitive basis.

Courses

Engineering Core

Special Program

540.0000 Iterative Education Training Assignment: Engineering

Electrical Engineering

Introduction to computer-based methods, including the design of computer-based projects. Preparation: programming experience in C or Pascal. Prerequisites: Intro to the computer science freshman. Prerequisites: the student's requirement for the junior year. Prerequisites: admission to the Computer Education Program and approval by the student's academic advisor. Preparation: admission to the Electrical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor.

540.0110 Introduction to Optical Science

540.0210 Linear System Theory

Introduction to the analysis and design of linear time-invariant systems. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: admission to the Biomedical Engineering Program and approval by the student's academic advisor. Preparation: adm
Division of Materials Engineering

The division supports research activity by the faculty and students in the division and assists in the recruitment of qualified graduate students. Research in the division encompasses experimentation in and mathematical modeling of the thermomechanical behavior of materials at the microscale as well as molecular level. Basic study of transport processes with particular emphasis on mechanisms of diffusion and surface phenomena; modern optimization theories as they relate to the analysis and design of complex structural and mechanical systems; failure of materials through experimentation and basic understanding of failure mechanisms; application of the principles of continuum and theoretical mechanics to the analysis of biomedical systems and the design of prosthetic devices; study of the properties of granular media, including powders and soils, and the effect of particle shape on physical properties; and the implementation of laws of behavior of concrete and composite building materials in the design of large structures.

Biomechanics Laboratory

The laboratory is equipped for research in stress analysis and load-bearing associated with biomechanical systems. Equipment includes a photo-elastic bench with 12 load cells, polariscope, photo-elastic oven, fringe multiplier, contour projector, photo-stress meter, and recording equipment.

Chemical Engineering Laboratory

Located in the Chemistry-Botany Building, the laboratory includes pilot-plant equipment for the study of industrial evaporation, distillation, drying, fluid flow, and heat transfer. In addition, there are a microbial nuclear reactor and facilities for bio-materials research and investigation of plastics and other materials. Faculty and graduate research by graduate students include chromatography, analog circuitry, and other instrumentation. A small shop is available for students to use under the supervision of a technician.

Electron Microscope Laboratory

This instructional and research facility is equipped with an NEC EMU-3F electron transmission microscope, a necessary specimen preparation equipment to permit examination of specimens by the use of thin foil and replica microscopy of desired area diffraction. This facility comprises the adjacent facility involving the mechanical behavior of materials. Such phenomena as the following may be studied by use of this tool: techniques of behavior and distribution of dislocations as a result of plastic deformation, selective area micrographs, subgrain boundary formation, fracture damage, electron fractography, and the study of surfaces may be done by use of the replica techniques, and phase transformation may be studied by use of selected area diffraction.

Materials Processing Laboratories

This facility consists of metal casting and welding, metal cutting, and heat treatment and metallurgical laboratories, all equipped for instruction and research involving primarily the liquid and solid states of metallic materials. The laboratories are equipped with such items as melting and heat-treating furnaces, a variety of welding equipment, foundry sand testing and molding equipment, pyrometers, non-destructive testers, machine tools and tool force dynamometers, metal-forming equipment, metallographic specimen-mounting presses and polishes, a variety of metallurgical microscopes, and a darkroom.

Materials Testing Laboratory

This laboratory is equipped for the determination of physical and mechanical properties of a variety of engineering interest, such as metals, polymers, and biomaterials. It includes a compression testing machine, an axial testing machine, and a universal testing machine with mechanical and sophisticated multichannel electronic instrumentation for measuring deformation and stress. It also includes an ATS machine for the investigation of fatigue and fracture of metals. An additional laboratory in the form of a random function generator for the study of fracture is being added. In addition, the laboratory contains a modern creep testing machine, a high-temperature testing machine, and a computer-controlled chamber for contraction of experiments at high temperature. Pulse generator equipment has been acquired more recently for the dynamic response of metals in the high frequency range.

Mechanical Engineering Laboratories

The mechanical engineering laboratories are equipped to give students a wide variety of experience in using modern methods of measurement and analysis, including thermopiles, a variety of strain gauges, photo-electric laboratory, and other conventional instrumentation. Particular areas include study of material behavior with emphasis on the mechanics of dynamic systems and mechanisms of failure under both static and cyclic loading.

Powders and Particles Laboratory

This laboratory is equipped with sampling devices; devices for characterizing bulk properties of powders; various mixers, grinders, and testing equipment; optical microscopes; sieving furnaces; and mounting and polishing equipment. In addition, there is access to a scanning electron microscope Quantimet 720 system, computer center, and specialized engineering and chemistry library facilities and laboratories.

Structural Testing Laboratory

This laboratory is equipped for the determination of physical properties of materials in engineering construction, such as soils, aggregates, concrete, metals, timber, and plastics. Included are a compression testing machine, a universal testing machine, and an axial testing machine, along with mechanical and electronic instrumentation for the
Division of Systems Engineering/ENGINEERING

Instruction and Research

Teaching and research interests of the faculty are centered in areas associated with engineering management and human factors; operations research, computing and engineering statistics; and transportation. Specific research projects recently completed, or ongoing, include the study of constrained optimization problems with economics of scale, the use of data base systems in simulation programming language, extensively studies concerning auditory and visual displays, the development of computerized systems for county equipment and pharmacy cost records, legislative decision-making, and a transit system evaluation package.

Facilities

The Division of Systems Engineering is responsible for development and supervision of the College of Engineering's Computer-Based Education (CBE) Laboratory. This laboratory provides on-line interaction with the University's computer systems via video display and hard copy terminals. The laboratory also contains other commonly used computer accessory equipment, such as keyboards and line printers, as well as video equipment for instructional purposes.

The division also serves as a highly modern human factors laboratory with real-time data acquisition and computational capability.

Course Descriptions

Engineering Core

559.04 Engineering Communicative Skills
2 cr.
Digital computer programming utilizing FORTRAN and other languages, as well as software development techniques with emphasis on engineering applications. Prerequisite: 239I-239.

559.03 Principles of Design I
3 cr.
Principles of graphical design, graphic communication, spatial design, structural design, massing design, space-lot design, programmable models, structural site analysis, project management and computer-aided systems and system variability, emphasis on model construction, application of engineering design, and technical reporting. Prerequisites: 559.02 and 450.01.

559.07 Engineering Management Science
3 cr.
Assessment of methodology, particularly suitable for administration of the engineering function. Includes student orientation, evaluation of technical and strategic alternatives, value of risk, decision-making under uncertainty, and related principles. Prerequisite: 559.303.

559.30 Probability and Statistics for Engineering and Physical Science
3 cr.
Fundamental models, random variables, transformations, and the central limit theorem, normal distribution, aleatoric and epistemic uncertainty, descriptive statistic, and the normal approximation, tests of goodness of fit. Prerequisite: 239A-239. Corequisite: 239.05.

General

559.00 Cooperative Education Training Assignment:

Industrial Engineering
6 cr.
Industrial engineering students participating in the Cooperative Education Program register in this course during work assignment periods. Registration provides a record of participation in the program on the student's permanent record card. Prerequisite: admission to the Cooperative Education Program and completion of at least 24 hours of college courses.

307.01 Communication Industry
3 cr.
Introduction to communication methods within groups of people, from group to large organizations, from organization to society, and from society to world industry through various channels, conducted as seminar in group study with responsibility assumed by students, position in group interaction, and feedback from each group project. Four hours lecture by individual teacher and 2-3 hours per week by group report. Prerequisite: senior standing.

559.317B Communicating Technical Information
3 cr.
Discussion of and application of principles of effective technical writing, including the structure and usage of the English language; techniques of drafting and the preparation of technical reports, including basic technical fundamentals. Prerequisite: senior standing.

Design and Engineering Management

559.121 Design of Work Methods
3 cr.
Principles of analysis and design in manufacturing, including human factors in productive systems, techniques of job analysis, and principles of labor and management; an emphasis on engineering applications. Prerequisite: 559.121. Corequisite: 559.132 in graduate standing

559.122 Information System Design
3 cr.
Structure and design of information-based management information systems: concepts of computer hardware and software for information management and utilization; the role of computers in the organizational structure; data collection, processing, and display; data base management; output and input devices; and communication in the systems; closure systems. Offered for 4 credits. Prerequisites: 450.01 and 559.121 or graduate standing.

559.126 Information System Management
3 cr.
Projects involving analysis, measurement, design, and evaluation of new and existing systems in an industrial or service organization; emphasis on cost analysis of information systems. Prerequisites: 559.121 and 559.122.

559.143 Quantitative Analysis
3 cr.
Projects involving analysis, measurement, design, and evaluation of new and existing systems in an industrial or service organization; emphasis on cost analysis of information systems. Prerequisites: 559.121 and 559.122.

559.146 Engineering Administration
1 cr.
Studies in engineering management, methods of project management, engineering efforts, nature of the engineering profession, offered as experimental dissertation. Prerequisite: 559.127.

559.217 Software Systems for Management Science
3 cr.
Design and implementation of computer-based systems for the control and administration and engineering problems, principles and practices in the development of various software systems, applications of data base systems, use of data structure software, current topics in the field. Offered during summer sessions for seniors. Prerequisites: 559.121 or consent of instructor.

559.219 Engineering Administration II
2 cr.
Continuation of 559.146 for engineering majors. Offered as experimental dissertation. Prerequisite: 559.129.

Engineering and Applied Statistics

559.132 Quality Control, Reliability, and Engineering Statistics
3 cr.
Data control charts, sampling inspection and acceptance sampling, design-related randomness, and hypothesis tests for continuous and discrete data. Offered during summer sessions. Prerequisite: 559.303.

559.311 Statistical Techniques and Analysis of Variance
3 cr.
Factorial designs, multiple regression, analysis of variance, and multiple comparison procedures, advanced analysis of variance. Prerequisites: 559.211. Offered as experimental dissertation.

559.321 Regression Analysis
3 cr.
Analysis of multiple linear regression models, residual analysis, variance, and covariance. Offered as experimental dissertation. Prerequisites: 559.211.

559.361 Quality Control
3 cr.
Design of experiments, sampling inspection and acceptance sampling, design-related randomness, and hypothesis tests for continuous and discrete data. Offered during summer sessions. Prerequisite: 559.303.

Operations Research

559.143 Operations Research I
3 cr.
Operations research and applications, with emphasis on deterministic models, linear programming, queueing, and decision analysis. Offered during summer sessions. Prerequisites: 559.211 and 559.219.

559.145 Operations Research II
4 cr.
Operations research and applications with emphasis on integer programming, network models, machine scheduling, and decision analysis. Offered during summer sessions. Prerequisites: 559.211 and 559.219.

559.149 Integer Programming
3 cr.
Linear programming models and analysis applied to the construction of integer models and the interpretation of optimum integer solutions. Topics include discrete optimization modeling, integer programming, conformable discrete optimization, construction of integer programming models, and applications. Offered during fall sessions. Prerequisite: 559.219.

559.310 Mathematical Programming
3 cr.
Mathematical programming, theory, algorithms and applications for constrained and unconstrained

Human Factors

281-155 Human Engineering 2.0h
Design of man-machine systems and development of effective work environment by applying principles of systems, human factors, and ergonomics. Emphasis on sensory and psychomotor performance, decision making, learning and training, communication, stress and fatigue. Use of psychology, mathematics, and engineering principles. Usually offered spring semester. Offered Fall, Spring.

281-160 Psychology in Management 2.0h
Application of psychological principles to human relations and supervision; effects of motivation, leadership, communication, group dynamics, ethics, and other topics. Usually offered spring semester. Offered Fall, Spring.

281-165 General Experimental Psychology 2.0h
Introduction to the experimental methods as a basis for understanding psychological phenomena. Usually offered Fall semester. Offered Fall semester.

281-183 Applied Human Engineering 2.0h
Classroom and laboratory introduction to human factors engineering. Offered in departmental rotation. Prerequisite: 281-155.

281-185 Human Factors 2.0h
Classroom and laboratory introduction to human factors engineering. Offered in departmental rotation. Prerequisite: 281-155.

Transportation

583-726 Transportation Engineering 2.0h
History of transportation, evaluation, and control of services, travel survey, planning and design, new technologies, operating-limit strategies, economic evaluation of transportation alternatives and road locations. Offered Fall semester. Prerequisite: 583-155.

583-747 Sustainable System Design 2.0h
Quantitative and graphic means of providing long-term, sustainable solutions to large-scale, complex engineering problems, including both social and environmental aspects. Emphasis on teamwork. Prerequisite: 583-155. Corequisite: 583-250.

583-751 Transportation System Analysis 2.0h
Transportation systems management and traffic engineering, intersection design, development of traffic network models, and discrete allocation, route in urban areas, highway and transportation planning. Prerequisites: 583-155 and 583-157. Corequisite: 583-74 or consent of instructor.

583-752 Urban Transportation Planning 2.0h
Application of city planning procedures and traffic engineering techniques in the generation or modification of transportation systems. Basic characteristics, land use compatibility, transportation planning methods, trip generation, definition and implementation models. Offered Fall semester. Prerequisite: consent of instructor.

Seminars, Advanced Topics, Research

583-791 Professional Seminar 2.0h
Professional seminar for undergraduate and graduate students in industrial engineering. Open to seniors with approval of the instructor. Prerequisite: 583-155.

583-793 Advanced Topics, Research 2.0h
Advanced study in systems engineering. Other topics based on student interest. Prerequisite: 583-155. Corequisite: 583-155.

583-795 advanced Topics, Research 2.0h
Advanced study in systems engineering. Other topics based on student interest. Prerequisite: 583-155. Corequisite: 583-155.

583-796 Advanced Topics, Research 2.0h
Advanced study in systems engineering. Other topics based on student interest. Prerequisite: 583-155. Corequisite: 583-155.

583-797 Advanced Topics, Research 2.0h
Advanced study in systems engineering. Other topics based on student interest. Prerequisite: 583-155. Corequisite: 583-155.

583-799 B.S. Research 2.0h
Research at the senior's level, primarily for the B.S. degree in industrial and management engineering. Prerequisite: 583-798.
The University of Iowa has been a leading center of advanced study for three-quarters of a century. Preeminently, one-fourth of its enrollment is in the Graduate College. This unusually high ratio reflects the breadth of the University's graduate programs and resources, the strength of a graduate faculty with a long tradition of personal and professional concern for students, and the opportunities afforded graduate students for involvement, recognition, and support.

The Graduate College is responsible for the review and approval of proposals for new graduate programs and for the periodic survey and evaluation of existing programs. Through its administration of scholarships, fellowships, and research funds, the Graduate College encourages research and strengthening of departments. It clarifies extensive assistance to individual faculty members in finding the resources necessary for research projects. The Graduate College works with the other colleges of the University and with departments in the formulation of policies concerning selection, supervision, and support of graduate students.

The faculty of the Graduate College comprises all university faculty members in the ranks of assistant professor, associate professor, and professor. A 15-member Graduate Council election and by the graduate faculty and the Graduate Student Senate, forms 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 Arts in Teaching (M.A.T.), Master of Fine Arts (M.F.A.), Educational Specialist (Ed.S.), Master of Social Work (M.S.W.), Doctor of Philosophy (Ph.D.), and Doctor of Musical Arts (D.M.A.) degrees. The college currently confers degrees in the following major fields:

- Accounting—M.A.
- Afro-American Studies—M.A.
- American Studies—M.A.*, Ph.D.
- Anatomy—M.S., Ph.D.
- Anthropology—M.A.*, Ph.D.
- Applied Mathematical Science—Ph.D.
- Art—M.A., M.F.A.
- Art History—M.A.*, Ph.D.
- Asian Civilization—M.A.
- Astronomy—M.S.
- Biochemistry—M.S., Ph.D.
- Biology—M.S.
- Botany—M.S.*, Ph.D.
- Business Administration—M.A.*, M.B.A.*, Ph.D.
- Business Education—M.A.*, Ph.D.
- Chemical and Materials Engineering—M.S., Ph.D.
- Chemical Physics—M.S., Ph.D.
- Chemistry—M.S.*, Ph.D.
- Civil and Environmental Engineering—M.S.*, Ph.D.
- Classics—M.A.*, Ph.D.
- Community Dentistry—M.S.
- Comparative Law—M.C.L. *
- Comparative Literature—M.A.*, Ph.D.
- Computer Science—M.S.*, Ph.D.
- Criminal Justice and Corrections—M.A.
- Dental Hygiene—M.S.
- Dramatic Art—M.A.*, M.F.A., Ph.D.
- Economics—M.A.*, Ph.D.
- Education—M.A.*, M.A.T.*, Ed.S.*, Ph.D.
- Electrical and Computer Engineering—M.S., Ph.D.
- Endodontics—M.S.
Representatives are elected annually from each department of the University having 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 Graduate College.

Rules and Regulations of the Graduate College

The Academic Program

Section I. Admission to the Graduate College

A. Application Procedure

All students seeking to register for the first time in the Graduate College of The University of Iowa must secure a formal admission statement from the director of admissions. Applicants may obtain the proper forms from the 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 deadlines prior to the term in which admission is expected. Admission applications must arrive no later than July 15 for fall semester enrollment, December 1 for spring semester enrollment or May 1 for summer session enrollment. These are general Graduate College deadlines. Individual departments may establish earlier admission cutoff dates.

B. Graduate Record Examination

All applicants prior to consideration for admission should take the Graduate Record Examination (GRE) or, for applicants to graduate programs in business administration, the Graduate Management Admission Test (GMAT). Applicants for whom admission data are complete with the exception of scores on the GRE or the GMAT, may, depending on departmental policy, be admitted if they meet all other requirements. The GRE or the GMAT must be taken within one session after registration. The test is given several times a year at test centers established under the direction of Educational Testing Service, Princeton, New Jersey. The judgment of acceptable levels of performance on this test and its weight in the decision on admission of a student is left to the departments. Some departments in fields where GRE Advanced Tests are available may require these in addition to the Aptitude Test. Inquiries about the Aptitude Test may be directed to University Evaluation and Examination Service; and inquiries about the requirements of the Advanced Test should be addressed to the executive of the department in which the applicant is interested.

C. English for Foreign Students

Prior to consideration for admission, foreign student applicants whose native language is other than English must take and pass TOEFL (Test of English as a Foreign Language), unless they have received a degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand. The examination is given at various times of the year and in many centers throughout the world. Inquiries should be directed to the Director, TOEFL, Educational Testing Service, Princeton, New Jersey 08542. Foreign students transferring from unitheld degree programs of other universities in the United States who have not taken this examination, or who have received a grade lower than the minimum established by the Graduate College dean, must take the TOEFL examination and receive a passing grade prior to consideration for admission.

The Graduate College will advise the department of those students merely passing the TOEFL test. Individual department may require such students to take and pass a course at The University of Iowa or any other accredited college designated especially for foreign students.

D. Early Admission

A student who is within four semester hours of having satisfied all the requirements for his 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, which must be earned through work successfully completed at The University of Iowa. (See "Section X. Master's Degrees," and "Section XII. Doctoral Degrees.")

F. Declaration of Major and Degree

Every applicant for admission must indicate on the application form the department or degree program or certificate program of his or her major interest and the degree, certificate, or professional objective or he or she intends to pursue. The only exceptions to this regulation are the limited number of applicants registered as "special students." (See definition of "special status" in next paragraph.) Changes in the major or degree status may be made in the course of a student's graduate study with the approval of the department to which the transfer is proposed. To initiate such action the student must file a change of major or degree status in the Office of Admissions.

G. Status upon Admission

All students upon admission fall into one of the following categories:

1. Regular—Students who have met the minimum requirements for admission and who have been accepted by a department or interdepartmental degree program, for work leading to a graduate degree or certificate or professional improvement.

2. Conditional—Students who are interested in working toward a graduate degree or certificate but who are required by a department to demonstrate their ability to do satisfactory graduate work before being admitted to regular status. To be accepted as a conditional status, the student must be recommended by a department, which will assume responsibility for advising him or her. (See minimum grade-point requirements. "Section IV.4.7") The student on conditional status must achieve regular status within two sessions after registration in the Graduate College by achieving a grade-point average of at least 2.00 (3.00 for doctoral students).
and acceptance by the major department, or be dismissed.

3. Special—Students in receipt of a valid bachelor's degree who wish to register for no more than two courses at a time and who are not planning to become candidates for a graduate degree or certificate. These students, relatively few in number, must obtain special permission to register from the director of graduate studies. Special graduate students are not eligible for a graduate degree or for a certificate in a certificate program.

4. Summer Session—Students with a valid bachelor's degree and at least a 2.0 grade-point average may register for only one summer session without being accepted by a department or college. (See “Section II” below.) The deadline for application for admission to the summer session will be determined by the director of the summer session and the director of admissions. Before admission to any summer session, attending another summer session, the student must file an application and be admitted to regular or conditional status.

H. Minimum Requirements for Admission

Graduates of any college or university accredited by regional accrediting associations may be admitted to the Graduate College if their academic records meet the required standards. At the master’s level, a minimum grade-point average of 2.3 is required for admission to conditional status. A minimum of 2.5 is required for admission to regular status. The grade-point average is computed only of grad courses if the student has completed at least 12 graduate hours. If the student has not completed 12 graduate hours, the grade-point average is computed only upon the undergraduate and graduate work completed. In cases in which a student applying for admission has a grade-point average below the minimum required, but has a Graduate Record Examination score above a point to be designated by the Graduate College dean, the score along with the application will be forwarded to the department concerned for examination and decision.

Students applying for admission to a doctoral program with 12 or more semester hours of graduate work must meet a minimum grade-point average of 3.0 on the graduate work. For students with less than 12 semester hours of graduate work, a minimum of 2.7 is required on the entire record of collegiate work. Departments, or committees in charge of interdepartmental degree programs, may, and often do, set higher minimum admission requirements than those set forth above for the University as a whole. Information concerning departmental or program requirements may be obtained directly from the office of the department concerned.

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 closely related departments, such permission must have prior approval of the department of appointment, then of the college or appointment, the department in which the study is to be pursued, and the Graduate Council.

Section II. Registration

A. Standard Schedule

Students registered in the Graduate College may register for no more than 15 semester hours credit in graduate courses. In a schedule of mixed graduate and undergraduate courses, two hours of undergraduate credit will be substituted to one hour of graduate credit, with registration limited to a total of 18 semester hours. The applies to the calculation of academic load only. Graduate credit is not given for courses numbered under 100. The maximum for the eight-week summer session is eight semester hours, or nine semester hours if two or more semester hours of undergraduate work are included.

The maximum semester hour registration for work scheduled outside of the regular eight-week summer session will be arranged on a basis proportionate to that stated above with the approval of the Graduate College dean. Nine semester hours is the regular semester constitutes full-time registration. (Fees are required to carry at least nine semester hours during a semester as a condition of their appointments.) One-quarter-time and one-third-time appointees are permitted to register for the maximum 15 semester hours per semester and eight semester hours during the eight-week summer session.

B. Courses Not Included in Total Registration

In addition to the regular schedule, a graduate student may register for courses printed in the Schedule of Courses as carrying zero semester hour 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 instructor and the approval of the dean of the Graduate College.

D. Reduced Schedules for Teaching and Research Assistants and Other Appointees

1. One-half-dose 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. Three-fourths 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 four semester hours during the eight-week summer session.

5. Full-time appointees, including full-time instructors, may register for not
more than six semester hours during a semester or three semester hours during the eight-week summer session.

E. Retroactive Registration
No form of retroactive registration is permitted.

F. Registration for Part of a Session
A graduate student may register at any time during the semester or the 6-week summer session for not more than 1 semester hour of credit for each of the remaining weeks of classes (not including the examination period) in the term. The total registration may not exceed the 15 semester hours permitted for a semester and the 8 semester hours permitted for the 6-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 the Graduate College, registration for work done off campus is 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 or research program.
4. Classes taught off campus by members of the graduate faculty (see "Section X.D" and "Section X.L.C") for minimum semester hours required on campus for the master's and doctor's degree.
5. Residence graduate credit from other Iowa Regent's University (see "Section V.B.").
6. As many as nine semester hours of graduate work taken at the Quad-Cities Graduate Center from faculty other than faculty of the Iowa Regents' Universities, provided the work is acceptable to the student's major department for the specified degree.

Extramural registration does not count toward residence credit in the following circumstances:
1. Coursework transferred from another institution; and
2. Correspondence courses.

H. Extramural Fees and Privileges
Students registered for extramural courses for graduate residence credit must apply for admission to regular status (see "Section I.G") and pay established fees. (See "Section X.L.K" for special fees applicable to post-comprehensive registration, which should not be confused with extramural registration for residence credit.)

1. Correspondence Courses
Correspondence study credits do not count as residence credits. Graduate correspondence study credit earned prior to a student's acceptance as a degree candidate at The University of Iowa may be counted toward an advanced degree upon the approval of the appropriate college or department. Not more than nine semester hours of graduate correspondence work can be accepted for credit for an advanced degree. Such credit must be acceptable for the student's Plan of Study and must be earned after the student has attained graduate status. A student enrolled for residence credit 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 200 and above in each department. Courses open to and carrying credit for graduate and undergraduate students are numbered from 100 to 198. Courses below 100 are not accepted for graduate credit.

K. Auditing of Courses
In special cases, and upon the recommendation of the instructor and the adviser, the dean of the Graduate College may grant permission to graduate students to audit courses for no credit. Auditing is permitted only to a student who is currently registered.

L. Dropping of Courses
All graduate students who drop courses after the deadline date established by the dean of the Graduate College for each session and published by the registrar shall receive the grade of F unless the entire registration is canceled. This regulation may be waived only by the Graduate College dean on the recommendation of the Student Health director or the Student Counseling Service. If a student cancels her or his registration after the deadline date, he or she must obtain permission from the dean of the Graduate College before he or she is permitted to register.

Section III. Traveling Scholar Program

A. Purpose
The program, under the auspices of the Committee on Institutional Cooperation representing 11 universities in the Midwest, enables a doctoral student to take advantage of special resources available on another campus but not available on his or her own campus: special course offerings, research opportunities, unique laboratories, and library collections.

B. Procedure
1. A CIC Traveling Scholar first must be recommended by his or her own graduate adviser, who will approach an appropriate faculty member at the possible host institution in regard to a visiting arrangement.
2. After agreement by the student's adviser and the faculty member at the host institution, graduate dean at both institutions will be fully informed by the adviser and have the power to approve or disapprove.
3. A CIC Traveling Scholar will be registered at the home university, and fees will be collected and kept by that institution. The student registers for 000-800 CIC Scholar at The University of Iowa.
4. Credit for the work taken will be recorded at the home university.
5. Those desiring additional information should write the office of the Graduate College.
C. Conditions
OIC Traveling Scholars will normally be limited to one semester or three quarters at any one university. Each university reserves the right to accept or reject any student who wishes to study under its auspices.

Section IV. Academic Standing, Probation, and Dismissal
A. Master's, Specialist, Certificate, or other Undergraduate Students

A student on regular status shall 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 The University, his or her grade-point average remains below 2.50, he or she shall be denied permission to register; otherwise, the student shall be restored to good standing.

B. Doctoral Students

A doctoral student on regular status shall be placed on probation if, after completing eight 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 The University, his or her cumulative grade-point average falls below the required level, the student shall be dropped from the program and denied permission to register unless he or she applies and is accepted for another degree or certificate program. If the continuation of probation is met, the student is returned to good standing.

C. Restriction on Students on Probation

A student on probation shall not be permitted to take comprehensive or final examinations leading to any degree or certificate, nor may the student receive any graduate degree or certificate.

D. Departmental regulations and Dissemination of Information

In addition to the above University-wide regulations, each department may establish further requirements which determine the individual student's standing with regard to probation and dismissal. To this end, each department or program shall compile a written list of standards and procedures for work in that area. These documents shall be on file in each departmental office and the office of the Graduate College dean. Copies are to be made available to all students in the departmental office, and departments shall make all reasonable efforts to inform students. Subsequent changes in standards or procedures shall be communicated by the department to each student and the Graduate College dean. Whenever departments revise standards for a given program, new regulations will not apply retroactively to the disadvantage of those already in the program. In addition to notifying students that they are subject to the rules of the Graduate College as set forth in the Manual of Rules and Regulations, any standards established by the department more stringent than the general Graduate College requirements shall be stated. Information shall be provided outlining required course evaluations in the various departmental programs of study, examination procedures, and other formal evaluations, departmental policies with regard to awarding and renewing assistantships, time limits on programs of study, departmental probation policies, departmental grade-point requirements, requirements for changing from one degree program to another within the department, especially from the master's to the doctorate, departmental probation and dismissal policies and procedures (see "E." following), and such other matters as are appropriate. The nature of the departmental advisory system shall be explained to the incoming students.

E. Academic Progress, Departmental Probation, and Dismissal Procedures

If a student is failing to meet departmental standards, the department shall warn the student of this fact in writing. The notification shall specify in what subject(s) the student is failing to meet the standards. The student shall be provided a reasonable amount of time to meet the standards prior to departmental dismissal. If, in its monitoring of a student's progress, the department finds that a student is in violation of the student's academic policies, the student shall be warned in writing of the violation.

Section V. Credits
A. Transfer of Graduate Credit

Graduate work at other institutions will be evaluated for transfer credit at the discretion of the Graduate College. The graduate college will judge whether the course work is compatible with the student's program of study. A student who wishes to transfer credit from another institution should consult with his or her advisor and the program director to determine the acceptability of the work. The approval of the department head and the dean of the Graduate College is necessary before credit is granted.
B. Residence Transfer Credit

After admission to the Graduate College, residence graduate credit from another Iowa State University may be counted as residence credit at this institution, provided such work is acceptable to the student’s major department on the basis of the department’s determination of its applicability toward the degree. (See “Section X.D.” and “X.L.G.” for minimum semester hours required on campus for the master’s and doctor’s degrees.)

C. Reduction in Credit

For courses or seminars in independent study, thesis, and research, an instructor may report less credit than the number of semester hours for which a student is registered.

D. Graduate Credit for Veterans Credit may be granted for studies pursued in war and military situations under such regulations as may be formulated by the national educational agencies and under such adaptation of standing rules as the Graduate Council may authorize from time to time to meet group or individual situations. The value of such credit in satisfying requirements for a degree will be determined by the major department with the approval of the dean.

E. Cancellation of Registration

Students Entering Military Service

1. Students who leave within the first six weeks of the semester receive no credit.

2. Students who leave within the period of seven to nine weeks receive one-half credit.

3. Students who leave within the period of 10 to 12 weeks receive two-thirds credit.

4. Grade reports for the one-half and two-thirds credit periods: (a) Instructor report grades only as satisfactory or unsatisfactory; (b) credit is to be assigned on the basis of total registration minus thesis and seminar; (c) courses are to be counted toward specific degree requirements only after the student returns and then only with the department’s approval.

5. Students who complete the textbook week receive full credit.

6. Grade reports for the full credit period: (a) grades are to be reported only at the end of the semester; (b) credit is to be reported in specific courses.

7. In each instance the instructor reports the student’s credit, grade, and date of cancellation. No credit is granted unless the student’s work is satisfactory at the time of leaving.

8. The amount of credit in thesis and research registration is to be reported to the registrar by individual instructors on the above basis except that less or no credit may be assigned.

Section VI. Marking System

A. Marks Carrying Advanced Degree Credit

These are A, B, C, and S—satisfactory.

B. Marks Carrying No Credit for Advanced Degrees

These are D—poor, F—failed, I—incomplete, W—withdrawn without disrupting, R—registered, and U—unsatisfactory.

C. Audit

If assigned when a student registered for no credit attends as an auditor throughout the course, if the student fails to meet the instructor’s requirements for class attendance. W is assigned.

D. Incomplete

The grade of I is to be used only when a student’s work during a session cannot be completed because of illness, accident, or other circumstances beyond the student’s control. In registrations for thesis, research, or independent study, the S/U grade may be supplied. (See next paragraph, “E.”) Students who receive the mark of I must remove that mark within the first session of registration after the closing date of the session for which it is given, or one grade becomes F, except that students with I’s from the spring semester are exempt from completing the course during the succeeding summer session.

Specific deadlines for the submission of student work to the faculty and for the faculty’s report on I grades to the registrar will be set by the Graduate College dean for each session and printed in the academic calendar.

Courses may not be repeated to remove incompletes. Removal of an I is accomplished only through completion of the specific work for which the mark is given.


Grades of S and U may be used for registrations in thesis, research, readings, independent study, and special projects. S—satisfactory means that the student receives credit for the work; U—unsatisfactory means that he or she receives no credit. Neither S nor U is used in computing grade-point averages. At a later date, the instructor may change the S to a letter grade. In addition, departments may ask the Graduate College dean for permission to use grades of S and U as described above for courses which, because of their special or experimental nature, are judged to be more appropriate for such grading. In general, these requests may be granted for no more than one session and must be reviewed by the Graduate Council before being granted for longer periods. The type of grading system to be used in the above cases should always be mutually understood by the instructor and student.

F. Grades of S and U

S and U may be used for courses taken by a graduate student outside the major department or interdepartmental program provided that the instructor of the course and the student’s departmental adviser approve the arrangement. Arrangements for S/U grading in these courses are accomplished by filing a card with appropriate signatures in the Registrar’s Office at the time of registration, or in the last day of the third week of a semester or the third day of the second week of a summer session. No changes from letter grades to S/U grades or vice-versa will be allowed after these dates.

It is not the policy of the Graduate College to abandon the traditional letter grades described by serial number; however, in certain exceptional instances, departments having several areas of concentrations involving widely differing types of effort may request the permission of the Graduate Council to allow students majoring in one area to
Section VII. Graduate Appointments
A. Scholarships
Scholarships are competitive and are awarded on merit.

1. Eligibility for graduate scholarships and fellowships will include: (a) registration in the Graduate College; (b) cumulative grade-point average of at least 3.0; (c) a GRE score or a GMAT score above a point to be designated by the Graduate College dean; (d) a satisfactory rate of progress in completing the program for the degree. Preselection will be given to candidates for the doctoral degree.

2. Recommendations for graduate scholarships may be made to the Graduate College by the appropriate department executive, director, or dean. A graduate scholarship may be awarded to a student who holds an assistantship. The amount of scholarship for the academic year may vary, but in no case exceed the comprehensive fee assessed. Scholarships will be credited to the student’s University account.

B. Graduate College Fellowships
Fellowships are awarded by the Graduate College upon recommendation by departments to students with outstanding academic records. Fellowships must be registered as full-time students. The primary purpose of the awards is to permit students to pursue the master’s degree in accordance with the Graduate College. Though the award will be established by the Graduate College dean in consultation with the Graduate Council.

C. Faculty Research Assistantships
Faculty research assistantships are awarded to qualified graduate students and serve two purposes: (a) to provide research service to professorial members of the department staff; and (b) to provide graduate students with training in research. Graduate appointments in research assistantships are for the academic year, though appointments may be made for other periods of time by special arrangement. Stipends will vary with the qualifications of the appointees and the amount of work performed. Faculty research assistants appointed by the Graduate College pay their own fees. Graduate appointments beginning in September are usually made by the Graduate College; unless appointments may be made at any time. Fellowships are awarded by the Graduate College. Students may be appointed by recommendation of the department.

D. Graduate Assistantships
These assistantships serve two purposes: (a) to provide an additional stipend to graduate students who show exceptional promise as teachers and who are selected for graduate assistantships. No appointments are made by the dean of the appropriate college on recommendation of the department.

E. Eligibility for Scholarships, Fellowships, and Research Assistantships
Scholars, fellows, and faculty research assistantships on the Graduate College must be registered as regular students in good standing. The program may be terminated when registration and/or student status is terminated. In the instance of a student who is not reappointed, an appointment shall be awarded to the Graduate College by the director of admissions.

F. Dismissal of Assistants
A uniform policy defining procedures to be followed in the dismissal of assistants has been approved by the Board of Regents. Copies of this policy are available in the office of the Graduate College dean.

G. Research Assistantships and Postdoctoral Fellowships
These provide for independent research. Appointment is made through the Office of the Vice President for Academic Affairs.

H. Credit
Credit is allowed in research or research service for which the student receives payment as a graduate or a faculty research assistant.

I. Loans
Graduate students requiring financial assistance may apply for loans at the Office of Student Financial Aid. See “Scholarships and Loans” section of the catalog.

J. Other Forms of Support
Many departments offer financial assistance in the form of teachships, part-time employment on research programs, or part-time teaching. Inquiries should be addressed directly to the major department.

Section VIII. Advanced Programs Offered in the Graduate College
The subject areas in which the Graduate College offers degree programs are listed under “Advanced Degree Programs” in the forepart of the “Graduate College” section of the catalog.

Section IX. General Requirements for Advanced Degrees
A. Application for Degree
The student must file an application for an anticipated degree with the registrar not later than 10 weeks after the start of the semester or one week after the start of the summer session in which the degree will be conferred. The student must have the application signed by his or her advisor. Failure to file the application by the date will result in
postponement of graduation to a subsequent session.

B. Enrollment in Final Session
The student must be registered for the session in which the degree is to be conferred, except as noted in the paragraph. Students who must register for the session in which the degree is to be conferred but who are away from the campus during the session may meet this requirement by registering for independent study, research, or thesis according to the practice in the various departments. Doctoral candidates who have completed all work except the final examination may register for the postcomprehensive registration described in "Section XII.K." If such registration is appropriate, Master's candidates who have completed all work except the final examination may register for 000.001 Master's Final Registration at a fee equivalent to the postcomprehensive registration. If such registration is appropriate, registration in a correspondence course will not satisfy this requirement.

Students completing all requirements (including the final examination and thesis deposits) for a graduate degree while enrolled in the Independent Study Session may receive their degrees in the following semester without additional registration.

Section X. Master's Degrees
A. Kinds of Degrees
Master's programs requiring a minimum of 30 semester hours lead to the Master of Arts degree, Master of Science degree, Master of Business Administration degree, Master of Arts in Teaching degree, and such other master's degrees as are approved by the graduate faculty.

B. Plan of Study
The student for a master's degree must file a plan of study approved by the adviser and the departmental executive with the Graduate College within the session in which the degree is to be granted and by a date to be established by the Graduate College dean. The plan shall meet the requirements for the degree approved by the graduate faculty. (See also "Section IV.D. Departmental Regulations and Dissemination of Information").

C. Major and Related 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 University of Iowa. After admission to the Graduate College, various forms of extramural registration may qualify toward fulfillment of this 24-hour residence requirement (see "Section II. G. Extramural Registration") in addition to regular in-campus registration. However, at least 8 semester hours on campus are required, except for those departmental programs which ensure sufficient interactions between the students and the graduate faculty and have received approval from the Graduate Council and the dean of the Graduate College for reduction of this on-campus requirement.

E. Reduction of Old Credits
Credits for a master's degree dating back more than 10 years from the session in which the degree is to be conferred are not counted toward fulfillment of degree requirements. This rule may be waived by the dean in cases affected by emergency service.

F. Limit on Law, Medical, or Dental Courses
Work taken by a student in the College of Dentistry, Law, or Medicine while enrolled as a candidate for a professional degree may be counted on a graduate program of study leading to a master's degree. Provided such courses were taken after the student had earned a baccalaureate degree, the work accepted from the professional college must be directly related to the student's major field of study in the graduate college and be approved as a part of the plan of study by the student's adviser and the major department. Work completed while registered for a professional degree in law, medicine, or dentistry will be counted as part of the residence requirement for nondoctoral degrees in the Graduate College only when the student is registered in an appropriate joint degree program.

G. Two Master's Degrees
The granting by this University of two master's degrees simultaneously or in succession requires the satisfaction of all requirements for each degree separately, including two theses, where a thesis is required for each, and two examinations, with a minimum combined total of 60 semester hours of graduate credit.

H. Master's Degree with Thesis
Not more than eight semester hours of credit for thesis preparation shall be counted in satisfying the 30-hour minimum requirement. This thesis may be a scholarly study or an artistic production.

The copy of the thesis, in typed manuscript or print, must be presented to the Graduate College for a check of normal characteristics not later than four weeks before the graduation in which the degree is to be conferred. (See Graduate College publication, Thesis Manual.) After approval by the Graduate College and by the thesis committee, a final copy of the thesis must be deposited with the Graduate College not later than 10 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 Section XXI. C. Examinations.)

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 is due in
The examination 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. The examination committee must be from the department. Upon recommendation of the major department, the dean may appoint additional qualified persons (not necessarily members of the graduate faculty) to serve as voting members of the examination committee, and, at his or her discretion, the Graduate College dean may add a member to the committee.

Section XI. Two-Year Degrees
A. Master of Fine Arts Degree
This degree is awarded for creative work in the visual arts, dramatic art, music, and literature. It is designed for students preparing themselves professionally in such fields as painting, design, mural decoration, sculpture, playwriting, acting, producing, stage craft, musical performance, composition, instrumentation, poetry, fiction, and translation. Central to the program, the thesis may consist of a novel, a painting, a play, a musical composition, 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 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 80 semester hours of graduate credit.

For other requirements, see: "Section X.B. Plan of Study;" "C. Major and Related Placements;" "E. Reduction of Old Credits;" "F. Master's Degree with Thesis;" "J. Final Examination;" and "K. Examining Committee."

Section XII. Doctor's Degrees
A. Charter of Degrees
The University awards two doctorates, the Doctor of Philosophy and the Doctor of Musical Arts. The doctorate is the highest degree awarded by the University upon those students who give evidence of knowledge and competence in the professional practice of social work by meeting the following requirements:

1. A minimum of 24 semester hours in residence at The University of Iowa.
2. A minimum of 80 semester hours in graduate social work, including a research requirement; and
3. A final comprehensive examination, written or oral or both, covering all work for the degree.

The requirement of 80 semester hours may be interpreted to mean that a student may write the thesis of the school that he or she has accomplished, in the junior or senior undergraduate years, the clear equivalent of part or parts of the graduate curriculum in social work, may be permitted, upon recommendation of the faculty of the school, to qualify for the M.S.W. degree on less than 80 semester hours. In no case may a student qualify for the degree on less than 48 credit hours in graduate social work study.

The curriculum is organized into four general areas: social work practice, human growth and behavior, the social services, and research. During the two-year graduate program, classwork is combined with field practice in social agencies or social work departments. Since classwork and field practice are arranged sequentially, students can enter the School of Social Work only in August.

For other requirements, see: "Section X.B. Plan of Study;" "E. Reduction of Old Credits;" "F. Limit on Law, Medical, or Dental Courses;" "H. Master's Degree with Thesis;" and "K. Examining Committee."

Section XIII. Doctor's Degrees
A. Charter of Degrees
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 special 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 rather than on the accumulation of semester hours of credit; however, the candidate is expected to have completed at least three years of residence in a graduate college. At least part of this residence must be spent in full-time involvement in one's discipline, at this University, beyond the first 24 semester hours of graduate work; this requirement can be met either by (1) enrollment as a full-time student (9 semester hours minimum) in each of two semesters or (2) enrollment for a minimum of 6 semester hours in each of three semesters during which the student holds at least a one-third-time assistantship certified by the department as contributing to the student's desired accomplishment. (For purposes of record and assessment of fee, student registration should reflect accurately the amount and kind of work undertaken in the Graduate College. All doctoral programs, including acceptable transfer credit, will contain a minimum of 72 semester hours of graduate work.)

D. Plan of Study
The development of a plan of study at the doctoral level is the special responsibility of the student working together with his or her adviser. A formal plan of study must accompany the departmental request to the Graduate College for permission to conduct the comprehensive examination. The plan will provide a listing of all graduate courses taken which add toward the degree and a listing of courses in progress or to be completed after the comprehensive examination.

E. Ad Hoc Interdisciplinary Programs
A student may prepare a proposal for an interdisciplinary course of study, including the plan for the comprehensive examination, under the sponsorship of at least three faculty members and the department most directly concerned, which shall be designated as the sponsoring department. Final approval of such individual programs is granted by the Graduate College dean, who may add members to the student's supervising committee from other closely related departmental faculties. The degree will be awarded in the interdisciplinary field stipulated in the approved program and, parenthetically, the name of the sponsoring department.

F. Reduction of Old Credits
Courses taken ten or more years prior to the comprehensive examination will be evaluated by the major department in order to determine the amount of credit that shall be allowed for such work. Evaluation of such old credits will be reported to the Graduate College by the departmental executive at the time of submission of the plan of study.

G. Limit on Professional Courses
Work taken by a student in the colleges of Dentistry, Law, or Medicine while enrolled for a professional degree may be credited toward a graduate program leading to a doctoral degree if it is taken after the student has earned a bachelor's degree. The work accepted from the professional colleges must be directly related to the student's major field of study in the Graduate College, and the plan of study must be approved by the student's adviser and the major department. Work completed while registered for a professional degree in law, medicine, or dentistry will not be counted as part of the one academic year which must be spent in residence as a doctoral student on the campus of this University.

H. Joint Program for Master's and Doctoral Degrees
Those students who expect to continue their training through the doctoral degree may file a joint program for the master's and doctor's degree. The master's examination may be combined with the comprehensive examination for the doctorate for these candidates. The examining committee will file separate reports of its actions on the final examination for the master's degree and for the comprehensive examination. Upon recommendation of the department and approval of the Graduate College dean, students who are well qualified by previous training may submit a plan of study that leads directly to the doctoral degree without earning the master's degree as an intervening part.

I. Requirement in Foreign Languages
There is no general Graduate College requirement in foreign languages. Those departments which require competence in one or more foreign languages establish standards as to the extent and level of competence, as well as methods of testing. Specific requirements will be found in the departmental statements of standards and procedures (see "Section IV.D"). Departmental executive officers are responsible for reporting completion of requirements to the registrar for entry on the student's record.

Specifications of departmental requirements in foreign languages are filed in the Graduate College office and may be changed upon the initiative of the department.

J. Preliminary Examination
The candidate must pass a comprehensive examination, consisting of written or oral parts or both, for the degree of master of arts or master of science in the discipline of the major department. Admission to this comprehensive examination is granted upon the recommendation of the major department. The plan of the examination is the plan of study, and the approval of the dean of the Graduate College. A student must be registered in the University at the time of the comprehensive examination, which must be passed not later than the session prior to the session of graduation. This examination, administered only on campus, is intended to be an inclusive evaluation of the candidate's mastery of the major and related fields of study, including the topics on which an examination in which competence has been certified.

The comprehensive examination is not a deferred qualifying examination. It is intended to evaluate the candidate's mastery of his or her subject at or near the end of his or her formal preparation
and prior to the completion of the dissertation. The comprehensive examination and the final examination, which is concerned chiefly with defense of the thesis and related subjects, are the two principal examinations for the doctoral degree.

The comprehensive examination will be evaluated by a convened meeting of the committee and reported as satisfactory, satisfactory with reservations, or unsatisfactory to the Graduate College office within 14 days after the completion of the examination. Two "unsatisfactory" votes will make the committee report unsatisfactory.

In the event of a report with two or more votes of "satisfactory with reservations," the exact stipulations of the committee should be recorded in the report form. If the stipulations involve further examination in a particular area of study, the statement should be specific in defining the area, including any additional courses or other procedures, and in specifying the time and method of satisfying the stipulation. The candidate will not be admitted to the final oral examination until such stipulations have been satisfied. The executive of the major department should promptly send a written report to the Graduate College giving date of removal of "reservations."

In case of a report of unsatisfactory on a comprehensive examination, the committee may grant the candidate permission to present himself or herself for reexamination no sooner than four months after the first examination. The examination may be repeated only once, at the option of the department.

K. Postcomprehensive Registration

The student is required to register each semester after passing the comprehensive examination until the degree is awarded. If a student fails to register, he or she may not be retested to candidacy until he or she has submitted an application which has been approved by his or her advisor, the departmental executive, and the Graduate College dean.

All registrations should accurately reflect the amount and type of work undertaken, the use of University facilities, and the nature and volume of collaboration with the faculty. The student should register for the course, research, and thesis necessary to complete the plan of study.

When the registrations required for the plan of study have been completed, the student may meet the continuing registration requirement by registering for 000:000 Post Ph.D. Comprehensive Registration and paying a special minimum tuition for any semester in which the department (i.e., department chair or director of graduate studies) and the student's advisor determine that the student is neither obtaining significant use of University facilities (except library privileges) nor participating in consultation with the faculty. It is understood that no registration for a summer session is required when the student makes no use of University resources, unless the student is taking a degree at the end of that session.

L. Dissertation for the Doctoral Degree

A copy of the dissertation must be presented at the offices of the Graduate College not later than four weeks before the graduation date at which the degree is to be conferred and two copies deposited there in final form 10 days before graduation.

Preparation concerning the dissertation copy shall be promulgated by the dean of the Graduate College. Dissertations will be microfilmed and thus made available on a permanent basis. An abstract of the dissertation, not to exceed 600 words of print, is to be deposited with the dissertation. The abstract must be approved and signed by the dissertation advisor. The abstract is published in the Journal of Dissertation Abstracts International. One copy of the dissertation is bound and indexed at the University Library.

If the dissertation is in some nonprofit (e.g., painting, static, performance in music) the librarian in charge of theses will help the student and faculty advisor work out an appropriate method of preparing the accompanying manuscript. If such help is needed. Once the manuscript is accepted, it is treated the same as any other.

Written dissertations shall be made available to all members of the examining committee not later than two weeks before the date of the examination.

M. Dissertation Fee

A nonrefundable dissertation fee is charged each candidate to cover the cost of the above processing of the dissertation and abstract.

N. Final Examination

The work for the degree culminates in a final oral examination administered on campus. This examination should include: (1) a critical inquiry into the purposes, methods and results of the investigation—not a mere recapitulation of the procedures followed; (2) intensive questioning on areas of knowledge constituting the immediate content of the investigation.

The final examination may not be held until the next session after the student passes the comprehensive examination nor until the first check of the dissertation by the Graduate College; however, a student must take the final examination no later than five years after passing the comprehensive examination. Failure to meet this deadline will result in a reexamination of the student to determine his or her qualifications for taking the final examination. The procedures to be followed are the same as those for the comprehensive examination. (See "K.B.J. Comprehensive Examination.")

Final examinations for the doctorate are open to the public. Members of the faculty of the Graduate College are especially invited to attend and, subject to the approval of the chair, to participate in the examination.

The report of the final examination is due in the Graduate College office not later than 48 hours after the date of the examination. The final examination will be evaluated by the unsatisfactory, 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 dean upon recommendation of the major department, except that departments may, at the dean's permission to replace one of the five members of the graduate faculty by a recognized scholar of professorial rank from another academic institution. A member of the graduate faculty from outside the major department is required in those cases where a related field outside the major department is included in the comprehensive examination. For the final examination one member of the committee must be a member of the graduate faculty from outside the major department.

Upon recommendation of the major department, the Graduate College dean may appoint additional qualified persons (not necessarily members of the graduate faculty) to serve as voting members of the examining committees. A voting member may be added at the discretion of the Graduate College dean.

Section XIII. Exceptions

Petitions to waive these regulations may be made for appropriate and justifiable reasons on behalf of any graduate student through the departmental executive to the dean and the Graduate Council.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>030100610</td>
<td>Final Ph.D. Comprehensive Registration</td>
<td>0.00</td>
</tr>
<tr>
<td>030100611</td>
<td>Master's Final Registration</td>
<td>0.00</td>
</tr>
<tr>
<td>030100610</td>
<td>GC Scholar</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Program Objectives

The overriding 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. Thorough familiarity with the substance of legal principles and with the operation of legal institutions are important components, but the University of Iowa program places an equal emphasis on the development of fundamental lawyering skills and an appreciation of the roles of law and lawyers in society. A unifying feature of the program is the conviction that these objectives can be achieved best by an educational program that cultivates active, student-oriented participation in the learning process and creates regular opportunities for individuals and small groups to confront challenging problems that genuinely are interested in each student’s professional development. The University of Iowa College of Law centers upon (its) graduates the degree of Juris Doctor (J.D.). To be eligible for the degree, a student must satisfy the residence requirement, receive credit for 90 semester hours of coursework, take and complete all required courses, achieve a cumulative weighted average of 85, 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 are devoting substantially all of their time to educational pursuits. For this reason, students are expected to pursue their law degree on a full-time basis. This policy coincides with the accreditation standards of the American Bar Association, and the Association of American Law Schools.

In extraordinary circumstances, it may be possible for a student to enroll for less than 12 hours per semester. A student who believes 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 summer session) or late August (at the beginning of the fall semester). Most students elect to enter law school in the fall and expect to graduate in May of their third year of study; these students also may attend summer school at any point during their careers.

An entering class of up to 45 students is allowed to enter law school in May of the year for which they applied. They complete nearly a full semester of work in the first eleven-week summer session, and if they remain in the accelerated program, they can graduate nine months earlier than would otherwise be possible by attending summer school in each subsequent summer. Thus, the accelerated student who begins law school in the summer of 1980 may graduate in August 1982. Students who begin school in the accelerated program, however, need not continue to accelerate their graduation.

Both the accelerated and regular programs consist of 90 semester hours of required and elective courses. All entering students are expected to take all courses designated as first-year courses and may not register for different courses or fewer hours without permission of the dean. No student may take more than 10 hours per semester or 13 hours in summer school 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 upperclass and three to four first-year courses are offered. Nonaccelerated students may attend either or both periods. Accelerated 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 legal research and writing instruction into a substantive course taught by regular, full-time faculty. The program's purposes include giving careful attention to development of each student's skills in legal research and writing, encouraging student participation in class discussion, and providing additional opportunities for student-faculty interaction.

In the fall semester (or summer for accelerated students), the entering class is divided into sections of approximately 55 students. In the spring (or fall for accelerated students), each section contains approximately 15 students. The subject matter of the small-section courses has varied from year to year and has included virtually every course in the first-year curriculum.

In the small-section course, students are given a series of assignments, each with a different educational objective. Faculty members provide extensive critiques of students' papers and discuss the assigned problem both in class and in individual conferences.

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 coursework in 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, and in litigation. Few courses are required in the second and third years, but all students must take 91:364 Torts A or 91:365 Torts B, and 91:210 Appellate Advocacy I is the second year, and before graduating all must take 91:233 Constitutional Law II and an upper-class small-section course. The latter requirement assures students the opportunity to enroll in a small class (usually 30 students) in a variety of subject matters, in conjunction with the substantive material, students complete writing projects designed to teach legal drafting skills.

Also, in order to graduate, each student must earn five writing credits. The student earns two of the credits automatically by satisfactory completion of 91:210 Appellate Advocacy I and the upper-class small-section. He or she can earn the remaining three credits through any combination of courses and activities that carry writing credits, including seminar papers, independent research papers, Law Review, Journal of Corporation Law, 91:10-411 Client Counseling I, 91:10-421 Memor Court Board, and 91:211 Appellate Advocacy II.

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's Legal Clinic Program, which offers for both kinds of opportunities for students to apply their theoretical knowledge to real cases under the supervision of faculty members and other attorneys.

Students in the Legal Aid Clinic represent indigent clients in several eastern Iowa communities in a wide range of civil and criminal cases. Students in the Prisoner Assistance Clinic represent inmates in Iowa correctional institutions in both habeas corpus and civil cases. Both Legal Aid and Prisoner Assistance interns participate fully in interviewing, fact investigation, negotiation, and courtroom proceedings.

Students in the Clerkship Program act as law clerks to trial court judges. As such, they observe court proceedings and draft orders, opinions, and jury instructions.

Finally, students in the Legislative Internship Program are assigned to work as legal assistants to state legislators and to work in other aspects of the legislative process.

In addition to those programs carrying academic credit, the College of Law participates each summer in the County Attorney Internship Program, through which students work as paid employees for county attorneys throughout the state.

A student may earn up to a total of 15 semester hours of credit in the clinic program, although students taking courses in other schools or colleges of the University may receive no more than 20 hours of credit for each course plus clinic.

Joint Law and Graduate Degree Program
The College of Law has developed a program with a number of departments of the Graduate College of The University of Iowa under which students can simultaneously pursue degrees in both colleges. Under this program, if a student takes a course which is relevant to both degrees, the course can, within limitations, be counted toward the hour requirements of both and reduce the time required to obtain the two degrees separately. Hopefully, too, the joint-degree student will contribute to one discipline the insights and experience gained in the other. Graduate departments with which joint degree programs have already been initiated include Accounting, American Studies, Anthropology, Business Administration, Computer Science, Counseling Education, Economics, Education, Educational Administration, English, Finance, Journalism, History, Library Science, Philosophy, Political Science, Sociology, Social Work, and Urban and Regional Planning.

Further information about joint degree programs is available from the dean of the College of Law.

A two-year program leading to a commission in the United States Army is available to students entering the College of Law. Information about this program may be obtained from the UI Department of Army Military Science.

For information about programs leading to a commission in the United States Air Force, write to the UI Department of Aerospace Military Studies.
Student Life
There are currently eleven student organizations at the college; three co-curricular programs, each managed by students, offer specific skills training; and two student-produced scholarly journals.

The college operates a placement office to assist students and alumni in securing suitable summer and/or permanent employment.

Financial Aid
A comprehensive financial aid program at the college attempts to assist all students who need funds in order to permit them to attend school full-time. However, since financial aid funds are inadequate to cover 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. Applicants are urged to contact the financial aid office at the college for further information about types of aid available.

Admission Requirements
Applicants for admission must present a baccalaureate degree from an approved college or university prior to entering the College of Law. The services which the graduate of the College of Law may be called upon to perform are so varied and the possible fields of endeavor so broad and diverse that the college prescribes no uniform undergraduate program for those planning to enter law school. With the assistance of faculty advisers, each student should develop an individualized program which explores and develops that student’s particular intellectual interests. There are three basic objectives, however, as determined by a committee of the Association of American Law Schools which everyone thinking of law school should keep in mind in planning an undergraduate course of study: education for comprehension and expression in words; education for greater understanding of human institutions and values; and education for greater power in thinking. That committee strongly emphasizes that undergraduate education of students for a full life through liberal education is far more important than education directed too pointedly toward later professional training and practice. Students are urged not to sacrifice the broader perspective for detailed specialization.

Application Procedures
Applications may be obtained by writing to the Director of Admissions, College of Law, University of Iowa, Iowa City, Iowa 52242. Each student must file his or her application for admission by March 1 preceding the summer or fall semester in which he or she wishes to enter. Applications should be sent to the Director of Admissions, Calvin Hall, The University of Iowa. An evaluation fee of $10 must accompany each application unless the applicant’s baccalaureate degree was/is to be conferred by The University of Iowa. This fee is nonrefundable except for residents of Iowa who are denied admission. Students from disadvantaged backgrounds who cannot afford this fee should apply for its waiver.

The applicant is responsible for submitting an official transcript from each college or university he or she has attended to the Law School Data Assembly Service (LSAC), Box 2401, Newtown, PA 18940. The College of Law must receive the applicant’s LSDAS report prior to the March 1 deadline for submission of applications.

In your LSDAS registration packet, you will find Law School Application Matching Form. To preserve your rights to privacy, ETS has agreed not to release your LSDAS report to any school that does not furnish ETS your Law School Application Matching Form.

The University of Iowa cannot process your application without your Law School Application Matching Form. Therefore, please attach or enclose the form with your application. If you do not, the processing of your application will be delayed until the form is received.

Low School Admission Test
Each applicant for admission must take the Law School Admission Test (LSAT) administered by the Educational Testing Service and the Law School Admission Committee, 500 W. 12th Street, Princeton, NJ 08540, and have his or her test score forwarded to the College of Law, along with the LSDAS report. The test is given several times each year and may be taken at numerous locations in the United States and abroad. Applicants are urged to take the test during the fall preceding the fall or summer semester for which they are making application.

The last test that will be considered by the admissions committee for the summer or fall first-year class is the test given in February. However, 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 testers must have their applications on file with The University of Iowa prior to the March 1 deadline. Foreign student applicants whose native language is other than English must take the Test of English as a Foreign Language (TOEFL), which is administered by the Educational Testing Service, Princeton, New Jersey 08540.

Deposit
Applicants accepted prior to April 1 are required to make an advance nonrefundable deposit of $50 by April 1. Applicants accepted subsequent to April 1 must make the deposit within two weeks after being notified of favorable action on their applications. In either event, the deposit need not be made if a financial aid application is under active consideration. However, the deposit must be made within two weeks after action is taken on the financial aid application. For those whose college is not a member of the Association of American Law Schools, the president of the college has granted the applicant two weeks after the notice date to make the deposit. If the student does not make the deposit within the time specified, the college may rescind its offer of admission.

Evaluation Process
For a more detailed description of the admissions evaluation process, please consult the college’s bulletin which is...
91431 Economic Inequality of Business  an.
91432 Essay Methods and Law  an.
91433 Free Speech  an.
91434 Education Law Seminar  an.
91441 Environmental Law Seminar  an.
91443 International Economic Relations Seminar  an.
91444 International Transactions  an.
91445 Problems in International Law and Policy  an.
91446 Problems in Juvenile Justice Seminar  an.
91447 Policy-Oriented Jurisprudence Seminar  an.
91452 Land Use Planning Seminar  an.
91453 Legal History  an.
91455 American Legal History Seminar  an.
91457 Partnership Planning  an.
91458 Law in Literature  an.
91459 The Police  an.
91464 Selected Problems in Public Employment Law  an.
91465 Problems in Public Law  an.
91475 Public Employee Collective Bargaining  an.
91476 Sex Roles in Law and Society Seminar  an.
91480 Native American Law Seminar  an.
91484 United States Supreme Court  an.
The College of Medicine, as an integral part of the University, contributes to the educational programs of several thousand students, not only those in the health colleges of Dentistry, Medicine, Nursing, and Pharmacy but also in the life sciences areas of the College of Liberal Arts and the health-related programs of other colleges. Additionally, it serves health professionals from throughout the Midwest who take part in a year-round program of continuing medical education, in which several thousand practicing physicians update their knowledge and skills through “refreshers,” 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 resource.

Beyond its academic responsibilities as the only college in Iowa offering work toward the M.D. degree, the College of Medicine is concerned with broad public issues of distribution and organization of health care services. Its faculty members advise and serve on state and regional health planning councils, health boards, and various health agencies; some faculty also take part in the University’s Health Services Research Center.

The College of Medicine is responsible for the associated medical sciences programs of education for physician’s assistants, medical technologists, physical therapists, and nuclear medicine technologists.

The medical and associated medical science students have several opportunities to gain first-hand experience in physicians’ offices and community hospitals. For medical graduates, the college offers family practice residency programs at 16 community hospitals in eight cities throughout the state. The college promotes and sponsors experimental programs that demonstrate methods of organizing health services at the local level. Accredited by the American Medical Association and the Association of American Medical Colleges, the University or Iowa College of Medicine meets the requirements of all state licensing boards. Its diploma admits the holder to all privileges granted to graduates of all medical colleges before such boards. All other professional programs administered by the College of Medicine are accredited by their respective accrediting bodies.

Faculty
Nearly all College of Medicine faculty members are full-time; their work in practice and research being part-of-not apart from—their work in teaching. Many have earned national and international honors.

Graduate Programs
The college offers programs leading to graduate degrees through the Doctor of Philosophy in anatomy, biochemistry, microbiology, hospital and health administration, nutrition, pharmacology (including toxicology), physiology and biophysics, preventive medicine and environmental health, and radiation biology. In addition, graduate degree programs leading to the Master of Science degree are offered in ophthalmology, otolaryngology, pathology, and physical therapy.

Medical Scientist Training Program
An interdisciplinary M.D.-Ph.D. program offered jointly by the College of Medicine and the Graduate College, the Medical Scientist Training Program provides 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 in some field may do so by gaining admission both to the College of
Medicine and to the Graduate College,
and making 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
facilities 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
dermatology, neurobiology, and
immunology, in which degrees are not offered but in which the student can
place emphasis by appropriate selection of a study program. Further information
can be obtained from the associate
dean for academic affairs.

The following centers are subdivisions of the College of Medicine:

**Clinical Research Center**

The Clinical Research Center provides the setting for patient-related research of
a disease process. Studies of normal human physiology, biochemistry, and
physiology are also conducted. It is an
important resource of the college, fully
financed by federal monies, enabling all
faculty members to conduct carefully
supervised studies that cannot be
accomplished with equal precision with
existing beds of the affiliated hospitals.

**Cardiovascular Research Center**

The Cardiovascular Research Center coordinates the research and training programs related to cardiovascular
diseases and encompasses the
following federally funded programs: the
Regulation of the Peripheral Circulation,
the Specialized Center of Research in
Atherosclerosis, the Lipid Research
Clinic, three 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 on
top of the Medical Research Center.

**Toxicology Center**

The Iowa Center for Toxicology and
Biochemical Pharmacology is an integral
part of the Department of Pharmacology.
In broad terms, the research is directed to the
disposition of drugs and poisons,
their metabolic rate, the biological
adaptation to drugs, and studies of the
action at the molecular and cellular
level.

**Diabetes Center**

The Diabetes Center coordinates
research and training programs related to
diabetes and associated endocrinological diseases. It was
established in 1978 with support from
the Institute of Arthritis, Metabolism and
Diseases.

**Center for Research on
Psychological Disorders of Children**

This center draws from the expertise in the
departments of Psychiatry, Pediatrics, Neurology, Speech
Pathology, Psychology, and Sociology. It is
centered in the Division of Child
Psychiatry.

**Conor Center**

A Cancer Center was established in 1980 to coordinate the efforts of the
faculty and staff of the University in
research, education, and demonstration
programs related to all aspects of
cancer.

**Educational and Patient
Care Facilities**

Courses are taught in the basic
sciences and Medical Laboratories
buildings.

A new Health Sciences Library is at the
core of the medical campus.

Students acquire clinical experience in the
1,063-bed University Hospitals and Clinics complex, in the adjacent 333-bed
Veterans Administration Medical Center,
and in a score of affiliated hospitals and
ambulatory care centers throughout the
state.

College of Medicine and College of
Dentistry faculty members comprise the 355-member clinical staff for University
Hospitals and Clinics, whose 120 clinical
services are directed by the heads of the
Department of Physical Medicine and
Rehabilitation in those colleges. These
faculty members also provide instruction for the 100-plus resident physicians and
nurses who comprise the house staff of
University Hospitals and Clinics, which
provide facilities for teaching all
major medical specialties, for
residencies in all such specialties, and
for fellowships in a number of
subspecialties.

University Hospitals and Clinics serves as a
tertiary care center for the state of
Iowa and portions of adjoining
states, with most patients being referred for
care and treatment not readily available
in their home communities. For details
about University Hospitals and Clinics,
Veterans Administration Medical Center,
and related academic and health service
units, see "The University of Iowa Health
Center" section of this Catalog.

**Research Facilities**

A number of facilities are administered
through the dean's office in support of
the research and teaching endeavors of the
faculty of the College of Medicine.

The animal care facility arranges for the
purchase, maintenance, and record-
keeping of a wide variety of animals.
The bioengineering facility provides specialized electronic design, construction, and repair services.

The learning resources unit is composed of educators and media specialists who serve the faculty, students, and administration. The unit provides educational consultation, in-lab and student-centered education research endeavors, and conducts teacher education activities.

The medical instrument facility designs and fabricates scientific equipment, providing precision machine services.

The medical graphics, photography, and television sections offer consultation, design, and production services in many various art forms. The spectrum of composition is greatly expanded by Genographics, a computer-generated graphics system.

The P3 facility meets federal guidelines for recombinant DNA research requiring P3 containment. It can be used also for research on other biohazardous human or animal pathogens.

Studies on prion structures are conducted in a facility containing ultracentrifugation, amino acid analyzers, and protein sequencer equipment.

Doctor of Medicine

The University of Iowa College of Medicine accepts 175 freshman students each year into its four-year course of study leading to the degree, Doctor of Medicine (M.D.).

The curriculum in medicine at The University of Iowa 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

The first three semesters present this core of sciences basic to the study of medicine:

First Semester

92 183 Biochemistry for Medical Students in centered around a series of clinical applications. 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, the student learns to use various problem-solving approaches.

62 103 Gross Human Anatomy for Medical Students includes embryology, clinically relevant areas of human anatomy and physiology, and students study anatomy with clinical correlations. A complete dissection of the human body is undertaken, and the relationship to the living system is stressed.

60 105 General Histology provides a course of study for the core information concerning cellular and tissue structure and function needed for the work to be accomplished in physiology and pathophysiology.

115 102 Human Dimensions in Medicine is designed to introduce medical students to the importance of communication in the practice of medicine. The course provides students with laboratory experience through which they learn about and improve their ability to communicate sensitively with patients and colleagues.

83 110 Biostatistics completes the work of the seminar. It utilizes a self-paced study of statistical principles and their application to the biological and medical sciences.

Second Semester

73 212 Medical Physiology (including endocrinology) offers the student an understanding of the responses an organism gives to external stimuli and provides a basis for understanding the integrated function of human systems. Much of the material in these two courses is presented from a clinical point of view. In small discussion groups, which have essentially replaced laboratory exercises, the students present their evaluations of the physiologic mechanisms at work in the clinical material. Some demonstrations are used to good advantage.

81 103 Medical Microbiology includes immunology and presents a core of information on the classification and mode of action of infectious agents, as well as certain aspects of body responses to these agents. Laboratory work continues to play an important role in this course.

69 101 General Pathology for Medical Students is concerned with histology in this semester to increase the efficiency of the learning process. Much of pathology at this level is self-instructional, with the student doing "hands on" at each segment as it is completed. Clinical problem solving and discussion periods have replaced laboratories in this course. A section in pathology outlines clinical manifestations of genetic diseases.

Third Semester

69 202 Systemic Pathology for Medical Students, in which the principles of the previous semester are expanded upon in an organ approach. Student-centered learning is fostered by discussion groups and practice in case analyses.

60 110 Medical Neuroanatomy presents the structure of the nervous system. Much of the material is available for self-study and small-group study in clinics.

63 109 Community Health Concerns in Health Sciences: Medical bridges the clinical and basic sciences and provides the students with principles that must be understood to describe properly the actions and effects of drugs in the patient. Several elective courses are available to students during the third semester. These courses carry 3 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," "Humanistic Medicine," "Human Nutrition," and "Spanish for Health Professionals."

Introduction to Clinical Medicine

A major interdisciplinary 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 a student with the tools for a lifetime of patient care. The first series of mornings is devoted to introducing the patient as a person, still giving guidance in interviewing, counseling, 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 final group of mornings is spent in areas of medicine which do not naturally fall into organ systems, and on re-emphasis of some key subjects. Throughout the 10 weeks of this course, students spend afternoon acquiring and practicing the skills of the clinician in history-taking and physical examination. Habits of care, consent, and compassion needed by all physicians are established in this seminar. 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 The third year includes the required clinical clerkships and provides a student with opportunities to work with physicians of almost all disciplines as they care for their patients. Students spend the weeks in internal medicine; six weeks each in surgery, pediatrics, and obstetrics and gynecology; and two weeks in each of the other disciplines. Students spend most of their time in Iowa City. The clinical clerkships year is the most critical period of a plan of medical education, for this is when the student takes on the posture of a physician, to learn at first-hand the complexity of medical science when viewed at the bedside, and to understand the responsibility of the physician for human life. Period of Selective Study Following the clerkships, the fourth year provides a period of selective study, giving the student many options. The broad, comprehensive orientation to the different medical disciplines and the level of clinical sophistication achieved during the clerkship year qualify the student to participate in a variety of 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. Most aid is in the form of loans from the United States Public Health Service Health Professions Student Loan Program, the Federally Insured Student Loan Program, or the college's Medical Education Assistance Program. A limited number of scholarship grants are awarded each year to students who demonstrate exceptional need. These scholarships vary in value from $500 to $1,500. Small short-term emergency loans may be obtained through the college.

Information and counseling 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 underrepresented in American medicine.

Admission to the M.D. Program The College of Medicine participates in the American Medical College Application Service (AMCAS). A non-profit centralized application processing service for applicants to U.S. medical schools. Preliminary applications are processed by AMCAS beginning June 10 of the year preceding the beginning of the class for which application is being made. Prospective students are urged to apply as early as possible. The closing date is December 15.

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 final application from applicants who have not completed work in residence at The University of Iowa. This fee is not refundable except to residents of Iowa who are denied admission. Each applicant must also file with the University Office of Admissions an official transcript from each college he or she has attended.

Requirements An applicant for admission to the College of Medicine must have: Received the baccalaureate degree; or Completed three years of a curriculum qualifying him or her to receive the baccalaureate degree after completing the first year in medicine; or Completed three years of a baccalaureate program meeting the general education requirements of the college he or she is attending. Prospective students must have earned at least 94 semester hours of credit, or the equivalent, including: Physics: a complete introductory course; Mathematics: college algebra and trigonometry, or advanced college mathematics for applicants who completed college algebra and trigonometry in high school; Chemistry: as a minimum, a complete introductory course in organic chemistry, ordinarily following a complete introductory course in modern general chemical principles. Biological sciences: a complete introductory course in the principles of animal biology, or zoology and botany (not botany alone), and an advanced biology course. All the foregoing must be taken with appropriate laboratories.

Fulfillment of the specific requirements for admission does not ensure admission to the College of Medicine. From the applicants meeting the requirements, the admissions committee of the College of
saecline selects those who appear to be best qualified for the study and practice of medicine.

Applicants who have completed the baccalaureate degree and required courses five or more years before seeking admission to the College of Medicine are considered by the admissions committee only under exceptional conditions.

To be considered for admission, an applicant must have attained a grade-point average of at least 2.5 (A=4) for all college work undertaken. Because the quality of work in premedical science is basic to success in medicine, the admissions committee gives special attention to grades in science and to the level of difficulty of the program undertaken. Where courses are on a graded or pass-fail basis, it is expected that applicants will take the required science courses on a graded basis.

Preference is given to applicants with high scholastic standing who are residents of Iowa. Outstanding nonresidents are considered exclusively under the Early Decision Plan. Under this plan, the prospective student submits a single application to his or her first choice of schools by August 1 of the year preceding the one for which the applicant is seeking admission, and the decision is made by October 1.

Applicants are required to take the New Medical College Admission Test administered by the Association of American Medical Colleges in the spring or fall of the year preceding that for which they are seeking admission. Students may make arrangements to apply for this examination through the University's Evaluation and Examination Services.

Personal interviews are not usually conducted but are occasionally requested by the admissions committee. Applicants who feel that an interview is necessary may request that an interview be arranged by contacting the coordinator of admissions. Requests for interviews should normally be made before January 1. The specific purpose of the interview should be clearly stated.

Applicants accepted on or prior to February 15 must submit a $50 advance payment by March 1. Applicants accepted after February 15 must submit this payment within two weeks after they receive notification of acceptance. The advance payment is credited toward tuition and fees.

All students entering the College of Medicine are required to submit the results of a physical examination. They must also take a tuberculosis skin test and, if it is positive, receive 6 units of tuberculin. Both the examination and the skin test should be completed during the year prior to enrollment.

Promotion Policies and Procedures

Role of the Promotions Committee

The purpose of the promotions committee is to ensure that each person graduated 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, this committee depends upon the cooperation, advice, and judgment of faculty, students, and administration.

Composition of Promotions Committee

The promotions committee consists of five faculty members, plus the associate dean for medical student affairs as official (with vote). Two members must be from two different basic science departments and three from three different clinical departments. Appointments are made by the dean of the College of Medicine after consultation with the executive committee.

Regulations and Procedures

In general, promotion from one grading period to the next is contingent upon the satisfactory completion of the courses of each grading period. Continued enrollment of a student who has not satisfactorily completed courses in any grading period may be recommended by the promotions committee, provided that an appropriate tutorial program is designed for the student. Each student must demonstrate proficiency in each required course.

Evaluation of student progress in basic science seminars is based on such examinations or other tests as are determined by each department or course. Evaluation of student progress in clinical seminars is based on clinical skills and performance, and on such examinations or other tests as are established by each department or course.

Scholastic performance in the first three years is reported by using the letters H, P, F, and I in the selective studies segment, only grades P, F, and I will be used. The letter F indicates satisfactory achievement at the passing level. The letter H, signifying "honors," indicates achievement at an exceptionally high level. The letter F indicates work below the passing level. The letter I is issued when for good reasons the student has not completed the work of a course.

The promotions committee meets at least three times each year, following the completion of each academic semester and at other times as requested by the associate dean for medical student affairs.

The committee reviews the course directors' 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 committee or the associate dean for medical student affairs as doing continually poor work. The committee considers other business or procedures as deemed necessary to perform its duties as set forth in this charge. The promotions committee recommends actions to be taken in the case of any student whose work is in any way considered unsatisfactory. These recommendations are considered by the medical council and executive committee, meeting in joint session to represent the faculty. Possible recommendations include immediate dismissal of the student from the college; requiring the student to repeat all or any course; or permitting the student to continue at either a regular or on a decimals or schedule, Students having uncorrected grades of failure or incomplete will normally be placed on academic probation.
Withdrawal from the College

A student may withdraw from the College voluntarily upon written application to the dean’s office.

Reinstatement

Application for reinstatement by any student who has withdrawn voluntarily or who has 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 or further registration to any student if, in the opinion of the faculty, the student has not lived up to the expected general fitness requirements for entering the medical profession, the standards for which must be in keeping with principles of medical ethics of the American Medical Association. Ordinarily such action is taken by the medical council and the executive committee meeting in joint session and acting as representatives of the faculty.

Associated Medical Sciences

The Division of Associated Medical Sciences is organized to include the programs for Medical Technology, Nuclear Medical Technology, Physical Therapy, and Physician’s Assistants. Admission to these professional programs follows the selection described in the respective sections of this Catalog.

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 upon complying with all the usual requirements for admission to such courses, or by action of the faculty upon recommendation of the professor in charge of the course.
Department head: T.H. Williams  

Suzanne Rosenberg; Robert E. Yang; Nancy E. \nHartman of elevated 1960-81); Paul M. Hendler, \nJ. N. van Hees; J. C. Harrick, Frank J. Lawos, \nRichard M. Bell, J. W. W. Cameron, J. L. J. \nJenn, J. A. Alexander, A. J. A. Davis, S. W. Van \nHartman.  

The department performs three major functions: teaching anatomy of the human body to students preparing for careers in the health care professions; provides advanced co-op, teaching and research training to graduate students preparing for careers in teaching and research; 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 courses in gross anatomy, microscopic anatomy, and neuroanatomy for medical and dental students; gross anatomy and neuroanatomy for physical therapy students; general anatomy and microanatomy for dental hygiene students; and general anatomy for physician's assistant, nursing, and pharmacy students.  

Master of Science  

For admission to the Master of Science program, a person must already possess a degree in a health sciences specialty (e.g., medicine, dentistry, nursing, etc.). The M.S. is awarded on the basis of satisfactory completion of coursework in each of the major subdivisions of anatomy—gross anatomy, microscopic anatomy, and neuroanatomy; teaching experience in one of these areas; a thesis based upon an experimental study; and a successful oral defense of the thesis.  

Doctor of Philosophy  

There are excellent teaching and research opportunities in medical colleges for persons with doctorates in anatomy.  

All students in the Ph.D. program work directly for the doctorate without an intermediate master's program. They acquire in-depth knowledge of gross anatomy, microscopic anatomy, and neuroanatomy by taking courses and teaching in these laboratory sections under faculty supervision. Students ordinarily require four years of full-time study to complete the doctorate in anatomy.  

During the first year, the student chooses a research area and becomes affiliated with a faculty member whose research is in that area. The department's research strengths currently are in endocrinology and reproduction, neurobiology, and the cardiovascular system. By the end of the second year, the student defines a research project with his or her major adviser, formulates a research prospectus, and undertakes a comprehensive examination. This examination assesses the student's ability to analyze, organize, and apply the information, concepts and skills acquired in the first two years of the program. The third and fourth years are devoted heavily to research. During this period, the student may also elect advanced graduate coursework and gain additional teaching experience. The final examination for the Ph.D. consists of a public oral defense of the dissertation. The dissertation is based on original research conducted with the guidance of the student's faculty advisor and four other faculty members.  

Financial Aid  

Financial aid is awarded on a competitive basis to students admitted to the Ph.D. program. Applications for aid should be completed by February 1.  

Graduate Admission  

An applicant for admission to the M.S. or Ph.D. programs in anatomy should have undergraduate preparation including advanced mathematics, one year of organic chemistry, at least two biology courses, and one year of general physics. For admission requirements, see the "Graduate College" section of the Catalog. In addition to taking the Graduate Record Examination (GRE) Aptitude Test, applicants to graduate programs in anatomy are strongly encouraged to take the GRE Biology Advanced Test. This is particularly useful to the admission committee in considering applicants whose undergraduate record may not reflect the individual's full capabilities.  

Facilities  

The department occupies over 35,000 square feet in the Basic Sciences Building in the health sciences sector of the University campus. These quarters house modern facilities and well-equipped research laboratories. The most modern instrumentation is available, including four high-resolution electron microscopes, Balzer evaporation unit, spectrophotometer, cryostate, an automated gamma counting system, etc. Research is increasingly problem-oriented, rather
then discipline-dependent, and is principally in the theme areas mentioned in the previous section.

Courses

0101 Introduction to Medical Anatomy 4.0
Lectures and laboratory demonstrations on human anatomy. Prerequisite for students of nursing and dental hygiene.

0103 Human Microanatomy 3.0
Microscopy study of cells, primary tissues, and organs, emphasis on tooth and joint structures, including embryology. Repetitive lab to discern tissue histology. Students complete lab notebooks. Open to graduate students with consent of instructor. Offered spring semester.

0107 Human Gross Anatomy for Dental Students 5.0
Requisites: knowledge of embryology, gross anatomy, and histology. Open to graduate students with consent of instructor. Offered spring semester.

0108 Principles of Human Anatomy 3.0
Lectures on gross and microscopic anatomy, with particular emphasis on organs involved in drug response and metabolism. Prerequisite for pharmacy students.

0109 Gross Anatomy for Medical Students 5.0
Regional dissection, lecture, demonstrations, tutorials, and discussions. Includes embryology, clinically relevant areas of anatomical radiology, and surface anatomy with clinical correlations. Required of graduate students in medicine, open to others with consent of instructor. Offered spring semester. Preprofessional course of instruction.

0110 General Pathology 3.0
Microscopy study of cells, fundamental tissues, and organs of class mammals. Emphasized is the medical student's learning experience, emphasizes histology. Required of graduate students in medicine. Open to others with consent of instructor. Offered fall semester.

0112 Human Anatomy 4.0
Regional dissection, lecture, demonstrations, tutorials, and discussions. Emphasis on human anatomy, clinical, and laboratory approaches to human anatomy. Prerequisite: admission to medical school. Offered fall semester.

0113 Introduction to Neuroanatomy 3.0
Emphasis on the organization of fundamental brain structures and function of the nervous system; interrelated approach. Required of graduate students in medicine, and graduate students in graduate level programs. Open to others with consent of instructor. Offered fall semester.

0116 Gross Anatomy for Peasants’ Disaster Assistance 4.0
Regional dissection, lectures, and demonstrations which are aimed at medical students to be able to assist the peasantic in medical emergencies. Offered fall semester. Preprofessional course of instruction to graduate students in medicine.

0116/5109150 Microanatomy for Medical Students 4.0
Course includes lecture and lab topics which are aimed at medical students with consent of instructor. Offered the first eight weeks of the spring semester. Not offered 1950- 51. Same as 721/12.

0117 Independent Study in Anatomy 5.0
Projects related to anatomy, arranged with faculty member in the department. Prerequisites: approval of the academic dean and written consent of instructor and department head.

0118 Advanced Human Anatomy 3.0
Emphasis of structures, regional anatomy, and function. Offered spring semester of odd years. Preprofessional course of instruction.

0120 Anatomy Research 3.0
Research project in anatomy. Each student is assigned a project with a member of the faculty actively engaged in research.

0125 Gross Human Anatomy for Graduates 8.0
Regional dissection, lectures, demonstrations, tutorials, and discussions. Includes embryology, clinically relevant areas of anatomical radiology, and surface anatomy with clinical correlations. Required of graduate students in medicine, open to others with consent of instructor. Offered spring semester. Preprofessional course of instruction.

0130 Teaching Workshop in Anatomy 3.4
Preparation of human material for dissection, study and teaching. Includes dissection of anatomy, teaching methodologies, teaching resources, team construction and evaluation. May be offered multiple times. Offered fall semester. Preprofessional course of instruction.

0135 Wriography for Graduate Students 8.0
Creative study of oral, nasal, and respiratory systems and the thorax and the heart. Open to graduate students in medicine, open to others with consent of instructor. Offered fall semester.

0136 Problem Course 1.0
This individual (group) therapy or laboratory research course is offered in the medical student's course in their elective periods. Individual designed by the anatomy faculty member to fulfill the requirements of the student.

0140 Introduction to Neuroanatomy 3.0
Lectures and demonstrations on basic principles of research, neuropharmacology, the nervous system and its disabilities, temporal and spatial aspects of circuitry, the organization and function of the nervous system. Offered spring semester of even years. Preprofessional course of instruction.

0146 Neuroscience 1.0
This course is intended to provide a broad overview of the neural basis of behavior and function. It is designed to be taken by students from all disciplines interested in the nervous system. Offered fall semester. Preprofessional course of instruction.

0147 The Brain and Behavior 1.0
This course is designed for students in the College of Arts and Sciences who wish to gain a basic understanding of how the brain and behavior interact at the cellular and molecular level. Offered fall semester of even years. Preprofessional course of instruction.

0148 Neuroanatomy 1.0
This course is designed for students in the College of Arts and Sciences who wish to gain a basic understanding of how the brain and behavior interact at the cellular and molecular level. Offered fall semester of even years. Preprofessional course of instruction.

0149 Special Study 1.0
Prerequisite: approval of the academic dean and consent of the department head. Open to graduate students in medicine and premedical students. Open to others with consent of instructor. Offered fall semester. Preprofessional course of instruction.

0150 Elective Microscopy of Gastroesophagus and Early Development 1.0
Course includes concepts of the esophagus, gastroesophageal reflux disease, congenital anomalies, and the prenatal development. Offered spring semester of even years. Preprofessional course of instruction.

0151 Elective Microscopy of Gastroesophagus and Early Development 1.0
Course includes concepts of the esophagus, gastroesophageal reflux disease, congenital anomalies, and the prenatal development. Offered spring semester of even years. Preprofessional course of instruction.

0152 Transmission Electron Microscopy 1.0
Same as 2155, 3158, 81.3-16.

0153 Advanced Electron Microscopy 2.0
Preprofessional and preclinical knowledge for understanding of specialized techniques in transmission electron microscopy, scanning electron microscopy, and electron diffraction. Offered spring semester. Preprofessional course of instruction.

0155 Electron Microscopy 1.0
Open to medical students who have presented a satisfactory research or review paper. Required for admission to medical students who may apply for the next year. Fourier transform, X-rays, electron microscopy, X-rays spectrometry, X-ray crystallography, X-rays diffraction, and electron microscopy. Offered fall semester. Preprofessional course of instruction.

0156 Electron Microscopy 1.0
Open to medical students who have presented a satisfactory research or review paper. Fourier transform, X-rays, electron microscopy, X-rays spectrometry, X-ray crystallography, X-rays diffraction, and electron microscopy. Offered fall semester. Preprofessional course of instruction.

0157 Electromagnetic Resonance 1.0
Open student-faculty discussion of current literature in research areas relating to electromagnetism and behavior. Preprofessional course of instruction. Same as 2155, 72.8-05.

0158 Science in Cellular and Molecular Biology 1.0
Presentations by recent and noted scientists; student presentations; discussions or current literature in self-biology. May be repeated. Preprofessional course of instruction. Same as 21.973, 21.973, 21.973, 21.975, M373.


0162 Human Anatomy 3.0
Lectures and demonstrations on basic principles of research, neuropharmacology, the nervous system and its disabilities, temporal and spatial aspects of circuitry, the organization and function of the nervous system. Offered spring semester of even years. Preprofessional course of instruction.

0163 Neuroscience 1.0
This course is intended to provide a broad overview of the neural basis of behavior and function. It is designed to be taken by students from all disciplines interested in the nervous system. Offered fall semester. Preprofessional course of instruction.

0164 Advanced Techniques in the Human nervous system 1.0

0166 Medical and Biophysics 1.0
Interdisciplinary review of special status in anatomy for biophysics, medical student. Open to medical students in the department of anatomy.

0167 Special Study 1.0
Prerequisite: approval of the academic dean and consent of the department head. Open to medical students in the Department of Anatomy.

0168 Special Study 1.0
Prerequisite: approval of the academic dean and consent of the department head. Open to medical students in the Department of Anatomy.
Division of Associated Medical Sciences

Sophomore Year

First Semester
- Literature core
- Social science core
- 4:21 Organic Chemistry I
- 37:3 Principles of Animal Biology

Total: 16 s.h.

Second Semester
- Literature core
- 28:3 Basic Physics
- 37:12 Cell, Tissue, and Organ Biology

Total: 16 s.h.

Junior Year

First Semester
- Foreign language
- 70:190 Intermediate Physiology
- 51:3 General Psychology

Total: 16 s.h.

Second Semester
- 29:11 College Physics
- 63:101 Dynamics of Health

Total: 16 s.h.

Fourth Semester
- 81:187 Survey of Immunology
- 81:187 Microbiology
- Birth

Total: 16 s.h.

Fourth Semester
- 81:187 Genetic Endocrinology
- 37:187 Laboratory

Total: 16 s.h.
Senior Year
Core, elective, or advanced courses in:
12:11 Technology for Medical Technology
12:12 Clinical Chemistry for Medical Technologists
12:13 Immunohematology for Medical Technologists
12:14 Clinical Hematology for Medical Technologists
12:15 Clinical Microbiology for Medical Technologists
12:16 Medical Technology Practicum
12:17 Medical Technology Practicum

For course descriptions, see "Pathology" in this section of the Catalog.
The program is limited to 32 students. A class of 18 students is admitted each July and August. Admission is on a competitive basis. Applications close December 31 for classes beginning in July and August 31 for classes beginning in January.
Preparatory for admission are the completion of:
- 94 semester hours of college study
- 18 semester hours of chemistry, including qualitative analysis, quantitative analysis, organic chemistry, and biochemistry
- 6 semester hours of mathematics, including 1 course in statistics
- 15 semester hours of biology, including general zoology, microbiology, physiology, and parasitology
- General physics, biostatistics, and genetics are highly recommended.
- Minimum cumulative grade-point averages of 2.5 overall and 2.0 in science are generally required (A=4).

An applicant who enters the clinical training program before completing work toward a bachelor's degree must be able, by completing the clinical training program, to satisfy all requirements for the Bachelor of Science degree.

An applicant who enters the program as an undergraduate student must meet the general admission requirements of the University College of Liberal Arts and should consult with the director of the Medical Technology Program as early as possible to plan practical studies to meet all requirements.

Nuclear Medicine Technology

The Nuclear Medicine Technology Program at The University of Iowa is accredited by the Council on Medical Education of the American Medical Association. Fulfillment of the requirements established by the AMA Accreditation Board involves three years of practical work in the College of Liberal Arts and a minimum of 15 months of professional clinical experience, available in the University of Iowa Health Center.
Upon satisfactory completion of the four-year program, the student receives the Bachelor of Science degree with a major in general science and nuclear medicine technology, and is eligible for national certification as a nuclear medicine technologist.

Practical Program

The required practical courses emphasize the physical and biological sciences, which provide a basic background and which are prerequisites for the subects and activities of the clinical year. The following is a summary of the prerequisites for acceptance into the nuclear medicine technology program:

- Satisfaction of the Course of Liberal Arts general requirements, and the requirements for a general science major.
- A minimum of 36 semester hour hours of chemistry, zoology, and physics.
- A minimum of 8 semester-hour courses in mathematics; and
- A minimum of 96 semester hours in all coursework, with a 2.5 minimum cumulative grade-point average.

Clinical Year

The clinical year is conducted in The University of Iowa Health Center. The classroom portion covers in depth the clinical or technical specialties of physics of nuclear medicine, basic medical orientation, scanning instrumentation, radiochemistry, radiopharmaceuticals, electrophoresis, chromography, liquid scintillation, health physics, principles of nursing care techniques, principles of clinical administration, doctor’s conferences and ward critique, fundamentals of microbiology, clinical chemistry, kinetic studies, and medical ethics. Clinical rotations are established in radiology procedures, clinical radiopharmaceutical laboratory, tracer techniques, and research application, thyroid function studies and rectilinear and other scanning, and in kinetic studies.

The clinical year comprises these courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>74:100</td>
<td>Nuclear Medicine Practical I</td>
</tr>
<tr>
<td>74:101</td>
<td>Nuclear Medicine Practical II</td>
</tr>
<tr>
<td>74:102</td>
<td>Nuclear Medicine Practical III</td>
</tr>
</tbody>
</table>

For course descriptions, see "Medicine" in this section of the Catalog.

Admission

Prospective students in nuclear medicine technology are encouraged to apply for study and to provide a transcript of previous work as early as possible in the practical program. Since the class size is at present limited to seven students, and prerequisites are increasing in importance, personal interviews are required. Successful applicants for the clinical training program are notified of their selection at least three months before the beginning of the next clinical class. At present, the 12-month clinical training program starts in September of each year.

Physical Therapy

Physical therapist/Ph.D. assisted professor/Gary Smith
Assistant professor/Gary Sembnag assistant professor/Louis Haxel, L.M., M.D. assistant professor/James C. From director/James C. From assistant professor/John M. Findley

- Degrees offered: B.S., M.S., Ph.D. (in physical therapy)

Physical therapists participate in the evaluation of the capabilities and disabilities of patients. They eliminate treatment to accomplish, correct, or minimize deformity, and improve the general health status of the individual, and they teach the patient, the patient’s family, or other personnel the appropriate procedures for the patient’s continuing care. They are also involved in the administration of physical therapy facilities, the evaluation of supportive personnel, and consultation with other health professionals.

Physical therapy offers a wide variety of opportunities for professional practice in general or specialized hospitals, programs for crippled children, physicians’ offices and physical therapy clinics, extended care facilities, nursing homes, community and governmental agencies, rehabilitation centers, the armed forces, foreign service, and athletic departments. Additional career opportunities are available for teaching in educational programs of physical therapy and related professions.

One of the unique features of the Physical Therapy Program at The University of Iowa is that education is available at three different levels: basic professional (certificate), master’s, and doctoral. There are 80 students in the basic professional program and approximately 25 full- and part-time students in advanced degree programs. The facilities are excellent and are well equipped for classroom and laboratory instruction. The Physical Therapy Program is located in the College of Medicine in the J. H. Center, which includes the University of Iowa Hospitals and Clinics, the nation’s largest university-owned teaching hospital. Residences that locate makes easily accessible to the Physical Therapy Program’s basic science and medical faculty, basic science courses, and interlibrary benefits associated with a College of Medicine environment.

Professional Program

The professional program in physical therapy at The University of Iowa is fully accredited by the American Physical Therapy Association and the Council on Medical Education of the American Medical Association. Satisfactory completion of the professional program qualifies candidates for the Professional Examination Service (P.E.S.) test for licensure in Iowa and other states.

The two-year professional certification program consists of:

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>60:108</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>101:80</td>
<td>Fundamentals of Physical Therapy</td>
</tr>
<tr>
<td>101:115</td>
<td>Kinesiology</td>
</tr>
<tr>
<td>101:124</td>
<td>Therapeutic Physical Agents I</td>
</tr>
<tr>
<td>101:141</td>
<td>Introduction to Physical Therapy</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>69:203</td>
<td>Introduction to Human Pathology</td>
</tr>
</tbody>
</table>
Second Semester
60:128 Human Anatomy and
Neuroanatomy 4 s.h.
72:150 Intermediate Physiology 4 s.h.
101:285 Pharmacologic Science I 3 s.h.
103:118 Clinical Observation 0 s.h.
101:101 Introduction to Clinical Medicine 2 s.h.
101:122 Emotional Aspects of
Disability 1 s.h.
Q1:90 Physical Agents I 2 s.h.
101:186 Applied Biosciences 2 s.h.

Third Semester
101:012 Fundamentals of Orthopaedics
and Clinical Sciences 3 s.h.
101:111 Therapeutic Exercise II 3 s.h.
101:113 Principles of Neurology
and Clinical Sciences 1 s.h.
101:036 Clinical Education
and Rehabilitation 2 s.h.
101:103 Scientific Inquiry 2 s.h.
101:121 Clinical Physical Therapy
Administration 1 s.h.
101:150 Fundamentals of Cardiopulmonary Therapy 2 s.h.
101:170 Pathology and
Orthotics 1 s.h.

Fourth Semester
101:120 Clinical Internship 3 s.h.

Admission
A new class is admitted to the professional curriculum program each fall. Students may enter the program following their junior year of college or after earning a bachelor's degree. A student entering the program after the third year of undergraduate study must also satisfy all requirements for the Bachelor of Science degree by successfully completing the first year of the professional curriculum program.

Undergraduate students who complete their preprofessional work at other colleges or universities must meet the general admission and graduation requirements of the University of Iowa College of Liberal Arts; they should consult with the director of the Physical Therapy Program to plan their preprofessional studies to meet the requirements of the Physical Therapy Program.

Regardless of academic preparation prior to admission, all students are enrolled in the same two-year professional curriculum leading to certification in physical therapy.

To be considered for admission, the applicant must have completed at least 94 semester hours of college study, including a complete introductory course in zoology and either introductory course in psychology (6 semester hours), one introductory course in zoology (6 semester hours), and one college-level mathematics course (3 semester hours). The student must have completed all science courses in the major departments offering the courses, and all must include at least one-fourth laboratory instruction.

The applicant should have a minimum overall grade-point average of 2.7 (A=4) and a 3.0 minimum in all courses in zoology or biology, chemistry, physics, and psychology.

Graduate applicants must take the Graduate Record Examination (GRE).APITG Test prior to admission. Undergraduates must take the GRE during the first year of professional training. Results of the examination must be mailed to The University of Iowa.

Interviews may be required. The physical therapy admissions committee selects the applicants who appear to be best prepared for the study and practice of the profession.

Applications are accepted beginning September 1 for the following year. Prospective students are urged to apply as early as possible. The closing date is in February.

Graduate Programs
The graduate program in physical therapy emphasizes research and teaching in three areas of physical therapy: neuromusculoskeletal (orthopedics), neuromotor (neurology), and cardiopulmonary. Pediatrics is included in the neuromotor area. Clinical experiences are also offered. The program focuses on theoretical and practical bases for assessment and treatment of abnormal human movement. The master's degree requires a minimum of 30 semester hours of graduate coursework, the doctorate 90. Completion of basic professional physical therapy education is a prerequisite. Clinical experience is recommended.

Physical therapy laboratories are available for human and animal studies. These laboratories are well equipped with electromechanical systems for the measurement of locomotor functions such as muscle strength, gait, posture, reflexes, muscle activity (EMG), endurance, and cardiac capacity. Equipment includes laboratory computers. Use of extra laboratory laboratories may also be arranged. Collaborative studies are encouraged with other departments, such as neurology, internal medicine, pediatrics, orthopaedics, physiology, anatomy, pharmacology, and with personnel in the physical therapy clinics.

Master of Arts
A student successfully completing the M.A. program in physical therapy will:

Be able to engage in 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; be able to teach at the basic professional level of physical therapy training and show promise of ability to teach at the master's level; have a 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 areas of musculoskeletal, neuromuscular, and cardiopulmonary physical therapy.

Required courses:
101:301 Thesis Physical Therapy 4 s.h.
101:315 Medical Instrumentation 3 s.h.
101:197 Biomechanics and Biosensor 3 s.h.
101:215 Principles of Human Motion II 3 s.h.
101:290 Cardiopulmonary Therapeutics 3 s.h.
101:297 Evaluation of Selective Neurologically Disabled 3 s.h.
101:282 Teaching Practicum 2 s.h.
Doctor of Philosophy
A student successfully completing the Ph.D. program in physical therapy will:
- Be able to perform original scholarship and research directed toward the discovery of new and important physiological principles that will advance the understanding of physical therapy clinical practices.
- Be able to teach at the basic professional and master's levels of physical therapy training and show promise of ability to teach at the doctoral level.
- Have a knowledge of the physical therapy theoretical and research literature; and
- Be skilled in the application of basic and advanced concepts in the areas of musculoskeletal, neuromotor, and cardio/pulmonary physical therapy.

For a description of the Ph.D. program in physical therapy, see "Physical Education—Field House" in the "College of Liberal Arts" section of the Catalog.

To be considered for admission to the Ph.D. program, the applicant must be a graduate of an approved professional program in physical therapy, be a licensed physical therapist, and must hold a master's degree, must have had calculus, and must meet the admission requirements of The University of Iowa Graduate College. (Note: the master's degree need not be in physical therapy.)

Program entry is limited to the fall semester. Deadlines for receipt of applications for admission are February 15 for notification by April 1 and May 15 for notification by July 1.

Courses
The courses listed below are open only to students in the professional program.

10320 Fundamentals of Physical Therapy 2 s.h.
11324 Neuroanatomy and Unification of Physical Therapy Methods and Techniques in the Management of Musculoskeletal and Neurological Disorders 1 s.h.
12100 Therapeutic Exercise 2 s.h.
12302 Physical Agents 3 s.h.
12411 Clinical and Physical Assessment 2 s.h.
12412 Physical Agent Lab 1 s.h.
12413 Advanced Physical Assessment 2 s.h.
12421 Advanced Clinical Procedures 2 s.h.
12511 Rehabilitation Management 2 s.h.
12513 Research Methods 2 s.h.
12510 Physical Agents 1 s.h.
12522 Advanced Clinical Procedures 2 s.h.
12523 Research Methods 2 s.h.
12531 Rehabilitation Management 2 s.h.
12532 Research Methods 2 s.h.
and Des Moines. Students gain additional clinical experience through placement with selected preceptors involved in clinical work in private practice or in community hospitals. The didactic and clinical phases of the program emphasize primary health care delivery and the use of physician's assistants on this type of service team. The program is integrated into the teaching of the College of Medicine, thus permitting interdisciplinary activities between various medical and health care professional students.

Professional Curriculum

First Year

7:1:125 Pharmacology for Health Sciences: Physician's Assistant Students 5 s.h.
50:100 Law and Medicine for Physician's Assistant Students 1 s.h.
60:111 Oral Human Anatomy for Physician's Assistant Students 8 s.h.
61:110 Microbiology for Physician's Assistant Students 2 s.h.
89:203 Introduction to Human Pathology 4 s.h.
69:130 Clinical Pathology for Physician's Assistant Students 2 s.h.
72:164 Human Physiology for Physician's Assistant Students 4 s.h.
90:164 Biochemistry for Physician's Assistant Students 3 s.h.
117:101 Seminar for Physician's Assistant Students 2 s.h.
50:121 Introduction to Clinical Medicine for Physician's Assistant Students 20 s.h.

Second Year

Required clinical rotations:
70:566 Pediatrics for Physician's Assistant Students 6 s.h.
70:565 General Surgery for Physician's Assistant Students 6 s.h.
78:555 Internal Medicine for Physician's Assistant Students 6 s.h.
115:555 Family Practice I for Physician's Assistant Students 6 s.h.
115:556 Family Practice II for Physician's Assistant Students 6 s.h.
90:120 Obstetrics and Gynecology for Physician's Assistant Students 8 s.h.
73:130 Psychiatry for Physician's Assistant Students 4 s.h.

Elective clinical rotations, selected from the following:
70:101 Pediatrics Elective for Physician's Assistant Students arr.
70:100 Emergency Room for Physician's Assistant Students arr.
70:102 Orthopedics for Physician's Assistant Students arr.
115:500 Family Practice Elective for Physician's Assistant Students arr.
78:100 Internal Medicine Elective for Physician's Assistant Students arr.
82:5 Dermatology for Physician's Assistant Students arr.
74:5 Radiology for Physician's Assistant Students arr.
75:110 Surgery Elective for Physician's Assistant Students arr.
75:110 Rehabilitation Elective for Physician's Assistant Students arr.
79:120 Urology Elective for Physician's Assistant Students arr.
60:110 Obstetrics and Gynecology: Physician's Assistant Elective arr.
73:101 Psychiatry Elective for Physician's Assistant Students arr.
75:110 Surgery Elective for Physician's Assistant Students (Burn Unit)

Faculty

All courses in the physician's assistant professional program are taught by College of Medicine departmental faculty members. The program is administered with advisory assistance from a committee consisting of faculty of the College of Medicine, physicians in private practice, health care administrative personnel, and students currently enrolled in the program.

Expenses

In addition to general University student expenses, students in the Physician's Assistant Program are responsible for the purchase of their uniforms and diagnostic equipment. Microscopes are not required.

Admission

To be eligible for admission to the Physician's Assistant Program, the applicant must have completed 60 semester hours of college study, including:

College of Liberal Arts general education requirements in rhetoric, physical education, and the historical-cultural, literary, and social science cores.

A complete introductory course in inorganic and organic chemistry; and

A complete introductory and at least one advanced course in zoology or animal biology.

It is also strongly recommended, although not required, that the applicant's background include college-level algebra, trigonometry, and physics.

The applicant must have achieved at least a 2.5 grade-point average (A=4) on the last 40 semester hours of college coursework through the year in advance. The admissions committee gives special attention to the applicant's performance in science courses.

Satisfaction of the basic admission requirements does not ensure acceptance into the Physician's Assistant Program. The admissions committee selects the applicant it considers best qualified. Applicants with previous health care experience involving direct patient contact receive differential consideration. The committee will request interviews with the most qualified applicants.

A new class begins the first week of June. Applications are accepted beginning one year in advance, and close January 15. Each applicant must complete The University of Iowa application and the Physician's Assistant Program supplementary application and submit at least three letters of recommendation.

Courses

127:011 Seminar for Physician's Assistant Students 5 s.h.
50:121 Introduction to Clinical Medicine for Physician's Assistant Students 20 s.h.

Pre-requisites:

Three weeks of intensive instruction, including lectures, computer simulations, clinical experience, and practical experiences in animal technology and clinical skills, which may include animal surgery, patient care and diagnostic skills. Open to selected senior physician's assistant students and graduates physicians' assistants.
Biochemistry

Undergraduate Programs

Research Interests

The Department of Biochemistry offers programs of study leading to the M.S. and Ph.D. degrees. The department also offers opportunities for qualified and interested students to pursue M.S., M.D., or Ph.D.-M.D. (medical scientist-training) combined programs.

The spirit of the graduate program is on the individual student, whose educational needs are met in formal coursework and by tutorial conferences in the research areas from which he or she may choose a thesis topic.

First-year graduate students usually take general and advanced biochemistry courses (95:135 Physical Biochemistry), a seminar on affective oral presentation (95:282 Seminar), and at least one course on mathematical and biochemical techniques in the context of ongoing projects.

At the end of the first year, students choose research laboratories for Ph.D. thesis research, begin their thesis projects, and take elective courses that supplement and complement their interests and preparation. Students are required to complete a minimum of 10 semester hours of 1-credit semester hour courses in biochemistry (chosen from the 14 offered) and 8 semester hours of elective science courses offered in other departments.

After passing the comprehensive examinations toward the end of the second year, students are formally admitted to degree candidacy, and concentrate on theses work. This program culminates in the completion of this work, and its successful defense before the thesis committee.

In addition to meeting these and the general requirements of the Graduate College, students are expected to assist in the teaching of biochemistry for two or three semesters, as part of their training.

Throughout the program, students are associated with small seminar groups and receive close personal attention from the biochemistry faculty members who serve as research advisors.

Research Interests

The department's current research interests include several areas of physical biochemistry, effects of configuration on conformation and chemical and biochemical reactivity of the carbohydrates, hormonal control mechanisms, structure and function of metalloproteins, gene control in higher organisms, biocatalysis of protein, mechanism and control of protein synthesis, biochemistry of proteins, characterization of liver and kidney enzymes, neurobiochemistry, lipid metabolism, thymoergic imunogenetics, conformational and allosteric investigation of glycylcysteine enzymes, analysis of enzyme kinetics utilizing cofactors, oligocysteine, enzyme mechanistics, and biosynthesis of active peptides and biochemical changes during development.

Facilities

Biochemistry shares modern (1972) quarters of the Basic Science Building with the departments of Anatomy, Microbiology, Pharmacology, and Physiology and Biophysics. Research and teaching laboratories in each department are interrelated, and faculty

Financial Assistance

Financial assistance is available to all students admitted to the doctoral program in biochemistry.

Admission

The graduate program in biochemistry is sufficiently flexible to accommodate students with bachelor's degrees in any of the biophysical, biochemical, or physical sciences. Required preparation includes one-year college-level courses in quantitative and physical chemistry, general and physical chemistry, and biochemistry.
through calculus. Students with demonstrated ability may make up deficiencies after enrollment.

Beyond the general Graduate College admission requirements (see the Graduate College section of the Catalog), minimum requirements of the department include an undergraduate grade-point average of 3.0 (4.0 = A) in science and mathematics courses, and an acceptable score on the verbal, quantitative, and analytical sections of the Graduate Record Examination (GRE) Aptitude Test.

Courses

9110 Seminar Undergraduates

Introduction to the field of biochemistry, current developments and opportunities, emphasis on techniques of communication of biochemical information and results. Required of all majors.

9115 Biochemistry

Focus on structural and molecular dynamics of biological systems, synthetic and enzyme molecules, and enzyme metabolism, water, and water metabolism, properties of life, wetness, energy, and other factors. Prerequisite: 4101; 4122 recommended.

9120 The Chemistry of Biological Molecules

Diversity of major functional groups in compounds in biological systems and reactions that influence their function. Biochemistry, properties, and techniques of communication of biochemical information. Required of all majors.

9150 Biochemistry

Molecular biology of biological systems: new energy to energy, stored, and utilized by living things. Biochemistry, properties, and techniques of communication of biochemical information. Required of all majors.

9160 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9170 Molecular Biology

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9180 Cell Biology

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9190 Biochemistry

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9200 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9210 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9220 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9230 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9240 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9250 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9260 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9270 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9280 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9290 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9300 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9310 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9320 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9330 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9340 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9350 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9360 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9370 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9380 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9390 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9400 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9410 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9420 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9430 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9440 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9450 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9460 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9470 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9480 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9490 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9500 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9510 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9520 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9530 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.

9540 Molecular Genetics

Interpretation and manipulation of physiological processes and functions in living things. Identify and manipulate genetic processes and functions through techniques of genetic manipulation and genetic engineering. Multicellular and unicellular organisms. Prerequisite: 9120; 9130 recommended.
Dietetic Internship

University of Iowa Hospitals and Clinics offers a dietetic internship program which qualifies graduates to take the American Dietetic Association registration examination. The program is fully accredited by the ADA. Courses comprising the program are administered by the University of Iowa College of Medicine. The following are required:

- 50:201-202 Nutrition Seminar 2 s.h.
- 50:203-204 Clinical Nutrition 4-8 s.h.
- 50:205-206 Projects in nutrition 3 s.h.
- 50:208-310 Hospital Dietary Administration 4-8 s.h.

The following are recommended electives:
- 60:215 Comparative Nutrition 3 s.h.
- 50:216 Analysis of Food Service Systems 3 s.h.
- 60:211 Nutrition of the Child 2 s.h.

Students generally complete the program with 15-17 semester hours of graduate credit. University Hospitals awards a certificate to graduates of the program. Credit earned in the program may be applied toward an advanced degree, and approximately half of the graduates of the program do go on to complete advanced degree programs, most typically the master's degree in home economics, preventive medicine, health education, or business administration.

American Dietetic Association and University of Iowa Graduate College requirements for admission to the program include the bachelor's degree with a strong background in food and nutrition, food service management, and basic sciences.

Students must enter the program in the fall semester. The deadline for application is March 1.

University Hospitals pays an intensive stipend which partially covers educational and living expenses.

For descriptions of program courses, see the "Course Descriptions" in the "Human Nutrition," and "Petries." listings in this section of the catalog.

Family Practice

Department head: Robert E. Saffell
Faculty: Robert E. Saffell, Castor, Robert C. Raval, Robert E. Wallace
Assistant professor: Robert M. Cleaver, Leonard E. Masterson, Larry P. Fesler
Assistant professor: Robert J. Collier, Robert P. Dietsch, Genevieve J. Jaffe, Louis S. Lander, James M. Mead, Jerome Meister, Robert E. Kruse, Steve M. Smith
Clinical associate professor: Phillip G. Coardsen, Robert J. Maleski, Jennifer J. McDermott, Hugh F. Mosser, Forrest W. Swift, Charles A. Weirick

The Family Practice Program was invited in response to the need for more primary-care physicians in the region and throughout the nation. Appropriate coursework in the department is included throughout the four-year M.D. program. The department's 18 elective senior rotations give ample opportunities for exposure to various communities through work in affiliated hospitals or private facilities; in the department's Oakville, Williamsburg, and University Family Medicine offices, and through preceptorships with selected family physicians throughout the state. There is also ample opportunity for independent study during the senior year, and an institutional health care office offers exposure to primary health care systems of other countries.

Residency

The department directs a three-year residency program, graduates of which are eligible for certification by the American Board of Family Practice. The residency traces physicians to provide continuing and comprehensive care to the total family unit, utilizing a concept of the patient, allied health professionals, and the physician into an efficient and effective health care team.

The program is intentionally flexible to allow each resident freedom to tailor his or her training to individual interests and
needs. It includes a broad spectrum of electives in internal medicine, pediatrics, obstetrics and gynecology, psychiatry, medical and surgical specialties, and community medicine. The program currently offers 72 individual rotations.

The hospital-based clinical experience is a unique combination of exposure to practice in the University Hospitals, where the patients have been referred by physicians from all over the state, and in various community hospitals, where the patient care is of a more typical nature of family practice.

During the first year, a large portion of the program is based at Mercy Hospital in Iowa City, where residents have the opportunity for total participation in the practice—both inpatient and outpatient—of the private physician staff. Rotations are specifically designed to provide breadth of experience. In the second and third years, experience is available at Broadlawns Polk County, Iowa Lutheran, and Blank Memorial hospitals in Des Moines, St. Joseph Mercy Hospital in Mason City, the Muscatine Community Health Center, the Red Oak Family Care Center, and in selected teaching practices.

Teaching Fellowship

A two-year teaching fellowship in family practice begins each Aug. 1. Its primary goal is to train physicians for academic roles in family practice department or residency programs. The fellowship includes research methodologies, administrative and teaching techniques, and modern educational methods.

Special Facilities

The department office is located in Children's Hospital in the University Hospitals complex and is the center of administrative activities. It contains faculty offices, the University Hospitals Family Practice Office, and an inpatient unit. The department also maintains family practice offices at the University's Oakdale campus, four miles west of the campus, and at Williamsburg, 25 miles west of the campus. The Williamsburg office is the only medical office in that community. In all offices, patient families are assigned to a resident with faculty supervision and are seen by appointment. Responsibility remains with that resident for the period he or she is in the training program. Emphasis is placed on teaching the principles of practice management, including the organizational and administrative details, making patient record and bookkeeping procedures, and short auditing methodologies required to manage a private practice.

Courses

118:012 Family Health Care Medicine
Weekly meeting in small groups of nine for questionnaire, role plays, and problems. 

118:020 Principles of Family Practice

118:022 Facilitator-Human Communication in Medicine

4-credit course for student participation in family health center. As the files, including patient care in primary care and selected specialty areas. This course is particularly designed to provide education and training in understanding the patient's role in practice.

118:032 Family Care Center, Muscatine

5-credit course for student participation in family care center. The course is designed to enhance the understanding of the patients and their families.

118:038 Emergency Room Simulation, Des Moines

6-credit course for student participation in emergency room simulation. The course is designed to enhance the understanding of the patients and their families.

118:041 International Health Care

5-credit course for student participation in international health care. The course is designed to enhance the understanding of the patients and their families.

118:043 Women's Health Care

5-credit course for student participation in women's health care. The course is designed to enhance the understanding of the patients and their families.

118:044 Principles of Family Practice

5-credit course for student participation in principles of family practice. The course is designed to enhance the understanding of the patients and their families.

118:045 Family Practice in Rural Areas

5-credit course for student participation in family practice in rural areas. The course is designed to enhance the understanding of the patients and their families.

118:046 Family Practice in Urban Areas

5-credit course for student participation in family practice in urban areas. The course is designed to enhance the understanding of the patients and their families.

118:047 Family Practice in Time-Insensitive Problems

5-credit course for student participation in family practice in time-insensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:048 Family Practice in Time-Dependent Problems

5-credit course for student participation in family practice in time-dependent problems. The course is designed to enhance the understanding of the patients and their families.

118:049 Family Practice in Time-Sensitive Problems

5-credit course for student participation in family practice in time-sensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:050 Family Practice in Time-Critical Problems

5-credit course for student participation in family practice in time-critical problems. The course is designed to enhance the understanding of the patients and their families.

118:051 Family Practice in Time-Specific Problems

5-credit course for student participation in family practice in time-specific problems. The course is designed to enhance the understanding of the patients and their families.

118:052 Family Practice in Time-Variable Problems

5-credit course for student participation in family practice in time-variable problems. The course is designed to enhance the understanding of the patients and their families.

118:053 Family Practice in Time-Flexible Problems

5-credit course for student participation in family practice in time-flexible problems. The course is designed to enhance the understanding of the patients and their families.

118:054 Family Practice in Time-Dependent Problems

5-credit course for student participation in family practice in time-dependent problems. The course is designed to enhance the understanding of the patients and their families.

118:055 Family Practice in Time-Sensitive Problems

5-credit course for student participation in family practice in time-sensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:056 Family Practice in Time-Critical Problems

5-credit course for student participation in family practice in time-critical problems. The course is designed to enhance the understanding of the patients and their families.

118:057 Family Practice in Time-Specific Problems

5-credit course for student participation in family practice in time-specific problems. The course is designed to enhance the understanding of the patients and their families.

118:058 Family Practice in Time-Insensitive Problems

5-credit course for student participation in family practice in time-insensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:059 Family Practice in Time-Variable Problems

5-credit course for student participation in family practice in time-variable problems. The course is designed to enhance the understanding of the patients and their families.

118:060 Family Practice in Time-Dependent Problems

5-credit course for student participation in family practice in time-dependent problems. The course is designed to enhance the understanding of the patients and their families.

118:061 Family Practice in Time-Sensitive Problems

5-credit course for student participation in family practice in time-sensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:062 Family Practice in Time-Critical Problems

5-credit course for student participation in family practice in time-critical problems. The course is designed to enhance the understanding of the patients and their families.

118:063 Family Practice in Time-Specific Problems

5-credit course for student participation in family practice in time-specific problems. The course is designed to enhance the understanding of the patients and their families.

118:064 Family Practice in Time-Insensitive Problems

5-credit course for student participation in family practice in time-insensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:065 Family Practice in Time-Variable Problems

5-credit course for student participation in family practice in time-variable problems. The course is designed to enhance the understanding of the patients and their families.

118:066 Family Practice in Time-Dependent Problems

5-credit course for student participation in family practice in time-dependent problems. The course is designed to enhance the understanding of the patients and their families.

118:067 Family Practice in Time-Sensitive Problems

5-credit course for student participation in family practice in time-sensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:068 Family Practice in Time-Critical Problems

5-credit course for student participation in family practice in time-critical problems. The course is designed to enhance the understanding of the patients and their families.

118:069 Family Practice in Time-Specific Problems

5-credit course for student participation in family practice in time-specific problems. The course is designed to enhance the understanding of the patients and their families.

118:070 Family Practice in Time-Insensitive Problems

5-credit course for student participation in family practice in time-insensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:071 Family Practice in Time-Variable Problems

5-credit course for student participation in family practice in time-variable problems. The course is designed to enhance the understanding of the patients and their families.

118:072 Family Practice in Time-Dependent Problems

5-credit course for student participation in family practice in time-dependent problems. The course is designed to enhance the understanding of the patients and their families.

118:073 Family Practice in Time-Sensitive Problems

5-credit course for student participation in family practice in time-sensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:074 Family Practice in Time-Critical Problems

5-credit course for student participation in family practice in time-critical problems. The course is designed to enhance the understanding of the patients and their families.

118:075 Family Practice in Time-Specific Problems

5-credit course for student participation in family practice in time-specific problems. The course is designed to enhance the understanding of the patients and their families.

118:076 Family Practice in Time-Insensitive Problems

5-credit course for student participation in family practice in time-insensitive problems. The course is designed to enhance the understanding of the patients and their families.

118:077 Family Practice in Time-Variable Problems

5-credit course for student participation in family practice in time-variable problems. The course is designed to enhance the understanding of the patients and their families.

118:078 Family Practice in Time-Dependent Problems

5-credit course for student participation in family practice in time-dependent problems. The course is designed to enhance the understanding of the patients and their families.

118:079 Family Practice in Time-Sensitive Problems

5-credit course for student participation in family practice in time-sensitive problems. The course is designed to enhance the understanding of the patients and their families.
1185 Hospital and Health Administration

Program director: Samuel Levay, professor, and executive director of the School of Public Health, University of California, San Francisco.

The Master of Arts degree in Hospital and Health Administration requires 24 credit hours of graduate study, including 12 credit hours of course work, 6 credit hours of research, and 6 credit hours of internship in a hospital or health care organization.

Students are required to complete a minimum of 12 credit hours in courses related to health care administration, including courses in health policy, finance, and management.

The Master of Arts degree is designed for students who wish to pursue careers in health care administration.

1186 Master of Arts in Genetics

The Master of Arts in Genetics is a 36-credit hour program offered by the Department of Genetics.

The program requires the completion of 12 credit hours of course work, 6 credit hours of research, and 6 credit hours of internship in a hospital or health care organization.

Students are required to complete a minimum of 12 credit hours in courses related to health care administration, including courses in health policy, finance, and management.

The Master of Arts degree is designed for students who wish to pursue careers in health care administration.

1187 Five Year Program

The five-year program is designed for students who wish to pursue careers in health care administration.

In addition to the requirements of the program, students are encouraged to take advantage of relevant course work offered by the Department of Preventive Medicine and Environmental Health in the College of Medicine, and by the colleges of Business, Nursing, and Education, and the Library.

The five-year program is designed for students who wish to pursue careers in health care administration.

In addition to the requirements of the program, students are encouraged to take advantage of relevant course work offered by the Department of Preventive Medicine and Environmental Health in the College of Medicine, and by the colleges of Business, Nursing, and Education, and the Library.

The five-year program is designed for students who wish to pursue careers in health care administration.

In addition to the requirements of the program, students are encouraged to take advantage of relevant course work offered by the Department of Preventive Medicine and Environmental Health in the College of Medicine, and by the colleges of Business, Nursing, and Education, and the Library.
the field of hospital or health administration has exhibited an early interest in the health sciences and management. Diversity of background will contribute to the development of a pool of well-trained administrators who can offer differing perspectives on planning and operations. The plan seeks to attract exceptional students from diverse backgrounds.

The student's undergraduate college must be willing to award the bachelor's degree after the student's successful completion of a specified number of graduate semester hours. Upon receiving the bachelor's degree, the student becomes eligible for admission to the Graduate College, a prerequisite for receiving a graduate degree.

Students who wish to be considered for the early admission plan should apply directly to the program during the third year of undergraduate work. Early application will make it possible for the applicant to be advised regarding prerequisites. Letters of inquiry and applications should note that early admission is desired.

Joint Programs

Students may wish to pursue an interest in the health sciences or graduate degree in hospital and health administration and a graduate degree in another discipline such as business administration or urban and regional planning. Joint programs are encouraged. Applicants who are interested in a joint program should indicate this when requesting application material.

Doctor of Philosophy

The primary purpose of the doctoral program is to prepare scholars who are committed to the pursuit of excellence in teaching and research and in management and policy development in the health fields.

At the doctoral level, the curriculum is organized into four basic fields of study, and students are expected to demonstrate competency in each:

Research Methodology and Quantitative Analysis

Health Systems Management and Evaluation

Political, Social, and Economic Aspects of Health Care

Medical Care Organization

Doctoral students will be exposed to advanced courses in health services management, health policy, and health services research. Doctoral candidates are required to complete at least 90 semester hours of graduate work, pass comprehensive examinations, and submit an acceptable dissertation.

An option available to students in the master's program is to file a joint program for the M.A. and Ph.D. degrees. In addition to satisfying the academic requirements of the program, the doctoral student must satisfy the requirements of the Graduate College.

Admission

Admission procedures are the same for M.A. and Ph.D. applicants.

A qualified student with a baccalaureate degree in any discipline from an accredited college or university may apply for admission. Applicants for admission to the doctoral program are generally expected to possess master's degrees in health administration, medical care organization, public health, or in other fields related to health.

Introductory undergraduate courses in accounting, economic management, and statistics are program prerequisites. In special cases, at the discretion of the faculty, students may be permitted to complete the prerequisite courses subsequent to admission. Students must have a 3.0 grade-point average for regular admission, although a student with a lower grade-point average may be admitted to conditional status upon the recommendation of the faculty.

All students applying for admission are required to furnish completed application forms, official transcripts of all graduate and undergraduate coursework, three letters of recommendation, and a brief statement outlining career objectives. Applicants are required to take the Graduate Record Examination (GRE) Aptitude Test and are encouraged to take the Graduate Management Admission Test. A personal interview is usually requested prior to admission.

Applicants are accepted for admission in the fall semester only. Completed applications must be filed not later than July 15. Early applicants may be notified of admission by March 15.

Financial Aid

A limited number of traineeships, research assistantships, and tuition scholarships are available to support students in both the M.A. and Ph.D. programs.

Courses

R-011 Introduction to Health Care Organizations 3 s.h.

R-012 Health Administration 3 s.h.

R-013 Economic Health Care Systems 3 s.h.

R-021 Comparative Health Care Systems 3 s.h.

R-022 Legal Aspects of Health and Medical Care 3 s.h.

R-023 Sociology of Health 3 s.h.

R-024 Sociology of Health 3 s.h.

R-100 Graduate Record Examination 3 s.h.

R-101 Organic Chemistry I 3 s.h.

R-102 Organic Chemistry II 3 s.h.

R-103 Organic Chemistry III 3 s.h.
RS.111 Thesis Health Acquisition
RS.112 Long-Term Care Health
RS.113 Ambulatory Services
RS.114 Environmental Health
RS.115 Social Hygiene
RS.116 Health Services Research
RS.117 Health Services Research
RS.118 Health Services Research
RS.119 Health Services Research
RS.120 Health Services Research
RS.121 Health Services Research
RS.122 Health Services Research
RS.123 Health Services Research
RS.124 Health Services Research
RS.125 Health Services Research
RS.126 Health Services Research
RS.127 Health Services Research
RS.128 Health Services Research
RS.129 Health Services Research
RS.130 Health Services Research
RS.131 Health Services Research
RS.132 Health Services Research
RS.133 Health Services Research
RS.134 Health Services Research
RS.135 Health Services Research
RS.136 Health Services Research
RS.137 Health Services Research
RS.138 Health Services Research
RS.139 Health Services Research
RS.140 Health Services Research
RS.141 Health Services Research
RS.142 Health Services Research
RS.143 Health Services Research
RS.144 Health Services Research
RS.145 Health Services Research
RS.146 Health Services Research
RS.147 Health Services Research
RS.148 Health Services Research
RS.149 Health Services Research
RS.150 Health Services Research
RS.151 Health Services Research
RS.152 Health Services Research
RS.153 Health Services Research
RS.154 Health Services Research
RS.155 Health Services Research
RS.156 Health Services Research
RS.157 Health Services Research
RS.158 Health Services Research
RS.159 Health Services Research
RS.160 Health Services Research
RS.161 Health Services Research
RS.162 Health Services Research
RS.163 Health Services Research
RS.164 Health Services Research
RS.165 Health Services Research
RS.166 Health Services Research
RS.167 Health Services Research
RS.168 Health Services Research
RS.169 Health Services Research
RS.170 Health Services Research
RS.171 Health Services Research
RS.172 Health Services Research
RS.173 Health Services Research
RS.174 Health Services Research
RS.175 Health Services Research
RS.176 Health Services Research
RS.177 Health Services Research
RS.178 Health Services Research
RS.179 Health Services Research
RS.180 Health Services Research
RS.181 Health Services Research
RS.182 Health Services Research
RS.183 Health Services Research
RS.184 Health Services Research
RS.185 Health Services Research
RS.186 Health Services Research
RS.187 Health Services Research
RS.188 Health Services Research
RS.189 Health Services Research
RS.190 Health Services Research
RS.191 Health Services Research
RS.192 Health Services Research
RS.193 Health Services Research
RS.194 Health Services Research
RS.195 Health Services Research
RS.196 Health Services Research
RS.197 Health Services Research
RS.198 Health Services Research
RS.199 Health Services Research
RS.200 Health Services Research
RS.201 Health Services Research
RS.202 Health Services Research
RS.203 Health Services Research
RS.204 Health Services Research
RS.205 Health Services Research
RS.206 Health Services Research
RS.207 Health Services Research
RS.208 Health Services Research
RS.209 Health Services Research
RS.210 Health Services Research
RS.211 Health Services Research
RS.212 Health Services Research
RS.213 Health Services Research
RS.214 Health Services Research
RS.215 Health Services Research
RS.216 Health Services Research
RS.217 Health Services Research
RS.218 Health Services Research
RS.219 Health Services Research
RS.220 Health Services Research
RS.221 Health Services Research
RS.222 Health Services Research
RS.223 Health Services Research
RS.224 Health Services Research
RS.225 Health Services Research
RS.226 Health Services Research
RS.227 Health Services Research
RS.228 Health Services Research
RS.229 Health Services Research
RS.230 Health Services Research
RS.231 Health Services Research
RS.232 Health Services Research
RS.233 Health Services Research
RS.234 Health Services Research
RS.235 Health Services Research
RS.236 Health Services Research
RS.237 Health Services Research
RS.238 Health Services Research
RS.239 Health Services Research
RS.240 Health Services Research
RS.241 Health Services Research
RS.242 Health Services Research
RS.243 Health Services Research
RS.244 Health Services Research
RS.245 Health Services Research
RS.246 Health Services Research
RS.247 Health Services Research
RS.248 Health Services Research
RS.249 Health Services Research
RS.250 Health Services Research
RS.251 Health Services Research
RS.252 Health Services Research
RS.253 Health Services Research
RS.254 Health Services Research
RS.255 Health Services Research
RS.256 Health Services Research
RS.257 Health Services Research
RS.258 Health Services Research
RS.259 Health Services Research
RS.260 Health Services Research
RS.261 Health Services Research
RS.262 Health Services Research
RS.263 Health Services Research
RS.264 Health Services Research
RS.265 Health Services Research
RS.266 Health Services Research
RS.267 Health Services Research
RS.268 Health Services Research
RS.269 Health Services Research
RS.270 Health Services Research
RS.271 Health Services Research
RS.272 Health Services Research
RS.273 Health Services Research
RS.274 Health Services Research
RS.275 Health Services Research
RS.276 Health Services Research
RS.277 Health Services Research
RS.278 Health Services Research
RS.279 Health Services Research
RS.280 Health Services Research
RS.281 Health Services Research
RS.282 Health Services Research
RS.283 Health Services Research
RS.284 Health Services Research
RS.285 Health Services Research
RS.286 Health Services Research
RS.287 Health Services Research
RS.288 Health Services Research
RS.289 Health Services Research
RS.290 Health Services Research
RS.291 Health Services Research
RS.292 Health Services Research
RS.293 Health Services Research
RS.294 Health Services Research
RS.295 Health Services Research
RS.296 Health Services Research
RS.297 Health Services Research
RS.298 Health Services Research
RS.299 Health Services Research
RS.300 Health Services Research
RS.301 Health Services Research
RS.302 Health Services Research
RS.303 Health Services Research
RS.304 Health Services Research
RS.305 Health Services Research
RS.306 Health Services Research
RS.307 Health Services Research
RS.308 Health Services Research
RS.309 Health Services Research
RS.310 Health Services Research
RS.311 Health Services Research
RS.312 Health Services Research
RS.313 Health Services Research
RS.314 Health Services Research
RS.315 Health Services Research
RS.316 Health Services Research
RS.317 Health Services Research
RS.318 Health Services Research
RS.319 Health Services Research
RS.320 Health Services Research
RS.321 Health Services Research
RS.322 Health Services Research
RS.323 Health Services Research
RS.324 Health Services Research
RS.325 Health Services Research
RS.326 Health Services Research
RS.327 Health Services Research
RS.328 Health Services Research
RS.329 Health Services Research
RS.330 Health Services Research
RS.331 Health Services Research
RS.332 Health Services Research
RS.333 Health Services Research
RS.334 Health Services Research
RS.335 Health Services Research
RS.336 Health Services Research
RS.337 Health Services Research
RS.338 Health Services Research
RS.339 Health Services Research
RS.340 Health Services Research
RS.341 Health Services Research
RS.342 Health Services Research
RS.343 Health Services Research
RS.344 Health Services Research
RS.345 Health Services Research
RS.346 Health Services Research
RS.347 Health Services Research
RS.348 Health Services Research
RS.349 Health Services Research
RS.350 Health Services Research
RS.351 Health Services Research
RS.352 Health Services Research
RS.353 Health Services Research
RS.354 Health Services Research
RS.355 Health Services Research
RS.356 Health Services Research
RS.357 Health Services Research
RS.358 Health Services Research
RS.359 Health Services Research
RS.360 Health Services Research
RS.361 Health Services Research
RS.362 Health Services Research
RS.363 Health Services Research
RS.364 Health Services Research
RS.365 Health Services Research
RS.366 Health Services Research
RS.367 Health Services Research
RS.368 Health Services Research
RS.369 Health Services Research
RS.370 Health Services Research
RS.371 Health Services Research
RS.372 Health Services Research
RS.373 Health Services Research
RS.374 Health Services Research
RS.375 Health Services Research
RS.376 Health Services Research
RS.377 Health Services Research
RS.378 Health Services Research
RS.379 Health Services Research
RS.380 Health Services Research
RS.381 Health Services Research
RS.382 Health Services Research
RS.383 Health Services Research
RS.384 Health Services Research
RS.385 Health Services Research
RS.386 Health Services Research
RS.387 Health Services Research
RS.388 Health Services Research
RS.389 Health Services Research
RS.390 Health Services Research
RS.391 Health Services Research
RS.392 Health Services Research
RS.393 Health Services Research
RS.394 Health Services Research
RS.395 Health Services Research
RS.396 Health Services Research
RS.397 Health Services Research
RS.398 Health Services Research
RS.399 Health Services Research
RS.400 Health Services Research
The goal of the doctoral program in human nutrition is to train individuals for careers in research and teaching. It is anticipated that the majority of individuals completing this training will find employment as instructors of the faculties of medical centers, departments of nutrition in schools of public health, various governmental agencies, or industry. Students accepted into the program without previous graduate training will be expected to devote approximately five years in acquiring the necessary breadth in biomedical education, laboratory methodology, use of animal models for study of human problems, and for original research for clinical investigation.

Courses will be arranged to permit each student to spend three to twelve months in each of three or four research laboratories during the first 24 months of the training program. It is anticipated that the student will eventually choose to complete research thesis in one of these laboratories. The five-year training program permits intensive research during the last three years.

In special instances the advisory committee for the Ph.D. program in human nutrition may waive certain requirements; otherwise, the following core curriculum is mandatory for all students:

96:183 Biochemistry for Medical Students
96:130 The Chemistry of Biological Materials
96:130 Metabolism
97:251 Medical Physiology
97:203 Molecular Endocrinology
97:203 Intermediate Physiology
97:161 Introduction to Biostatistics
97:161 Design and Analysis of Experiments in Biomedical Sciences
97:168 Principles of Epidemiology
97:254 Advanced Epidemiology Methods
97:103 Introduction to Radiocurcides and Radiobiology
97:224 Radiocurcides in Biological Research
96:203 Clinical Nutrition
96:204 Clinical Nutrition
96:215 Nutrition Methods

Admission

The Ph.D. program in human nutrition aims at attracting students with a wide range of previous interests and training. Precursors for admission to the program include completion of acceptable courses in college-level mathematics, physics, chemistry, and biology; a minimum undergraduate grade-point average of 3.0 (A=4.0) with a 3.0 average in science and mathematics course; and as acceptable scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination (GRE) Aptitude Test.

Candidates should indicate in further details of the program to which they will apply. The Admission Committee will evaluate the application, including submission of all college junior grade transcripts, a letter expressing career goals, and a list of names of three individuals familiar with the applicant's academic record.

Facilities

Students accepted into the program will have an opportunity to participate in a wide range of nutrition research activities. Faculty advisors are available in a number of departments: Anatomy, Biochemistry, Home Economics, Internal Medicine, Obstetrics and Gynecology, Pediatrics, Pharmacology, Preventive Medicine and Environmental Health, and Surgery.

Financial Support

Financial support is available to all students in the program.

Courses

97:501 Nutrition Seminar 1.0 hr.
Discussion of problems in research design for nutrition studies, including clinical investigation. Offered fall semester.
97:502 Nutrition Seminar 1.0 hr.
Discussion of nutrition topics. Offered spring semester.
97:503 Clinical Nutrition 4.0 hrs.
Energy, protein, vitamins, minerals, and drug interactions, selected aspects of food technology. Emphasis on nutrition of normal individuals. Offered fall semester. Offered beginning 1980.
97:504 Clinical Nutrition 4.0 hrs.
Assessment of nutritional status, age- and sex-specific considerations, common clinical disorders, formula diets, parenteral nutrition. Offered spring semester. Offered beginning 1980.
96:229 Projects in Nutrition 3.0 hrs.
96:300 Research Topics 3.0 hrs.
96:330 Research Topics 3.0 hrs.
96:351 Nutrition of the Newborn 3.0 hrs.
Developmental aspects of neonatal maturation of the infant and clinical topics for nutrition practices during neonatal health problems. Influence of early feeding and adaption of health. Offered fall semester.
96:352 Nutrition of Infancy 3.0 hrs.
History of nutrition research, animal models, selected environmental factors, data, feeding methods, sample collection, body composition, methods of analysis, human subjects (ethical, dietary intake, metabolic balance studies, intercellular research), nutrition and the infant. Offered fall semester.
96:353 Comparative Nutrition 3.0 hrs.
Age, sex, and species differences in metabolism. Emphasis on the nutrition of humans in primitive and developed countries. Offered spring semester.
**Graduate Program**

The department offers straight internships and an approved residency program of high quality. In addition, 20% of the department's specialty divisions offer clinical and research fellowships for periods of one to two years. These permit the development of special skills and knowledge in the specialty. Candidates for internships are selected from approved medical schools. Postdoctoral fellows who have obtained their doctorates are also considered for programs in which the major focus is in laboratory research.

**Facilities**

Teaching occurs in the medical services and in the laboratories of the University hospitals in Iowa City, the Veterans Administration hospital in Iowa City and Des Moines, and Iowa Methodist Hospital in Des Moines.
Medical Scientist Training Program

Program Director: Robert E. Feller (Physiology) and Dorothy F. Kasten (Pharmacology)

The Medical Scientist Training Program (MSTP) is designed to prepare a limited number of very highly qualified men and women for a lifetime of creative professional activity in academic medicine and biomedical research. To accomplish this, the MSTP follows a curriculum sequence which provides efficient integration of graduate education and doctoral research training with the full complement of clinical studies necessary for the medical degree. Requirements for both the M.D. and Ph.D. degrees can be completed in six to seven years of continuous study.

The Medical Scientist Training Program is administered by an executive committee composed of the heads of the five basic sciences departments and the departments of Internal Medicine, Pediatrics, and Psychiatry. An advisory committee, selected from the faculty of these departments, acts as a liaison with the individual departments, provides trainees with guidance, and advises the executive committee on matters related to candidate selection.

In the first two years of the MSTP, trainees are enrolled in the College of Medicine for the basic science and introductory clinical portions of that curriculum. In the first three semesters, the basic science core provides trainees with broad exposure to the language and organizing concepts of the biological sciences, which constitute a foundation essential for all subsequent medical training. Trainees take courses in biochemistry, microscopy anatomy, gross anatomy, and bio-statistics in the first semester; biology, physiology, microbiology, and general pathology during the second semester. The first semester of the second year is devoted to the study of pharmacology, systematic pathology, community health sciences, neuroanatomy, and behavioral science.

In the second semester of the second year, trainees are enrolled full time in 50:111 Introduction to Clinical Medicine, which initiates the development of skills necessary for building and maintaining competencies as physicians. This semester provides instruction in medical diagnosis, physical diagnosis, and laboratory diagnosis, as well as insight into major health problems and needs.

50:111 Introduction to Clinical Medicine is followed in the summer of the second year by six-week clinical clerkships in two of the following disciplines: medicine, pediatrics, psychiatry, surgery, and obstetrics and gynecology. By the midpoint of the second year, the student chooses the graduate department in which he or she will enroll full time for the third, fourth, fifth, and, to the extent necessary, sixth years, to acquire academic and research experience appropriate to his or her development as an independent investigator. This scientific training is directly supervised by selected faculty of the student's graduate department.

As soon as trainees complete the graduate component of their training, they immediately return to the College of Medicine to begin their final clinical year. This year serves two purposes. First, it allows the trainees to take his or her knowledge of laboratory science back into the clinical environment and apply it to problems of human disease. Second, it permits the trainee to renew and develop the clinical skills that he or she acquired in the second year of the program. With completion of the final 36 weeks of clinical clerkships, including medical and surgical subspecialties, trainees are awarded the M.D. and Ph.D. degrees.

Financial Support

Trainees admitted to the MSTP receive stipend and tuition support for up to seven years from an MSTP award to The University of Iowa from the National Institutes of Health or from funds provided by basic science departments in cooperation with the College of medicine and Graduate College. Support for trainees admitted to advanced standing in the MSTP is arranged on an individual basis.

Eligibility

All applicants must be acceptable for admission to both the College of Medicine and the Graduate College of The University of Iowa. Applicants are expected to have completed requirements for a bachelor's degree at an accredited college. In addition to outstanding academic credentials, including strength in physical and mathematical sciences, the applicant should demonstrate aptitude for and commitment to scientific research, usually through productive research experience as an undergraduate. Applications are normally accepted from students requesting admission to the first year of the MSTP. 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 is a participant in the American Medical College Application Service (AMCAS). MSTP applicants should submit AMCAS to forward their credentials to the College of Medicine at least one month before June 15. At the same time, applicants should request a separate MSTP application form from the MSTP Office, 5-660 Basic Sciences Building, University of Iowa, Iowa City, Iowa. Application review begins when the MSTP is reviewed by the selection committee after the AMCAS application is received.

The deadline for receipt of applications is December 1. It is strongly recommended that all application materials be submitted as early as possible to facilitate review by both the College of Medicine Admissions Committee and the MSTP selection committee. The early decision requirement of the College of Medicine for out-of-state residents is waived for the MSTP. Equal consideration is given to all applicants regardless of their state of residence.

All candidates for admission to the MSTP should take both the New Medical College Admissions Test and the
Graduate Record Examination (GRE) Aptitude Test, preferably in the spring and no later than the fall of the calendar year in which an application is submitted.

Medical Technology

See "Division of Associated Medical Sciences" in this section of the Catalog.

Microbiology

Chair: Irving P. Crawford
Faculty: professors John E. Black, John Carte, Jr., Irving P. Crawford, Thomas L. Feldman (Entomology), Rudolph P. Glaser (Chemistry and Zoology), Louis S. Himmel, William Juvelier, James A. Markert, Earl W. Ror, Donald F. Salmon, Thaddeus F. Rout, Worth L. Smith, LaVerne A. Stemmer, Freida D. Cox, Mildred J. Falke, David J. Lubart (Zoology), Jesse S. Phillips, Max F. Shedd, C. Martin Stohler, David H. Walker
assistant professors George V. Group, Robert E. Johnson, Jr.
Degree offered: B.S., M.S., Ph.D.

Undergraduate Program

See "Microbiology" in the "College of Liberal Arts" section of the Catalog.

Graduate Program

The objectives of the graduate program in microbiology are to help students become highly qualified in research and in the teaching of microbiology.

These six areas are included in the program: pathogenic bacteriology, microbial genetics, immunology, microbial physiology, medical mycology, and animal virology. Several of these specialized areas involve interdisciplinary training within and outside the department, so students receive broad experience during their course of study.

Usually the department accepts only candidates for a Ph.D. degree, but occasionally it accepts students desiring a terminal M.S. degree. 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 teaching in the department during their course of study.

Incoming students choose a research supervisor who sits as chair of the student's advisory committee. This committee assists the student in planning a program of study and reviews from time to time the student's progress in research.

The department cooperates with other departments in the various colleges on the campus, affording ample opportunity for students to avail themselves of the University's diverse course offerings, seminars, and research programs. For example, courses and seminars in clinical laboratory microbiology, immunology, genetics, cellular and molecular biology, and electron microscopy are taught in an interdepartmental basis.

Master of Science

Course requirements for the M.S. student are the same as those for the Ph.D. program. The M.S. student must prepare a thesis based on his or her own research.

Doctor of Philosophy

A candidate for the Ph.D. must satisfy departmental course requirements: the core course requirement (minimum requirement: one course in each of the six subdisciplines available in the department, or 15 semester hours of coursework in two different areas) pass a comprehensive examination; and write a thesis and defend it satisfactorily in an oral examination.

Facilities

The department shares the Basic Sciences building with the departments of Anatomy, Biochemistry, Pharmacology, and Physiology. Adequate space and excellent 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 a student is admitted. Before beginning graduate work, the student must have completed courses in biology, chemistry (inorganic, organic, quantitative analysis), mathematics (up to calculus), and physics. Students admitted without the above coursework must take it during the first year of graduate school. The student should have a grade-point average of 2.7 or better to be admitted to the graduate program in microbiology.

Courses

01:13 Medical Microbiology

Principles and methods essential to study of microorganisms, their identification and isolation; microorganisms involved in infectious disease; current concepts of immunology. Prerequisites: Basic Sciences 21:03:102.

01:15 Microbiology for Physicists' majors

Students

Introductory course in medical microbiology, with emphasis on the relationship between microorganisms and infectious agents in a physician's office. Prerequisites: permission of the instructor.

01:17 Survey of Immunology

Introduction to the survey of fundamentals of cellular and molecular immunology, and their application to clinical problems: recognition of self and non-self; immunity from the standpoint of these areas of knowledge; antigen and antibody; immune response and Graft Rejection, Serology, Urology, and many others. Prerequisites: Immunology course in microbiology or by permission of instructor. (5) Credit/No Credit. Students must pass an understanding of genetics at the level of 303 Principles of Animal Biology, Same as B13:66.

01:19 General Microbiology

Fundamental principles of colonial physiology, microbial genetics, microbial physiology, microbial morphology, and microbial physiology and genetics in pathogenic microorganisms. Corequisites: 21:03:102.

01:19 Pathogenic Bacteriology

Dissection of pathogenic bacteria, with emphasis on mechanisms of pathogenicity and laboratory methods used for identification and isolation of bacteria. Laboratory includes advanced methods used in study of pathogenic bacteria. Prerequisites: 21:03:102 and consent of instructor.

01:19 Microbial Physiology

Microbial cell structure and function, growth, energy metabolism, biosynthesis, and control mechanisms: biochemistry includes techniques for isolation and purification of enzymes, structure and function of microbial enzymes. Corequisites: 21:03:135, 21:03:104; and consent of instructor.

01:19 Viruses in Medicine

Student works on research projects under supervision of a faculty member. For undergraduate students with sufficient background. Prerequisites: 21:19:103 and consent of instructor.

01:19 Dental Microbiology

Introductory course covering bacteriology, immunology, pathogenic bacteriology, genetics, and medical microbiology. Open only to dental students.
Coursework for M.D. Students

The courses in obstetrics and gynecology are designed to give M.D. students a comprehensive survey of female reproductive problems. This is done through a series of didactic lectures, laboratory and outpatient assignments, ward rounds, teaching seminars, and special elective courses.

The third-year clerkship (OB 4 Clinical Obstetrics and Gynecology) gives the student core knowledge, skills, and strategies to provide health care to women patients.

The department offers fourth-year students a variety of electives that provide advanced training in the special areas of obstetrics and gynecology. In addition to clerkships at The University of Iowa Hospitals and Clinics, these electives include rotations at Broadlawns Polk County and Iowa Methodist Hospitals, Des Moines; Ochsner Clinic and Charity Memorial Hospital, Monroe, Louisiana; Medical Associates, Dubuque; The Gunderson Clinic, LaCrosse, Wisconsin; and Orlando Regional Medical Center, Orlando, Florida.

Residency Program

The department offers a four-year residency. After passing a written and oral examination, residents are eligible to be certified by the American Board of Obstetrics and Gynecology.

During the four years, the resident rotates through the various divisions of the department and gains experience in general obstetrics and gynecology, obstetrics and gynecology rotations.

The department offers two-year fellowships in gynecologic oncology (reproductive and endocrinology) and maternal-fetal medicine (two). Each involves clinical and research activities. After passing the written and oral examinations, fellows are eligible to take the examination of the American Board of Obstetrics and Gynecology for certification in their subspecialty areas.

Courses

OB 4 Clinical Obstetrics and Gynecology. Provides an overview of obstetrics and gynecology and introduces the student to the specialty.

OB 4 Advanced Obstetrics and Gynecology. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Iowa City. Focuses on the diagnosis and management of gynecologic conditions in the setting of comprehensive and biopsychosocial care.

OB 4 Advanced Obstetrics and Gynecology: Orlando, Florida. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Des Moines, Iowa. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: LaCrosse, Wisconsin. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Orlando, Florida. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Des Moines, Iowa. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: LaCrosse, Wisconsin. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Orlando, Florida. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Des Moines, Iowa. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: LaCrosse, Wisconsin. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Orlando, Florida. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.

OB 4 Advanced Obstetrics and Gynecology: Des Moines, Iowa. In-depth study of the diseases and conditions of the female reproductive system, as well as the surgical and medical management of these conditions.
The department maintains several research laboratories: tumor diagnosis, pathology and electron microscopy, electrophysiology, microbiology, papillometry, and vascular diseases. Clinical facilities are available not only at the University Hospitals, but also at the Veterans Administration hospitals in Iowa City and in Des Moines. The department also manages an eye clinic at the Broadlawns Polk County Hospital.

The department sponsors an international symposium, annually a national conference, and monthly a statewide program of continuing education.

Two features of the department are outstanding: a large full-time faculty, and the opportunity it offers to prepare for a career of teaching and research in ophthalmology.

Courses

401-402 Electives in Ocular Pathology and Physiology 4.0 c.

Four-week course devoted student in nuclear ophthalmology, including histology, ultrastructure, and clinical manifestations of diseases of the eye, presenting an integrated approach to the understanding of the eye.
Physicians in the outpatient clinic see approximately 100 patients a day. Specialty clinics deal with such problems as scoliosis, club foot, congenital dislocated hips, neuromuscular diseases, amputees, hips, knees hands, osteoplasia, and trauma. Approximately 1,500 major operations are performed each year under auspices of the department. The department provides consulting service to the Hospital School for Handicapped Children, State Services for Crippled Children, and two state schools for the mentally retarded.

Courses
71:151 Orthodontics for Physician's Assistant Students
71:155 Rehabilitation Duties for Physician's Assistant Students
71:201 Advanced Clinical Orthodontics
Open to senior medical students only.
71:254 Maxillofacial Trauma
Open to senior medical students only.
71:257 Surgical Care of the Head
Open to senior medical students only.
71:258 Laboratory Experience
For senior medical students only.
71:600 Special Studies or Capstone Open to senior medical students only.
74:600 Special Studies or Capstone Open to senior medical students only.

Otolaryngology and Maxillofacial Surgery
Department head: D. P. McCall
Faculty: J. A. Barka, E. M. Cast, D. J. D. Whitaker, T. R. D. Whitaker, W. W. D. Whitaker
Assistant professor: H. J. E. Whitaker
Associate professor: J. A. Barka, E. M. Cast
Professor: D. J. D. Whitaker
Research assistant: J. A. Barka, E. M. Cast

The department provides one of the oldest and largest otolaryngology and maxillofacial surgery training programs in the world. Currently it has a full-time faculty of 16, including several members from the audiologic, dentistry, and speech pathology professions. The department's main objective is to provide a high-level instructional program in otolaryngology and maxillofacial surgery for medical students and residents. To maintain a teaching program, the department's faculty and staff carry a large patient load in head and neck oncology, maxillofacial trauma, craniofacial defects (such as cleft palate), disorders of the vestibular mechanism, facial plastic surgery, pediatric and geriatric hearing problems, voice problems, personal endoscopy, surgery for disorders, and all the areas usually considered otolaryngologic.

In addition to the major otolaryngology and maxillofacial medical-surgical service, there are five other divisions in the department which make this program comprehensive: craniofacial defects, oncologic surgery of the head and neck, plastic and reconstructive surgery of the head and neck, research, and speech pathology and audiology. Another major objective of the department is to foster research programs designed to yield new knowledge in the field and provide models for students and resident research training.

All senior faculty members participate in research and all residents are required, as part of the resident training program, to design, conduct, and report on a research project during their program of study. In addition, there are several large-scale research programs within the department in vestibular neurophysiology, cranial palsies, and other craniofacial defects, neoprophylaxis, facial nerve conduction, microvascular reconstructive surgery, the effects of aging on hearing, anatomy of the temporal bone, neurotology, audiology, bone morphogenesis in the jaws, and electrophysiology of the inner ear.

Several of these research programs receive federal and private financial support.

Graduate Program
The graduate program in otolaryngology is in accord with the requirements of the American Board of Otolaryngology. 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 one-half months of residence.

After passing an oral and/or 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.

To complete the requirements for the Master of Science degree, the student must earn at least 30 semester hours of credit, one-third of which must come from the basic science group, and must present and defend a thesis. Students capable of additional work may also take elective courses.

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.

Courses
507:320 Clinical Otolaryngology 4 s.h.
507:418 Clinical Internship in Otolaryngology 6 s.h.
507:421 Head and Neck Oncology 3 s.h.
507:430 Principles of Endoscopy 4 s.h.
507:434 Basic Principles of Facial Plastic and Reconstructive Surgery 3 s.h.
507:450 Special Clerkship in Otolaryngology 4 s.h.
507:459 Basic Otolaryngologic Science 4 s.h.
507:460 Head and Neck Surgery 2 s.h.
507:470 Otolaryngology 6 s.h.
507:471 Research Techniques in Otolaryngology 3 s.h.
507:472 Research Techniques in Otolaryngology 3 s.h.
Pathology

Department head: George D. Pavlin

Address

3031 Medical Science

5430 Graduate Avenue

5310 University City

8090 Special Studies in Pathology

8090 Special Studies in Pathology

5430 Graduate Avenue

8090 Special Studies in Pathology

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue

5430 Graduate Avenue
pediatric section of 60.111 Introduction to Clinical Medicine. Didactic lectures and simulated physical examination of the newborn and toddler provide students with their initial pediatric immanent contact. This includes history, physical signs, nutrition, appraisal of growth and development, and symptomatology of the newborn, toddler, and adolescent.

Inpatient service provides an opportunity for training in the complex problems of disease and critical illness. There are daily rounds involving general pediatrics and all subspecialties. Challenging and interesting cases are presented to the staff for discussion of diagnosis and treatment.

Outpatient experience stresses principles and practices required for the maintenance of health in children—immunization, physical care, nutrition, mental hygiene, and utilization of public health facilities and referral agencies.

Graduate Program

The department offers an approved three-year residency program of high quality which meets the requirements for board eligibility in pediatrics.

Fellowships are available in all of the board approved subspecialties, as well as the major subdivisions of pediatrics. The programs are research and clinically oriented, encouraging development of knowledge and skill in the chosen discipline. Upon satisfactory completion of the program, residents meet the requirements for board eligibility in the subspecialty.

Facilities

The Department of Pediatrics is located at The University of Iowa Hospitals, with inpatient and outpatient areas immediately adjacent to faculty offices, the pediatric library, and Cardiac Catheterization Laboratory.

The inpatient service comprises more than 100 beds, and more than 21,000 patients per year are seen in the general, specialty, and continuing care clinics.

Laboratories performing both clinical and research studies are maintained within the department.

The Hospital School for Handicapped Children is available for the child with developmental disabilities, cerebral palsy, and mental retardation.

Courses

70.2 Clinical Pediatrics 5 S.H.

Prerequisites: Completion of health maintenance and treatment of acute and chronic diseases in children; nutrition, immunizations, participation in parent group, daily routine, ward work, expression of observation, evaluation, nutrition, behavior, problems, and survey of important disorders affecting children. For third-year medical students.

70.3 Introduction to Medical Genetics 2 S.H.

70.4 Nutrition, Growth, Care, and Development 2 S.H.

Four-week elective emphasizing all facets of growth and pediatric nutrition, pharmacology and pharmacokinetics including vitamin program, clinical activities, approach to literature, research activities, and conferences.

70.5 Community Pediatrics: Iowa Methodist Hospital, Des Moines

Work in community-based hospital; experience in care of patients as seen in daily practice and in special problems referred to children’s hospital.

70.6 Pediatric Nutrition

Basic concepts of hematology and clinical approach to hematologic problems and tumors seen in children.

70.7 Pediatric Neurology

Close work with interns and staff members, taking part in academic activities of this section, including departmental conferences.

70.8 Pediatric Infections

Clinical approach to common pediatrics infections seen in hospital.

70.9 Pediatric Cancer

Opportunity to participate in all clinical activities, observing radiation therapy and seeking care of children with hematologic, gastrointestinal, and urologic malignancies.

70.10 Pediatric Gastroenterology

Follows section for development and emotional problems in children; explores the availability in Iowa City and the state of these problems.

70.11 Pediatric Endocrinology

Basic concepts of endocrine disorders and their treatment.

70.12 Pediatric Infectious Diseases

Basic concepts of infectious diseases and their treatment.

70.13 Pediatric Cardiology

Basic concepts of cardiovascular diseases and their treatment.

70.14 Pediatric Nephrology

Basic concepts of renal diseases and their treatment.

70.15 Pediatric Intensive Care—West

Students work as part of ward team in pediatric ICU with experience that has direct responsibility for care under direct supervision.

70.16 Pediatric Tethered Spinal Cord

Students work as part of ward team in toddler area; assigned cases work up with direct patient responsibility under supervision of resident and attending physicians; conference and cases seen in pediatrics.

Laboratory research both clinical and research studies are maintained within the department.

70.17 Pediatrics Annexe/Implant

Student works as part of ward team in ward area, assigning work up with direct patient responsibility under supervision of resident and attending physicians; conference and cases seen in pediatrics.

70.18 Pediatric Genetics, Cytogenetics, and Metabolic Disorders

Students participate in all diagnostic and therapeutic programs in this section. They see a large variety of problems in evaluating a genetic situation and counseling accordingly; participation is on an elective basis.

70.19 Community Pediatrics

Exposure in public practice of pediatrics: responsible observation and participation in primary pediatrics in the hospital and outpatient practice of pediatrics.

70.20 Pediatric Hematology

Supervised participation in inpatient clinical practice and outpatient consultation; students participate in all section conferences.

70.21 Pediatric Urology

Experience in pediatric urologic growth and functional sexuality using animal models.

70.22 Iowa Pediatric Society/General Pediatrics and Hospital Services

Exposure to general medicine and general pediatrics.

70.23 Pediatric Rheumatology

Study of rheumatoid arthritis and other chronic inflammatory changes related to the musculoskeletal system.

70.24 Community Pediatrics

Observation in inpatient and outpatient settings.

70.26 Pediatric Infectious Diseases

Diseases and management of infectious diseases in infants and children. Modern methods of diagnosis and therapy of infections; current advances in hemolytic anemia, septicemia, encephalopathy, and meningitis.

70.27 Pediatric Neurology

Approach to literature, research activities, and conferences.

70.28 Pediatric Gastroenterology

Approach to literature, research activities, and conferences.

70.29 Pediatric Pulmonary

Approach to literature, research activities, and conferences.

70.30 Pediatric Endocrinology

Approach to literature, research activities, and conferences.

70.31 Pediatric Neurology

Approach to literature, research activities, and conferences.

70.32 Pediatric Rheumatology

Approach to literature, research activities, and conferences.

70.33 Pediatric Urology

Approach to literature, research activities, and conferences.

70.34 Community Pediatrics

Observation in inpatient and outpatient settings.

70.35 Pediatric Infectious Diseases

Diseases and management of infectious diseases in infants and children. Modern methods of diagnosis and therapy of infections; current advances in hemolytic anemia, septicemia, encephalopathy, and meningitis.

70.36 Pediatric Neurology

Approach to literature, research activities, and conferences.

70.37 Pediatric Gastroenterology

Approach to literature, research activities, and conferences.

70.38 Pediatric Pulmonary

Approach to literature, research activities, and conferences.

70.39 Pediatric Endocrinology

Approach to literature, research activities, and conferences.

70.40 Pediatric Rheumatology

Approach to literature, research activities, and conferences.

70.41 Pediatric Urology

Approach to literature, research activities, and conferences.
Pharmacology

Department head: J.F. Long

The department provides professional training in pharmacology for health science students, offers a Master of Science program in clinical pharmacology and clinical toxicology for students with the M.D. degree, and offers a doctorate program in didactic and research experience.

For qualified graduate students, it offers research and training programs in biochemical pharmacology and toxicology, drug metabolism, central nervous system and autonomic pharmacology, and the pharmacology of the cardiovascular and renal systems.

The Toxicology Center is located primarily within the Department of Pharmacology, and the department is involved with other departments in such educational and research activities as the Neural and Behavioral Science Program, the Diabetes Center, and the Cardiovascular Center.

The department pioneered the offering of pharmacology to undergraduate students with little or no science background. The lecture and discussion sessions in 7:120 Drugs: Their Nature, Action, and Use emphasize the mechanisms of drug action and give students a background for rational decisions concerning the proper use of drugs.

The department offers research training in all areas of pharmacology and toxicology at the preclinical and postdoctoral levels. In preparation for career opportunities in teaching, government, and industry, students generalize during graduate school and undergraduate programs must be in the top quartile.

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 this program is to provide increased emphasis on teaching 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. Satisfactory completion of the following core course is mandatory unless specifically waived by the Department of Pharmacology, faculty. Any of these courses may be waived at the request of the trainee if or by the adviser agrees that the trainee has met them satisfactorily at a prior time.

7:103 Pharmacology Research 7:104 Pharmacology Seminar 7:105 Biochemistry and Clinical Pharmacology 7:110 Special Topics in Pharmacology 63:171 Biomechanics and Biostress 7:112 Toxicology or 7:113 Clinical Toxicology 7:380 Clinical Pharmacology and Therapeutics Lecture Series

The trainee may select 7:115 Pharmacy for Health Sciences: Medical, and may take additional courses appropriate to his or her program, including:

7:205 Advanced Cardiovascular Pharmacology and Physiology 7:1203 Advanced Neuropharmacology 7:1214 Renal Pharmacology Courses in other departments.

Eligibility for the M.S. degree in pharmacology also requires demonstrated proficiency in basic research, satisfactory performance on the qualifying examination (written and oral), and satisfactory preparation and defense of a thesis.

Doctor of Philosophy

Course requirements for the Ph.D. in pharmacology are as follows:

7:100 Chemobiodynamics 99:120 The Chemistry of Biological Materials and/or 09:130 Metabolism 7:2:12 Medical Physiology 7:1:1 Pharmacology for Health Sciences: Pharmacology 63:167 Biochemistry and Biostress 7:1:05 Biochemical Pharmacology 7:1:03 Pharmacology Research 7:1:04 Pharmacology Seminar 7:1:07 Pharmacology of Excitable Cells One or more graduate biochemistry course(s)

The student must complete at least one additional course in his or her area of interest and individual faculty research advisement may require more than one. There is no departmental foreign language requirement.

Students are encouraged to obtain a maximum of laboratory research experience during the first two years. After successful completion of the Ph.D. comprehensive exam, usually at the end of two and one-half years, the student begins or continues his or her Ph.D. thesis research. Thesis research usually requires two years beyond the comprehensive examination. 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

71601 Pharmacology
Pharmacological and experimental approaches to drug design; emphasis on concepts and topics of biological research; pharmacodynamics and receptor theory. 1.5 hrs. Prerequisite: consent of instructor.

71602 Pharmacology Research
Prerequisite: consent of department head.

71605 Advanced Cardiovascular Pharmacology and Physiology
Prerequisite: consent of department head.

71606 Cardiovascular Pharmacology and Physiology
Prerequisite: consent of department head.

71607 Biocatalyst Pharmacology
Prerequisite: consent of department head.

71608 Biochemical Pharmacology
Prerequisite: consent of department head.

71609 Pharmacological Techniques in Cardiovascular Pharmacology and Physiology, and Pharmacotherapy of Cardiovascular Diseases. Offered fall semester of odd years. Prerequisite: consent of instructor. Same as 72571.

71610 Pharmacology of Tobacco
Prerequisite: consent of department head.

71611 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71612 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71613 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71614 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71615 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71616 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71617 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71618 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71619 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71620 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71621 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71622 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71623 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71624 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71625 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

71626 Pharmacology of Tobacco: Medical 1.5 hrs.
Lecture courses, general principles of pharmacology, pharmacological actions of drugs, and correlation with therapeutic use. Offered spring semester. Prerequisite: consent of instructor. Same as 72571.

Physiology and Biophysics

Departmental: P.E. Feltham

Assistant professors: David Bruck, Carl G. Glass (Biological Sciences), Charles H. Pilkey, David Rossdale (Biological Sciences), Jordan S. Sackler, and Charles W. Schmitt.

Graduate Study

The graduate programs in physiology and biophysics are designed to provide broad general knowledge of fundamental life processes at cellular and organ levels, and to provide exposure for intensive study in the area of physiology and biophysics. The programs place major emphasis on the development of modern research skills and their application in the context of original dissertation research.

Graduate students are advised in the first two years by the director of graduate studies, who provides guidance in the planning of a formal course work and an introduction to research activities of departmental faculty. In addition to general courses, there are advanced physiology and biophysics courses specifically designed for graduate students.
Admission
An applicant for graduate admission must have completed undergraduate studies in an accredited institution and have an overall grade-point average of 3.0 and a science grade-point average of 3.5 or better on a 4.0 scale, coupled with strong performance on the Graduate Record Examination (GRE) Aptitude Test. The appropriate background for graduate study in physiology and biophysics includes 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 calculus.

Courses
7210 Introduction to Human Physiology 4.5 h
Basic concepts of human physiology. Offered fall semester. Prerequisites: PHY 107/108 or equivalent; consent of course director.
7211 Cell Biology 2 h
Physiology, biophysics, structure, and regulation of the subcellular cell. Prerequisite: college biology, physics, calculus, general anatomy and consent of instructor.
7218 Endocrinology for Medical Students 3 h
Same as M 118.
7219 Intermediate Physiology 4.5 h
Principles of physiology and detailed treatment of organ systems and cell types. Required of pharmacy and physical therapy students. Available to other students. Offered spring semester. Prerequisite: consent of course director.
7240 Medical Physiology 4.5 h
Principles of physiology and detailed treatment of organ systems and cell types. Limited to medical students. Offered spring semester.
7250 Human Physiology for Physical Therapists 4.5 h
Required for and limited to students in the Physician's Assistant Program. Offered summer semester.
7298 Research, Independent Study 2-3 h
For students who are not candidates for advanced degrees in the Department of Physiology and Biophysics. Prerequisite: consent of the department head.
7299 Exercise Physiology 2.5 h
Basic concepts of exercise and chronic adaptations in exercise. Students required to register under 72310 for laboratory. Offered fall semester. Prerequisite: gross anatomy and consent of course director.
7301 Molecular Fermentology 2 h
Measures of cell or organism, including effects of cyclic AMP function, intermediary metabolism, and effect of metabolic intermediates and hormonal factors on metabolism. Prerequisite: consent of course director. Same as M 1052.
7304 Cellular Endocrinology 2 h
Similar dealing with mechanisms of hormone synthesis, secretion, and transport in target organs. Interaction of hormone activities, and regulation of hormone production. Prerequisite: consent of course director.
7310 Pre-eclampsia Research Seminar 2 h
Presentation and discussion of research activities presented at meetings of the American Society for Reproductive Medicine. Prerequisite: consent of course director.
7312 Medical Physiology 2 h
Required of first-year medical students. Open to graduate students with written permission of the instructor. Prerequisite: consent of course director.
7342 Physiology of Exercise Ventilation 2 h
The basis for ventilation in normal and severe exercise. Prerequisite: 72010 or equivalent; consent of course director.
7352 Advanced Gastrointestinal Physiology 3 h
Mechanics of normal and abnormal gastrointestinal motility. Prerequisite: 72010 or equivalent; consent of course director.
7353 Research Seminar in Neuroendocrine Physiology and Biophysics 3 h
Mechanisms of the nervous system and endocrine system. Prerequisite: consent of course director.
7355 Environmental Physiology 3 h
Physiological responses, especially acclimatization, of mammals to extreme heat, cold, light, high and low pressure, diving, and exposure to onium, electromechanical measurements, and electromyography. Prerequisite: 72010 or equivalent; consent of course director.
7356 Neuroendocrine Science Seminar 5 h
Student-basis discussion of current literature in the area of neuroendocrinology and related fields.
7371 Advanced Cardiac Pharmacology and Physiology 3 h
Principles of pharmacology of cardiovascular diseases and cardiac electrophysiology. Prerequisite: consent of course director.
Offered fall semester of alternate years 1991-92.
Prerequisite: consent of course director. Same as M 1252.
7420 Seminar in Cellular and Molecular Biology 2 h
Reports from current research in the area of cellular and molecular biology. Prerequisite: consent of course director. Also 7210.
7331 Advanced Exercise Physiology Seminar 2 h
Effects of exercise on cardiovascular function. Prerequisite: consent of course director. Also 7230 or equivalent for laboratory. Offered spring semester. Prerequisite: 73230 or 7230 and 99-100 and consent of course director.
7351 Advanced Physiology of Stress 3 h
Mechanisms of cold, thermal, and thermal phenomena in species major. Offered alternate semesters.
Prerequisite: acceptable background in biophysical and physical sciences, consent of course director.
Preventive Medicine and Environmental Health

Department head: Peter Luschen
Faculty: prominent and active in research and public health.

Preventive medicine relates to the individual patient when knowledge and techniques from biological, medical, social, and behavioral sciences 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 organized community effort to maintain and improve the health of populations.

Environmental health is the study of the control of the physical, biological, and social factors of the environment and the manner in which they influence the health of the individual or groups of individuals.

The department offers courses in many areas of preventive medicine and public health, including epidemiology and communicable disease control, institutional and food sanitation, industrial hygiene, biometry, health services research, comparative medicine, agricultural medicine, and many other areas related to the health of communities. Many graduates of the department have gone on to national and international achievement in public health work.

The department sponsored the development of the Institute of Agricultural Medicine, the first agency in the western hemisphere dedicated to the study of the occupational health problems of the agricultural worker. The varied programs of the institute provide practical training for students of the health professions as well as for medical students at the graduate and postgraduate levels, and reflect a special interest in our rural environment.

The department has an expanded and comprehensive biostatistics program, which offers both graduate and undergraduate instruction. Besides individual research in statistical methodology, the department participates in extensive collaborative research with other departments, particularly in the College of Medicine. Departmental programs are enhanced through affiliations with the Hygienic Laboratory, Environmental Health Service, Student Health Service, College of Engineering, Health Services Research Center, and many regional health care delivery programs.

Medical epidemiology, while also linked to the clinical activities in the University Hospitals and Clinics, is primarily oriented toward the community. Teaching and research are concerned with basic epidemiologic methods, but the emphasis is on application to community health problems. Areas of specific interest include the organization and delivery of health services, the description, etiology, and control of acute communicable and chronic diseases, as well as clinical epidemiology. There is a special emphasis within the department on the epidemiology of cardiovascular diseases and cancer.

Examples of specific ongoing programs include assistance in the development of evaluation of rural primary care health centers, conduct of a summative medical student primary care program for migrant farm workers, surveys of health service utilization behavior in low income communities, cardiovascular disease and hyperlipidemia screening programs, cancer epidemiology through the Iowa State Cancer Registry and the Iowa Cancer Epidemiology Research Center, and both within the department, the epidemiology of cardiovascular disease associated with endogenous and exogenous factors, major participation in evaluation of health services research activities on a University-wide basis, the study of the health effects of pesticides, and the study in agricultural worker accidents and injuries, on cardiovascular and other chronic diseases.

Graduate Programs

The master's program offers a degree with an emphasis on environmental health, biometry, or a general track for those who are already health professionals. The Ph.D. program is available with an emphasis in epidemiology, biometry, and environmental health.

The department encourages development of interdisciplinary programs.

Institute of Agricultural Medicine

The Institute of Agricultural Medicine is housed in the Agricultural Medicine Research Facility on the Oakdale Campus. Research, teaching, and extension activities are centered on the health and safety problems of rural low socioeconomic status. Areas of study include environmental toxicology, occupational medicine, environmental science, the Agricultural Prevention Laboratory, and the low pesticide Epidemiology Studies Center.

Financial Aid

A limited amount of financial assistance is available within the department.
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
72-100 Psychiatry for Physicists' Students an.
72-101 Psychiatry Elective for Physicists' Students an.
72-209 Research in Psychiatry an.
72-309 Medical students, graduate students, and physicians who have had recent training in medical sociology are admitted for special investigations in biological and psychological problems related to psychiatry.
72-101 Problem in Psychiatry an.

Courses Open Only to Medical Students
72-3 Global Psychiatry 8 h.
72-1 General Hospital Psychiatry an.
72-3 Psychiatric Correctional Institute, University Hospital, Hospital.
72-3 Psychiatric Disorders of Children and Adolescents, Independence, Iowa.
72-3 Adult Psychiatry, Psychiatric Hospital an.
72-3 Hospital Psychiatry, 14 Hospital, Iowa City an.
72-3 Child Psychiatry, Psychiatric Hospital, Child's Services an.
72-3 Advanced Cardiac Child Psychiatry an.
72-3 Psychiatric and Biological Psychiatry: psychiatric disorders of hospitalized patients, including techniques for studies of hospital psychiatry and child psychiatry.
72-3 Emergency Room Psychiatry, Broadway Hospital, Iowa City 4.5 h.
72-3 Advanced Ophthalmology: Adult Psychiatry an.
72-3 Mental Retardation: Causes, treatment, and rehabilitation.
72-3 Community Child and Adolescent Psychiatry an.
72-3 Advanced Psychoanalytic Techniques of mental health, training for mental health workers.
72-3 Consultative Child Psychiatry an.
72-3 Hospital Psychiatry, Iowa Psychiatric Institute, Iowa City, Iowa an.
72-3 Advanced Procedural in State Hospital Psychiatry an.
72-3 Hospital in Clinical Medicine 1.5 h.
72-155 Research Psychiatry an.
72-155 Research Psychiatry an.
72-155 Research Psychiatry an.

Special Programs
Postdoctoral training is available by arrangement with the program chairman and individual faculty members.

Facilities
The Radiation Research Laboratory has two X-ray generators and other radiation equipment. Students and staff members are free to access to other radiation sources, such as the Co-60 gamma source and the linear accelerators in the Department of Radiology and the reactor of the Biology Division at Argonne National Laboratory.

The Radiation Research Laboratory has a variety of radiation detection and counting equipment, including liquid scintillation counters and a small animal whole-body counter.

The laboratory has also an electron spin resonance spectrometer, an ultraviolet spectrophotometer, an automated cell counter and particle sizer, and facilities for preparing histological sections of tissues—fixed or frozen—and autoradiographs.

Three x- and gamma-ray rooms provide convenient housing for the small laboratory animals used in research and teaching.
Financial Aids

Graduate students are supported as research assistants when possible from funds available through research grants and contracts, or as teaching assistants paid from departmental funds. Some awards are also 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 are also possible and are applied for jointly by the candidate and his or her faculty sponsor.

Courses

Radiotherapy

[Course list]

Radiology

[Course list]

Surgery

[Course list]
to medical students and qualified students in associated health sciences. The student in surgery develops awareness of surgical therapy's place in the treatment of disease. Emphasis is placed upon basic concepts in techniques, traumatology, oncology, burns, gastrointestinal and biliary tract diseases, endocrine disease, transplantation, plastic surgery and reconstruction, gastrointestinal surgical therapy, thoracic and cardiovascular surgery, and neurosurgery.

A majority of the courses involve patient-oriented discussions and practical exercises interspersed with operating room experience. Lectures and conferences are regularly scheduled on specific topics.

Special courses in selected topics of surgical research, independent study, and clinical experiences are available to individual fourth-year students by special arrangement with the faculty.

Faculty
Special faculty strengths are centered in the fields of pathophysiology and problems of severe burns, organ transplantation, the surgical control of morbid obesity, inflammatory bowel disease, biliary tract disease, pediatric urology, and plastic surgery. The thoracic-cardiovascular and neurological surgical orientation serves the clinical management of the spectrum of diseases in their specialties.

Facilities
The department has more than adequate numbers of patients with a wide variety of surgical diseases for teaching. Special areas include the only burn unit of its kind in the state, which provides adequate patient material for both clinical and basic science research. Laboratories provide equipment, space, and technical expertise necessary to support teaching and a wide spectrum of clinical and scientific research. These laboratories include animal operating, tissue culture, gastroenterology, microbiology, peripheral vascular, transplantation, organ preservation, cardiovascular, and neurological and oncology.

Courses
70-014 Basic Surgical Skills 3 hrs.
Basic-skills group course in emergency medical techniques, anatomy laboratory exercises and some lecture material.
70-023 Vascular Revascularization 3 hrs.
70-026 Clinical Surgery 4 hrs.
Six-week course, required of junior medical students. Students become active members of the surgical service at an early stage. Students observe the preoperative and postoperative care of a variety of surgical diseases in the operating room, and help with elective and emergency cases.
70-029 Emergency Room for Physician's Assistant Students 4 hrs.
70-115 Surgery Electives for Physician's Assistant Students 4 hrs.
70-125 Advanced Emergency Medicine 3 hrs.
Four-week course including intensive instruction in acute management of cardiac, pulmonary, neurologic, and musculoskeletal problems; includes lectures, computer simulations, and procedures training in the animal lab. Open to senior medical students interested in emergency or primary care medicine.
70-126 Advanced Clinical Surgery 4 hrs.
Students assume advanced responsibility for patient care on wards and in operating rooms as one of the supervising surgeons. Prerequisites: 70-13 and consent of instructor.
70-127 Minimally Invasive Surgery 2 hrs.
Experimental course in minimally invasive surgery.
70-128 Endoscopic Surgery 2 hrs.
Prerequisite: permission of instructor.
70-129 Pediatric Oncology 2 hrs.
Prerequisites: permission of instructor.
70-122 Emergency Room on Camp 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-122 Emergency Room on Camp 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-123 Bone Therapy 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-123 Bone Therapy 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-123 Bone Therapy 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-123 Bone Therapy 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-123 Bone Therapy 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-123 Bone Therapy 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
70-123 Bone Therapy 2 hrs.
Prerequisite: successful completion of 70-122. Students work with house officers and faculty, emphasizing principles of acute medicine; student performs patient visits, takes histories and takes physical examinations. Prerequisites: 70-12 and permission of instructor.
research in immunology as it relates to transplantation and cancer.

The Department of Urology participates very actively in 60:111 Introduction to Clinical Medicine, which is offered the entire second semester of second-year medicine. The department offers illustrative lectures and demonstrations concerning the diagnosis and treatment of diseases involving the genitourinary tract in the male and female.

In the third and fourth years of the curriculum in medicine, the department offers courses in diagnostic urology, urodynamic urology, endoscopic urology, and the entire field of urology. In the required third-year clerkship, the department offers the basics of the material, and in the fourth year it offers advanced elective courses of intensive study in these areas.

The department offers continuing education throughout the year for urologic and family practitioners. These activities are conducted by the senior staff whose interests include pediatric urology, reproductive physiology, urologic oncology, and prostatic diseases.

The department has earned international recognition for its studies of prostatic diseases.

The urological laboratories are active and offer instruction in various urology research areas. The department offers special elective courses in these areas.

Courses

78:104 Clinical Urology 3 sh.

Invasive two-week course of study on urology; weekly portfolio students responsible for patient care under supervision of resident.

78:105 Special Clinical Clerkship in Urology 0.5 sh.

Special proficiency in one area of urological staff, special area in department with two weeks; participation in inpatient department, under direction of staff member.

78:106 Advanced Clinical Clerkship in Urology 3.5 sh.

Individual study and research.

78:110 Individual Study and Research 0 sh.

Individual projects, either practical or clinical, conducted to meet requirements of department or student staff and, where applicable, a member of another department or clinical faculty member. Upon completion of project, the student presents a summary of project, and if desired, the summary is converted into an article suitable for publication.

78:117 Urology 0 sh.

For students in departments of Urology and Radiology, where indications, complications, and techniques in urological procedures are presented and interpreted; practice in interpretation of time provided; course members attend all experimental conferences.

78:121 Biochemistry 3 sh.

Participation with Urology and Pathology departments in study of morphological material derived from kidney patients subjected to surgical procedures; additional study of cell pathologic material, both gross and microscopic; involving human kidney or renal tissue.

78:142 Prostatic Diseases 2 sh.

Research and clinical study of prostatic diseases; assignments made to provide experience in experimental research in carcinoma of prostate; special related projects of individual interest may be arranged, clinical material with prostatic disease assigned as available.

78:145 Urological Diseases 3 sh.

Supervised clinical experience in diagnosis and management of all types of urological diseases; participation in department's ongoing research in urological medicine and diagnosis of diseases of prostate; special related projects of individual interest may be arranged, clinical material with diseases assigned as available.
The College of Nursing is an integral part of the University Health Center, sharing in and contributing to teaching, research, and patient-care resources which have earned international recognition. This provides an unusually fine setting for college preparation for nursing, because the educational and clinical resources which are needed to educate nurses are available on or near the campus. This also makes it possible for the faculty and students to participate fully in university life and to contribute their time, interest, and abilities to the many general and special activities of a major and modern university.

Both the baccalaureate and graduate programs are accredited by the Department of Sociology 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

Men and women educated as professional nurses are in demand in a variety of jobs and settings, among them community health nursing services, doctors' offices, clinics, hospitals, armed forces, the Peace Corps, the World Health Organization, the Red Cross, home and foreign missions, youth groups, and professional organizations. A professional nurse may be engaged in clinical nursing teaching, research, or private practice.

A bachelor's degree program, such as that offered by The University of Iowa, provides college-level preparation for careers in the hospital fields of patients and in such community settings as public health services, schools, and industries. In addition, it provides the essential base for graduate study in nursing.

In addition to the advantages of combining general education with specific career preparation, a college or university program offers the advantages—hardest of all—to fall participation in the social, cultural, and recreational activities of a highly diversified campus community. In nursing life is less than in other pursuits, a college or university background enables many young people not only to realize their highest career potentialities, but to achieve the greatest measure of self-fulfillment in life.

The baccalaureate program is designed to provide both liberal and professional education. The basic 128-semester-hour program consists of 38 semester hours of general education courses, 40 semester hours of supportive prenursing courses, and 30 semester hours of coursework in nursing. Enrollment in 12 credit hours during one summer session is required. A second summer session in a nursing core course is not guaranteed. Therefore, most students complete the program in four academic years and one summer session.

Course offerings are based on the concepts of health, development from health, and nursing intervention, and are presented in progressive levels of complexity from the sophomore through the senior year. The curriculum reflects the current trend in health care delivery toward greater emphasis on nursing as a service rendered outside hospitals and to other than the acute ill. The curriculum provides for nursing electives and permit the selection of an area for beginning concentrations in the senior year.
Approaches to the College of Nursing

The student may complete the entire program of nine months, enrolling the first year in the University’s College of Liberal Arts, or transfer from an institution earning a two-year sequence of specific courses approved by the College of Nursing.

Cooperating state institutions in the two-year transfer plan include Iowa State University; the University of Northern Iowa; and Upper Iowa, Yankton, Clarion, and Ottumwa.

Completion of the two-year transfer sequence at a cooperating institution does not guarantee admission to the College of Nursing; admission standards for two-year transfers are the same as for all other College of Nursing applicants. Prospective two-year transfer students who want more information about the plan should contact the cooperating institution of their choice.

Registered Nurses

With some modifications, registered nurses who enroll in the baccalaureate program in nursing at Iowa complete the same liberal arts and science courses as students with previous nursing preparation. Registered nurses planning to enter the baccalaureate program at Iowa should obtain special information and advice from the College of Nursing.

Faculty Advisers

Advisers from the college are available to help prospective nursing students plan their programs, and each student in the college works with a faculty adviser.

Student Organizations

College of Nursing students have their own Association of Nursing Students and are also eligible for membership in the state and national associations of nursing students.

Expenses

Students pay the general University fees throughout the program, and purchase their own uniforms. The cost of a uniform order currently is about $370. Students must also purchase white shoes, a stethoscope, and a watch with a full-sweep second hand. Students usually need to provide their own transportation once enrolled in clinical nursing courses.

Financial Aid

In addition to the assistance available to University students generally, there are assistance programs specifically for nursing students. For further information about financial assistance, write to the University Office of Student Financial Aid.

Admission

High School Background

There are no specific high school course requirements for admission to the College of Nursing, but the college strongly recommends four years of English, two years of history, two one-half 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

Applicants for admission to the undergraduate program in nursing must present a minimum of 30 semester hours completed at an accredited college, including two of the five required biological science courses and satisfactory performance in the following general education requirements:

- Rhetoric—8 semester hours (may be satisfied by testing for advanced standing; a student who has earned 6 semester hours of credit in English composition may waive the speech component after satisfactory completion of University of Iowa students who transfer 40 or more semester hours of credits are exempt from the rhetoric requirements.

Mathematics—Two and one-half years of high school mathematics, or a satisfactory score on the mathematics battery of the American College Tests, or completion of a college course in mathematics comparable to or higher than intermediate algebra (52M-112).

Chemistry—High school chemistry or its equivalent (if taken at the college level it may be included in the 30 semester hours required for admission).

Physics—High school physics or its equivalent (if taken at the college level, it may be included in the 30 semester hours required for admission).

- Historical-cultural core—4 semester hours.

- Literature core—4 semester hours.

Credit is earned to satisfy the cultural-historical and literature core requirements may be included in the 30 semester hours presented for admission.

Predoctoral Background

Including the biological sciences courses required for admission to the college, the student must satisfy the following requirements prior to beginning clinical nursing coursework:

- Animal biology 5 s.h.
- Chemistry (organics and biochemistry) 5 s.h.
- Human anatomy 4 s.h.
- Human physiology 4 s.h.
- Microbiology 4 s.h.
- Nutrition 3 s.h.
- Psychopharmacology 4 s.h.
- Sociology 4 s.h.
- Anthropology 4 s.h.
- Human development and behavior 3 s.h.

Standards

To be considered for admission to the College of Nursing, the applicant should have satisfactorily completed college coursework taken.

The American College Tests

All applicants for admission to The University of Iowa must complete the American College Tests. For information on the tests, write to the American
College Testing Program, Box 417, Iowa City, Iowa 52241.

Selection Factors
Fullfilment of minimum admission requirements does not guarantee admission to the College of Nursing. 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 is required prior to final admission.

Application Deadlines
Applications must be received by March 15 for the fall semester, June 15 for the spring semester, and December 15 for the summer semester.

Master of Arts
The University of Iowa Master of Arts program in nursing is accredited by the National League for Nursing. The curriculum is designed to build upon general and professional baccalaureate study, which nursing is an upper-division offering. For this reason, graduation from a NLN-approved baccalaureate degree program is one of the admission requirements.

The aim of the program is to prepare students in an area of nursing specialization and allow for role development in a functional skill area related to their career goals. Since the approach to nursing specialization may be broad or narrow, the curriculum offers three general nursing specialization options which focus on patients or clients: child health nursing, adult health nursing, and community/family health nursing. Within these specialty areas, however, students may tailor their plans of study to accommodate their specific interests by arranging for specific areas and types of field experiences to fulfill the practicum component of the specialization course(s) through selection of relevant concepts to be developed in these courses; by selection of specific courses in the supporting areas; and through the problems they select for study in their thesis project.

Similarly, role preparation is available in three areas: education, administration, and advanced clinical practice. Because the curriculum is intended to be flexible enough to accommodate diverse student interests, the same type of tailoring is possible in the functional skill areas.

Students, for instance, may select all of their supporting coursework in administration or management in order to allow for maximum preparation in that functional skill area.

Although the course offering by the College of Nursing emphasize a holistic approach to patients or clients, it is possible to concentrate in either the behavioral or biological dimension. Students interested in mental health nursing, for example, may select concepts, field experiences, and supporting coursework to expand their knowledge and skill in that area. Role preparation in advanced clinical practice with an emphasis on mental health nursing would further accommodate that interest area. The end result would be that, with the assistance of their advisors, students can design plans of study within a flexible curriculum structure to suit their particular career interests.

The basic requirements of the program are:

**Degree Requirements**

This 45-semester-hour curriculum will ordinarily require four semesters of full-time study for completion. Part-time study is possible, however. The student must maintain a 2.5 minimum grade-point average, and must successfully complete a written, comprehensive examination.

The master's degree curriculum is structured into five components:

1. Advanced nursing core (15 semester-hours): Coursework in the areas of conceptual and theoretical foundations for nursing (5 semester-hours), leadership in nursing practice (5 semester-hours), methods of nursing research (3 semester-hours), and a professional seminar (2 semester-hours).
2. Nursing specialization (9 semester-hours): Allows the student to build a special area of knowledge and practice which extends beyond the ADVANCED nursing core. Specialization may be in the broad areas of child health nursing, adult health nursing, or community/family health nursing. Students may develop areas of specialization through their choices of coursework and field work experiences. For example, students selecting 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 advisors and with the approval of the graduate faculty.
3. Role development (6 semester-hours): Students may select administration, clinical practice, or education as skill areas. Students electing to develop skills for careers in clinical practice, for example, will enroll for 6 semester hours of advanced clinical practice, which in addition to courses required for the nursing specialization component. Application experiences are included in this component.
4. Students may select particular settings and/or preceptors compatible with their own career goals.
5. Supporting courses (6 semester-hours): Students may choose their courses related to their nursing specialization or functional skill interests. Thesis (6 semester-hours): Every student is expected to write and successfully defend a thesis. This involves a systematic inquiry into a nursing problem using methodologies as historical research, case studies, analytical literature review, surveys, or experimental studies which meet the requirements of the Graduate College.

**Plan of Study**

The plan of study described above must involve full-time study. Students wishing to study on a part-time basis would progress through courses in approximately the same way, but over a longer period of time. Taking one or two courses per semester, for example, would extend the time of study to 3-5 years.

NURSING 427
### First Year

**Fall Semester**
- 96:200 Conceptual and Theoretical Foundations for Nursing I 3 s.h.
- 96:204 Leadership in Nursing Practice 3 s.h.
- 96:222 Advanced Concepts of Child Health Nursing I 3 s.h.
- 96:226 Advanced Concepts of Adult Health Nursing I 3 s.h.
- 96:234 Advanced Concepts of Community/Family Health Nursing I 3 s.h.
- 96:210 Methods of Research in Nursing 3 s.h.

**Supporting courses**
- 96:209 Thesis 2 s.h.
- Total 11 s.h.

**Spring Semester**
- Role preparation course or "Supporting course" 3 s.h.
- 96:206 Professional Seminar: Issues in Nursing 2 s.h.
- Total 11 s.h.

*Students developing role skills in the areas of education or administration must fulfill specific prerequisites before registering for the courses offered by the College of Nursing. If they have not been taken for undergraduate credit, the prerequisites may offer partial fulfillment of the supporting coursework requirement. Students who select the education option are required to have a basic course in educational psychology. Those who select administration are required to have a course in administrative or management theory.*

### Second Year

**Fall Semester**
- 96:270 Selected Concepts and Applications in Advanced Nursing 3 s.h.
- 96:246 Nursing Education: Process, Roles, and Strategies 3 s.h.
- 96:230 Nursing Administration: Process, Roles, and Strategies 3 s.h.
- 96:266 Clinical Specialization: Process, Roles, and Strategies I 3 s.h.

**Supporting course**
- 96:209 Thesis 2 s.h.
- Total 11 s.h.

### Graduate Admission

Students should seek admission to the graduate program in nursing through direct application to the Graduate College of the University. Minimum requirements for admission to the Graduate College are a completed application, official transcripts 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 2.5 minimum grade-point average for regular admission, 3.0 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 at least one state in the United States;
- Have an undergraduate grade-point average of at least 2.7 or a demonstrated ability to do graduate work for regular admission, at least a 2.5 undergraduate grade-point average for conditional admission;

- Have recommendations from three persons familiar with his/her competency in the practice of nursing and potential for leadership and scholarship;
- Submit the score from the Miller Analogies Test;
- Submit a 600-word essay detailing career goals; and
- Have successfully completed a basic statistics course.

Applications for master's degree candidacy are reviewed once a year for fall semester admission. The application deadline is March 15. By that time the admission committee will need all relevant admission materials, as listed above, in order to make a decision. Registration for coursework is possible in any term. However, initial enrollment in nursing courses which are offered sequentially takes place in the fall semester.

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 graduate committee."
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 8007Phenomen procedure described in the preceding section if they wish to seek admission as a master’s degree candidate. Only 5 semester hours, or one required nursing core course, taken under professional improvement status may transfer to the M.A. requirements.

Continuing Education

Through its Department of Continuing Nursing Education, the college offers nonacademic, short-term programs for registered nurses. Programs are scheduled on campus and at community sites throughout Iowa. Continuing education units (CEUs) are awarded for each offering on the basis of one unit per 10 semester hours of instruction. Continuing Nursing Education is an Iowa Board of Nursing approved provider number 1.

Pediatric Nurse Practitioner Training Program

This certificate program, offered jointly by the Department of Pediatrics of the College of Medicine and the College of Nursing, prepares registrants to function as pediatric nurse practitioners in an expanded role in child health care teams, in clinics and in private pediatricians’ offices. Program requirements are:

96:142 Seminar for Pediatric Nurse Practitioners 8 s.h.
70:100 Practicum for Pediatric Nurse Practitioners 8 s.h.

Clinical experience in the care of children is provided in The University of Iowa Hospitals and Clinics and under preceptors in the local setting. The program requires a minimum of one semester of on-campus study.

Admission

Applicants must be registered to practice professional nursing in Iowa (or be eligible for licensure by endorsement) and have one year of experience in child health care delivery. The general requirements for admission to the College of Nursing apply. Graduate students may enroll for the program as described either prior to or following the required courses in advanced nursing for children.

Facilities

The Nursing Building is centrally located on the University’s main campus in close proximity to the curatives of Medicine, Pharmacy, and Dentistry; University Hospitals; the Basic Science Building; and the Health Sciences Library. Completed in 1971, the Nursing Building contains five floors of varied and specialized facilities. Administrative offices are located on the first floor. Faculty offices are located on every floor except the second, which is utilized entirely for classrooms, laboratories, and the Learning Resource Center. Additional classrooms and laboratories are housed throughout the building. Conference rooms, student lounges, and meeting rooms are conveniently located. Research facilities in the building provide quick access to computing/calculating equipment and programmable minicomputers.

Courses

Undergraduate

90:310 Introduction to Health and Health Care Services 3 s.h.
22:110 Psychological Aspects of Health and Illness 3 s.h.
22:111 Developmental Stages of Human Organizations 2 s.h.
22:112 Mental Health Care 3 s.h.
22:113 Socialization 3 s.h.
22:114 Social Psychology 3 s.h.
36:116 Introduction to Health and Health Care Services (survey) 1 s.h.
44:110 Human Development and Behavior 3 s.h.
50:210 Introduction to Nursing 3 s.h.
50:211 Nursing Research 3 s.h.
50:212 Mental Health Nursing 3 s.h.
50:213 Community Health Nursing 3 s.h.
50:214 Maternal-Newborn Nursing 3 s.h.
50:215 Pediatrics 3 s.h.
50:216 Gerontology 3 s.h.
50:217 Psychiatric-Mental Health Nursing 3 s.h.
50:218 Psychopathology 3 s.h.
50:219 Public Health Nursing 3 s.h.
50:220 Nutrition 3 s.h.
50:221 Health Education 3 s.h.
50:222 Health Administration 3 s.h.
50:223 Health Policy 3 s.h.
50:224 Health Care Delivery Systems 3 s.h.
50:225 Health Care Finance 3 s.h.
50:226 Health Care Law and Ethics 3 s.h.
50:227 Health Care Information Systems 3 s.h.
50:228 Health Care Research 3 s.h.
50:229 Health Care Epidemiology 3 s.h.
50:230 Health Care Management 3 s.h.
50:231 Health Care Leadership 3 s.h.
50:232 Health Care Legislation 3 s.h.
50:233 Health Care Ethics 3 s.h.
50:234 Health Care Ethics 3 s.h.
50:235 Health Care Ethics 3 s.h.
50:236 Health Care Ethics 3 s.h.
50:237 Health Care Ethics 3 s.h.
50:238 Health Care Ethics 3 s.h.
50:239 Health Care Ethics 3 s.h.
50:240 Health Care Ethics 3 s.h.
50:241 Health Care Ethics 3 s.h.
50:242 Health Care Ethics 3 s.h.
50:243 Health Care Ethics 3 s.h.
50:244 Health Care Ethics 3 s.h.
50:245 Health Care Ethics 3 s.h.
50:246 Health Care Ethics 3 s.h.
50:247 Health Care Ethics 3 s.h.
50:248 Health Care Ethics 3 s.h.
50:249 Health Care Ethics 3 s.h.
50:250 Health Care Ethics 3 s.h.
50:251 Health Care Ethics 3 s.h.
50:252 Health Care Ethics 3 s.h.
50:253 Health Care Ethics 3 s.h.
50:254 Health Care Ethics 3 s.h.
50:255 Health Care Ethics 3 s.h.
50:256 Health Care Ethics 3 s.h.
50:257 Health Care Ethics 3 s.h.
50:258 Health Care Ethics 3 s.h.
50:259 Health Care Ethics 3 s.h.
50:260 Health Care Ethics 3 s.h.
50:261 Health Care Ethics 3 s.h.
50:262 Health Care Ethics 3 s.h.
50:263 Health Care Ethics 3 s.h.
50:264 Health Care Ethics 3 s.h.
50:265 Health Care Ethics 3 s.h.
50:266 Health Care Ethics 3 s.h.
50:267 Health Care Ethics 3 s.h.
50:268 Health Care Ethics 3 s.h.
50:269 Health Care Ethics 3 s.h.
50:270 Health Care Ethics 3 s.h.
50:271 Health Care Ethics 3 s.h.
50:272 Health Care Ethics 3 s.h.
50:273 Health Care Ethics 3 s.h.
50:274 Health Care Ethics 3 s.h.
50:275 Health Care Ethics 3 s.h.
50:276 Health Care Ethics 3 s.h.
50:277 Health Care Ethics 3 s.h.
50:278 Health Care Ethics 3 s.h.
50:279 Health Care Ethics 3 s.h.
50:280 Health Care Ethics 3 s.h.
50:281 Health Care Ethics 3 s.h.
50:282 Health Care Ethics 3 s.h.
50:283 Health Care Ethics 3 s.h.
50:284 Health Care Ethics 3 s.h.
College of Pharmacy

The pharmaceutical sciences are concerned with the preparation and dispensing of medicinal products and monitoring their activity. The pharmacist is also trained to identify, analyze, select, combine, and standardize these medicines, and serves his or her community as a prime source of information on health topics.

Although he or she performs a variety of tasks, the pharmacist is basically a specialist in the science of drugs. He or she must understand their composition, chemical and physical properties, manufacture and uses, and activity in the normal individual as well as in the ill patient, and must be familiar with tests for the strength, purity, and efficacy of drug products. The pharmacist is prepared to compound and dispense prescriptions written by health practitioners, who rely on the pharmacist for information about various drugs—their availability, activity, toxicology, contraindications, etc.

Nearly everyone is familiar with the community pharmacist and the pharmacy in which he or she practices. The size and type of practice may vary—community pharmacies may be large or small, operated by individuals or by corporations. The pharmacists who staff these pharmacies may make up the majority of practitioners. Over 100,000 men and women practice in community pharmacies.

Another smaller group of pharmacists is employed in hospital pharmacy work. The government also employs pharmacists in the Public Health Service, Veterans Administration, Food and Drug Administration, and armed forces.

Pharmaceutical industry is an area where numerous pharmacists are employed. This includes pharmaceutical manufacturing, where pharmacists are found in various areas of research, development, manufacturing, control, marketing, and advertising. In addition to these pharmacies, numerous others are employed in pharmaceutical sales. Pharmacy training is especially valuable in these men and women, who are responsible for acquiring physicians, dentists, veterinarians, and other practitioners with drug products.

In the United States more people are receiving total health care than ever before. The expansion of health care will continue. Young men and women in pharmacy 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, and they receive professional training and education in a number of areas, including pharmacy technology, biopharmaceutics, medicinal chemistry and natural products, pharmaceutical economics, and clinical and hospital pharmacy.

The college of Liberal Arts, Business Administration, Law, and Medicine contribute to the education of pharmacy students by providing instruction in the physical sciences, basic medical sciences, business, law, and humanities.

Basically, 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 in an 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 with proper accreditation. A student entering the college after two years of preprofessional study will complete the professional program in three years if the preprofessional study includes, in addition to the basic preprofessional requirements, at least eight semester-hours of organic chemistry, five to eight semester hours of biology or zoology, three or
four semester hours of economics and three to four semester hours in
quantitative analysis.

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 professional curriculum includes a
minimum of 18 semester hours of
electives; eight of these must be taken in
the fourth professional year. By
choosing appropriate electives, the
student may focus on such special
areas as clinical or hospital pharmacy
or pregraduate study.

The Professional Curriculum

First Year
First Semester
46:13 Pharmacy Math 3 s.h.
37:3 Principles of Animal Biology 5 s.h.
41:121 Organic Chemistry I 3 s.h.
41:101 Elementary Quantitative
Analysis 4 s.h.
Total 15 s.h.

Second Semester
46:14 Pharmacy: Orientation 2 s.h.
46:1 Principles of Economics 4 s.h.
41:122 Organic Chemistry II 3 s.h.
41:141 Intermediate Chemistry
Laboratory I 2 s.h.
*50:102 Principles of Human
Anatomy 3 s.h.
**Elective 3 s.h.
Total 11 s.h.
*Also offered first semester for students
on a 2-3 program only.
**At least eight of electives are
required, of which at least four must be taken in
the P-4 year.

Second Year
First Semester
46:23 Pharmacology I 4 s.h.
99:162 Biochemistry for Pharmacy
Students 4 s.h.
81:107 General Microbiology 4 s.h.
*50:103 Principles of Human
Anatomy 3 s.h.
Total 15 s.h.

Second Semester
46:24 Pharmacology II 4 s.h.
46:22 Pharmacology Socioeconomics:
Health Care Systems 4 s.h.
46:128 Medicinal Chemistry: Natural
Products I 4 s.h.
72:150 Intermediate Physiology 4 s.h.
Total 16 s.h.
*May be taken in second semester of
first year.

Third Year
First Semester
46:131 Medicinal Chemistry: Natural
Products II 4 s.h.
69:203 Introduction to Human
Pathology 4 s.h.
71:101 Pharmacology for Health
Sciences: Pharmacy 5 s.h.
46:36 Pharmacology Socioeconomics:
Pharmaceutical Management 3 s.h.
Total 16 s.h.

Second Semester
46:132 Medicinal Chemistry: Natural
Products III 4 s.h.
71:103 Pharmacology and
Toxicology 3 s.h.
46:38 Pharmacology III 3 s.h.
46:110 Clinical Pharmacy: Case
Study 3 s.h.
*48:81 Clinical Pharmacy: Drug
Information 2 s.h.
Total 15 s.h.
*May be taken in first semester of fourth
year.

Fourth Year
First Semester
46:41 Jurisprudence 2 s.h.
46:43 Pharmacology IV 4 s.h.
*46:40 Clinical Pharmacy: Community
Pharmacy 2 s.h.
46:81 Clinical Pharmacy: Drug
Information 2 s.h.
46:111 Clinical Pharmacy:
Therapeutics 2 s.h.
**Electives 4 s.h.
Total 18 s.h.
Each P-4 student must complete six
clinical clerkships (usually 3 each
semester). Two of these are required
(46:60 and 46:61). Some of the
remaining clerkships may be used to
satisfy the P-4 electives.

Second Semester
46:112 Clinical Pharmacy: Community
Pharmacy 2 s.h.
**Electives 0-6 s.h.
Total 12-14 s.h.
*May be taken in either semester.
**A minimum of 8 s.h. of electives must be
taken in the P-4 year.

Professional Electives
46:48 Community Pharmacy
Retailing 3 s.h.
46:50 Pharmacological Chemistry: Drug
Analysis 3 s.h.
46:52 Senior Seminar 1 s.h.
46:54 Non-Prescription Drugs 2 s.h.
46:82 Clinical Skills: Family
Practice Therapeutics 2 s.h.
46:63 Clinical Pharmacy:
Pediatrics 2 s.h.
46:64 Hospital Pharmacy:
Radiopharmacy 2 s.h.
46:65 Clinical Pharmacy: Surgical
Therapeutics 3 s.h.
46:66 Medical Pharmacy: Geriatric
Therapeutics 2 s.h.
46:67 Clinical Pharmacy:
Nephrology 2 s.h.
46:89 Clinical Pharmacy: Elective
Clerkship 1-8 s.h.
46:101 Pharmacy: Projects 1-3 s.h.
46:103 Physical Pharmacy 3 s.h.
46:104 Pharmacokinetics and
Biopharmaceutics 3 s.h.
46:105 Industrial Pharmacy
Survey 2-3 s.h.
46:107 Hospital Pharmacy:
Survey 3 s.h.
46:108 Hospital Pharmacy:
Survey 3 s.h.
46:114 Advanced Clinical Pharmacy
Research 1-2 s.h.
46:147 Introduction to Natural Product
Research 3 s.h.
46:164 Communications Skills for
Pharmacists 3 s.h.
Graduation from the baccalaureate
program in pharmacy requires the
student to complete satisfactorily the
required courses in addition to 15

PHARMACY 433
Admission

Admission to the College of Pharmacy requires the following preprofessional coursework:
- Rhetoric: eight semester hours, or six hours of transfer credit in English composition and rhetoric, and two hours in speech;
- General chemistry: eight semester hours;
- Mathematics: three semester hours equivalent to analytic geometry or a higher mathematics course, calculus is suggested;
- Physics: a one- or two-semester course in basic physics. A one-year animal biology or zoology course may be substituted; physics will be taken in the first professional year.

Students who have m/f/i deficiencies in meeting the above requirements may be admitted to the college upon recommendation of the chair of the admissions committee and the approval of the dean.

The applicant must have earned a 2.0 (A=4.0) cumulative grade-point average on all college work attempted.

Fulfillment of these requirements does not ensure admission to the college.

From applicants meeting the requirements, the admissions committee of the college selects the best qualified applicants.

Transfer Students

Students who transfer into the college after two years in a community or liberal arts college can complete the pharmacy program in three years if they have satisfactorily completed courses in organic chemistry, biology or zoology, economics and quantitative analysis.

Students who plan to remain in a community college for two years before transferring to the college should consult the dean of the college concerning course requirements.

Transfer with Advanced Standing

Students transferring from other colleges of pharmacy accredited by the American Council on Pharmaceutical Education receive credit toward the Bachelor of Science degree in pharmacy for satisfactorily completed coursework required in this curriculum. However, at least one academic year (30 semester hours) of residence in The University of Iowa College of Pharmacy is required for the degree.

Students transferring from non-accredited colleges may receive credit for work required in the Bachelor of Science curriculum in pharmacy, but still must expect to be enrolled for at least three years in the College of Pharmacy.

A minimum grade of C is required for work evaluated by transfer toward the pharmacy degree.

Graduate Programs

The college has graduate programs in several areas. Master of Science and Doctor of Philosophy programs are available in pharmacology, medicinal chemistry-natural products, and pharmaceutical socioeconomic. A Master of Science degree is available in clinical-hospital pharmacy.

Advanced study in the pharmaceutical sciences prepares the student for research, teaching, and administrative positions in the pharmaceutical, chemical, and agricultural chemical industries, in colleges and universities, in government agencies, and in a number of health-related institutions and organizations.

Facilities

The Pharmacy Building is located in the Health Center complex on the University's main campus, in close proximity to the colleges of Medicine, Nursing, and Dentistry; University Hospitals; the Basic Sciences Building; and the Health Sciences Library.

The Pharmacy Building is a five-story structure specifically designed to provide modern facilities for a comprehensive program of pharmacy education. In addition to classrooms, an auditorium, and learning resources center, the building houses well-equipped separate laboratories and a pharmacy house for practical study at the undergraduate and graduate levels.

The college's extensive industrial pharmacy laboratory serves as a teaching tool as well as a service division of the college. Here undergraduate and graduate students have the opportunity to learn methods of large-scale pharmaceutical product development.

In the clinical pharmacy program, students work with other health professionals and have the opportunity to monitor drug therapy in hospitalized and non-hospitalized patients, under the supervision of clinical instructors in pharmacy, medicine, and dentistry. The various clerkships in which students are involved include many areas of the University and Veterans Administration hospitals, county practice clinics at Oakdale, Mechanicsville, and Williamsburg, Iowa City Mercy Hospital; Mercy and St. Luke's Hospitals in Cedar Rapids; Scholl Hospital in Waterloo; the Community Health Care Clinic (Pediatrics) in Davenport; the State Medical and Dental Institute at Mt. Pleasant; the Iowa Medical Security Facility; selected community pharmacies and nursing homes; and the Iowa Drug Information Service.

Courses

Undergraduate

Pharmaceutics

[Text continues as indicated]
Graduate Pharmaceuticals

4301 Pharmacy: Projects 10 h.
Basic and applied research problems of pharmaceutical significance. Prerequisites: P2 or related courses for pharmacy graduate students.

4303 Physical Pharmacy 10 h.
Surface and interfacial phenomena, adhesion, and stabilization in pharmaceutical systems.

4304 Pharmaceutical Biopharmaceutics 10 h.
Inteaction of drug absorption, distribution, metabolism, and excretion with chemicals that affect drug behavior in man and the pharmacological state of the system. Prerequisite: 4303.

4351 Industrial Pharmacy 9 h.
Organization, operation, and social aspects in the practice of pharmacy. Prerequisite: 4302.

4355 Pharmacy: Selected Topics 10 h.
Recent advances and contemporary research topics in pharmaceutical sciences. May be repeated.

4360 Pharmacometrics 10 h.
Mathematics of pharmacokinetics and intersubject variability in human population. Prerequisite: P315.

4371 Quantitative Research Methods in Pharmacy 10 h.
Limitations of traditional research designs and introduction to the development of appropriate research designs and strategies for pharmaceutical quality control, experiments in new areas of pharmaceutical research, and experiments in new areas of pharmaceutical research.

4385 Product Development 10 h.
Application of pharmacological and physiological principles to formulation and design of pharmaceutical dosage forms.

4386 Product Development 10 h.
Chemical characterization of products and processes for pharmaceutical studies.

4395 Advanced Pharmacokinetics and Biopharmaceutics 10 h.
Advanced treatment of selected topics in pharmacokinetics, biopharmaceutics, and biopharmaceutics.

4397 Seminar 10 h.
Current literature and new developments in areas of pharmaceutical research. May be repeated.

Undergraduate Medicinal Chemistry: Natural Products

4301 Medicinal Chemistry: Drug Analysis 9 h.

4302 Medicinal Chemistry: Natural Products 9 h.
Chemistry of natural products and their chemical and biological properties. Prerequisite: 4301.

4312 Medicinal Chemistry: Natural Products II 10 h.
Chemistry of natural products and their chemical and biological properties. Prerequisite: 4301.

4315 Medicinal Chemistry: Natural Products III 10 h.
Chemistry of natural products and their chemical and biological properties. Prerequisite: 4301.

4316 Introduction to Medicinal Research 10 h.
An elective laboratory course designed to give students in depth exposure to techniques and problems encountered in natural product research. Prerequisites: 4315 and consent of instructor.

Graduate Medicinal Chemistry: Natural Products

4316 Epidermal Drug Delivery in Medicinal Chemistry 15 h.
Lectures, examiner meetings, and discussion of special relevance to medicinal chemistry and drug design. Prerequisite: 4300.

4326 Vertebrate Physiology for Medicinal Chemists 10 h.
Discipline of comparative physiology in the areas of medicinal chemistry and natural products. Prerequisite: 4302.

4326 Biochemical and Biophysical Chemistry 10 h.
Advanced biochemical and biophysical chemistry. Prerequisite: 4316.

4330 Medicinal Chemistry and Biopharmaceutics 11 h.
Advanced treatment of selected topics in medicinal chemistry and biopharmaceutics. Prerequisites: 4300 and 4326.

4351 Advanced Medicinal Chemistry 10 h.
Advanced treatment of selected topics in medicinal chemistry and biopharmaceutics. Prerequisites: 4300 and 4326.

4357 Seminar 10 h.
Current literature and new developments in areas of medicinal chemistry and biopharmaceutics. May be repeated.

4393 Aspects of Biologic Drug Theory 9 h.
Applications of modern chemical theory to molecular level interactions of endogenous and exogenous factors. Prerequisites: 4326 or 4330. Consent of instructor. Consent of instructor.

4394 Modern Medicinal Chemistry: Complex Macromolecules 9 h.
Discussed from current literature. Prerequisites: 4326 or 4330, and consent of instructor.

4395 Medicinal Chemistry Survey 9 h.
Discussed from current literature. Applications of modern chemical theory to molecular level interactions of endogenous and exogenous factors. Prerequisites: 4326 or 4330, and consent of instructor.

4397 Medicinal Chemistry: Natural Products Seminar 9 h.

4319 Pharmaceutical Methods 9 h.
Inclusion, distribution, isolation of primary and secondary metabolites from plants, microorganisms, and animal sources. Methods of holding and storing biological resources, emphasis on methods of initiation, including biological and pharmaceutical screening.

4325 Bioregulatory Drugs 9 h.
Drug metabolism, in vivo studies, in vitro studies, and screening. Prerequisite: consent of instructor.

4328 Research and Development in Biotechnology 9 h.
Drug discovery and development, methods in biological and pharmaceutical sciences. Prerequisite: consent of instructor.

4331 Cell Biology 9 h.
Cellular processes, animal cell cultures, and cell cultures in biotechnology. Prerequisite: consent of instructor.

4333 Theoretical Medicinal Chemistry 9 h.
Fundamentals of physical chemical concepts of structure and reactivity applied to organic medicinal agents. Prerequisites: 4302 and 4307.

4335 Medicinal Chemistry: Natural Products Seminar 9 h.

4336 Selected Topics in Medicinal Chemistry Natural Products 2 h.
A selection of papers of recent advance in the field of natural products. Prerequisite: consent of instructor.

Undergraduate Pharmaceutical Socioeconomics

4411 Pharmaceutical Health Care Systems 6 h.
A study of the health care delivery system of the United States, with emphasis on socioeconomics and the delivery of pharmaceuticals in the United States. Prerequisites: 4301 or 4302.

4439 Pharmaceutical Socioeconomics Practice 6 h.
Practicum in pharmacies in the United States, with emphasis on the socioeconomics of pharmacy. Prerequisites: 4301 or 4302.

4441 Pharmacy Systems in the United States, with emphasis on the socioeconomics of pharmacy and health policy, including the regulatory and economic nature of pharmacy and related areas of health policy. Prerequisites: 4301 or 4302.
Graduate Pharmaceutical Socioeconomics


Problems inherent in the development and marketing of new drugs. Focus on exploitation of market theory and methods to the pharmaceutical industry.

46.172 Pharmaceutical Economics 4.b.

Analyze of economic environments of the pharmaceutical industry, focus on all levels of drug distribution, and related matters on the use of economics in drug pricing. Focus on the study of these environments.

46.173 Pharmaceutical Socioeconomics: Basic 24.b.

Selected readings and discussion of recent research in the economic and social dimensions. May be repeated.

46.211 Pharmaceutical Socioeconomics Research 4.c.

46.212 Pharmaceutical Socioeconomics Research 4.d.

Basic approaches to the solution of problems in pharmaceutical administration. Emphasis on research methods and techniques. 225-220 or equivalent. Prerequisites: 77272 or 46.172.

46.254 Pharmaceutical Socioeconomics: Health Economics 4.e.

Analysis of supply and demand of health resources and influence of national payment on medical care utilization database. Cost-benefit analysis of health programs and marginal considerations in health services employment. pharmaceutical chemicals in the relationship to health care system.

Undergraduate Clinical-Hospital Pharmacy

46.309 Hospital Pharmacy 20.b.

Required. Conducted primarily in community pharmacies. Interns are responsible for the accuracy and timeliness of records related to prescription drug information and drug distribution. Inpatient pharmacy rotations: three weeks in each rotation. Prerequisites: 46.130 and 46.140.

46.410 Clinical Pharmacy Drug Information 24.b.

Interpretation of drug interaction research and drug safety information. Prerequisite: 46.110 and 46.140.

46.420 Clinical Pharmacy: Family Practice 24.b.

Electives: primary care therapeutics, including lectures and clinical problem sessions in Family Practice offices. Prerequisites: 46.110 and P4 standing.


Electives: includes consultation in the drug therapy of infants, children, women, and other clinical diseases. Prerequisites: 46.110 and P4 standing.

46.450 Hospital Pharmacy: Radiopharmacy 24.b.

Electives: includes pharmaceutical basis for design, chemistry, preparation, quality control and clinical application of radiopharmaceuticals. Prerequisites: 46.110 and P4 standing.

46.470 Clinical Pharmacy: Surgical Therapeutics 24.b.

Electives: includes lectures and clinical pharmacy experience in pharmacotherapeutics on a general surgery unit. Prerequisites: 46.110 and P4 standing.

46.480 Clinical Pharmacy: Geriatric Therapeutics 24.b.

Pharmacotherapeutics and administrative component of geriatric clinical pharmacy practice.

46.570 Clinical Pharmacy: Nephrology 24.b.

Pharmacotherapeutics and pathophysiology of renal disease and ambulatory pharmacy practice.

46.601 Clinical Pharmacy: Nephrology 24.b.

Selected readings in health care facilities. May be repeated, pre-requisites 46.110 and consent of instructor.

46.610 Clinical Pharmacy Case Study 24.b.

Introduction to selected diseases and their treatment: clinical manifestations, procedures of drug therapy, and complications. Emphasis on use of references. Prerequisites: 77.105, 46.110, and 77.101.

46.710 Clinical Pharmacy Therapeutics 24.b.

Pharmacotherapeutics of liver and kidney diseases. Emphasis on care of patients. Prerequisites: 46.110.

46.720 Clinical Pharmacy Therapeutics 24.b.

Pharmacotherapeutics of diseases most commonly encountered in patients with cardiac disease, complications of disease. Prerequisites: 46.110.

46.730 Clinical Pharmacy Therapeutics 24.b.

In-depth discussion of selected topics dealing with clinical use of specific drugs. Selected seminars. Prerequisites: 46.131 and 77.101.

46.740 Clinical Pharmacy: Psychopharmacology 24.b.

Lectures and laboratory coursework concerned with rational use of psychopharmacologic agents for the treatment of psychologic disorders. Prerequisites: P4 or graduate standing.

Graduate Clinical-Hospital Pharmacy

46.477 Hospital Pharmacy Survey 24.b.

Hospital as part of Adirondack health care system: financing, planning, administration, organization, and management, with particular attention to pre-hospital, ambulatory, and hospital based health care delivery. Prerequisites: 46.110 and 46.140.

46.507 Hospital Pharmacy Survey 24.b.

Survey of pharmacy practice in hospital pharmacies: review of pharmacy practice, pharmacy practice, and health care delivery. Prerequisites: 46.110 and 46.140.

46.508 Hospital Pharmacy Survey 24.b.

Survey of pharmacy practice in hospital pharmacies: review of pharmacy practice, pharmacy practice, and health care delivery. Prerequisites: 46.110 and 46.140.
Continuing Education

The Division of Continuing Education was established by special legislation of the General Assembly of Iowa to "render a larger service to the Commonwealth and to the people of Iowa by carrying out to every part of the State the knowledge, the thought, the ideals and the spirit of the several departments and colleges of the University and by bringing the University generally into direct contact with the citizen." The division's organization and services include:

Center for Credit Programs

Correspondence Courses
Correspondence courses are available for credit toward a degree, for preparation for special occupations, or for self-improvement. Students resident at The University of Iowa must obtain the permission of the dean of their college to enroll in correspondence courses for degree credit. Correspondence study is offered in accounting, American studies, anthropology, business administration, chemistry, classics, economics, education, English, French, geography, Greek, history, home economics, journalism, Latin, letters, mathematics, music, physical education, police science, political science, psychology, religion, social work, sociology, Spanish, and speech and dramatic art.

There is a $5 enrollment fee. The course fee is $25 per semester hour. Fees are payable at the time of registration. A catalog including procedure and enrollment forms may be obtained from Correspondence Study, W400 East Hall.

In cooperation with the United Department of Defense, the University offers many correspondence courses to men and women in the armed services. Armed services personnel should ask their education officer for information.

Veterans may enroll for correspondence courses concurrently with other academic study under Public Law 52-540. Veterans are referred to Veterans Affairs Office of the University.

Off-Campus Classes
The division offers off-campus classes in liberal arts, business administration, education, and engineering. Classes are scheduled at the request of public school officials, or where professional, industrial, or other qualified groups indicate a specific need for educational services. Courses offered in business administration and engineering are scheduled on a contractual basis; courses in liberal arts and education usually require a minimum of 20 enrollments. For information, write to the Center for Credit Programs, W400 East Hall.

Saturday and Evening Class Program
This program provides credit course offerings for part-time undergraduate, graduate, or unclassified students. Courses are offered from all schools and departments of the University. For a Saturday and Evening Class Program, write to Saturday and Evening Class Program, W400 East Hall.

Bachelor of Liberal Studies Degree
The Bachelor of Liberal Studies degree is designed to serve adults who cannot attend college as full-time, on-campus students. Credit toward the degree, which is awarded by the College of Liberal Arts, may be earned through correspondence study, Saturday and evening classes, off-campus courses, and newspaper, radio, and television courses. For information, write to the
Center for Credit Programs. W400 East Hall.

Education Tests
Standardized tests and scales developed at the University of Iowa are published and distributed on a nonprofit basis to schools, public agencies, and industrial firms in Iowa and throughout the nation. For catalogs, write to Education Tests, C20 East Hall.

Center for Conferences and Institutes
The center serves as the principal agency of the University for developing, coordinating, and conducting noncredit continuing education programs for nonresident adults and for administering the University's Continuing Education Unit (CEU) program. The center's primary goal is to enhance the usefulness of the University as a center of learning and to provide educational opportunities for people who are no longer full-time students but who seek new knowledge related to their jobs, professions, or special interests.

Each year more than 30,000 adults receive training in the center's varied programs, which represent a cooperative endeavor between the center and the various colleges, departments, and disciplines within the University. The marketing of appropriate resources, coupled with the professional planning and execution of conferences and other short-term training programs, helps to ensure the achievement of the educational objectives specified for each program.

The director of conferences is responsible for approving and conducting or coordinating all conferences, institutes, short courses, and other noncredit continuing education offerings held in the Iowa Memorial Union for other than on-campus student groups. All members of the faculty and staff who plan University conferences and other University-related group functions to be held on campus (or in the Iowa City-Coralville community) are expected to consult these activities through the conference center office and to utilize the conference facilities, dining services, and lodging accommodations at the Iowa Memorial Union, to the extent they are available and appropriate.

Adult Education
Noncredit Program
This open enrollment program provides a wide variety of noncredit short-course offerings of special interest to adults. Courses are normally conducted at the Iowa Memorial Union during evening hours by University-affiliated instructors. Continuing education units are awarded for course completion. For current offerings, contact the Center for Conferences and Institutes.

Radio Broadcasting Services
WUIU and KGSP-FM serve the needs and interests of the people of eastern Iowa with 18 hours of daily broadcasting which extends the resources and activities of the University. The broadcast schedule consists of educational, cultural, and informational programming not available elsewhere. As an affiliate of National Public Radio (NPR), WUIU contributes program material to a national network of more than 200 non-commercial radio stations. The main studio and offices are located in 3300 Engineering Building, and a free copy of the station's Program Guide may be obtained by writing to that address.

Institute of Public Affairs
The mission of the Institute is to help improve state, city and county governments in Iowa by serving as the primary research and continuing education link between the University and those governments. Services of the institute are available to state and local government agencies and to citizen groups interested in civic affairs. The institute has a full-time research and training staff. Through the institute, other resources of the University are applied to problems faced by Iowa public officials. The institute also works in close cooperation with organizations of public officials such as the League of Iowa Municipalities and the Iowa State Association of Counties.

The institute provides:
In-service training and continuing education services to public personnel; primarily managers and supervisors, offering a wide variety of courses and programs aimed at meeting individual and organization needs as well as professional goals; Research services, informational resources, and publications ranging from practical handbooks to issue papers; and Consultation services, ranging from answering "how-to" questions to serving on statewide government committees dealing with major concerns of state and local governments.

Bureau of Police Science
The bureau offers a series of law enforcement courses through correspondence study:

00504 Criminal Investigation 3 cb.
00641 Police Procedures 3 cb.
00614 Traffic Control 3 cb.

These courses are offered by correspondence only. In addition, the bureau offers a variety of services to law enforcement including service and promotional examinations, general administrative or specialized training, and specialized training programs. It also carries out research projects in areas of public safety. Upon request by the Iowa Department of Public Safety, it performs background investigations, administrative surveys, and record services.

Iowa Community Service and Continuing Education Program
The Division of Continuing Education serves as administrative and fiscal agent for the Iowa Community Service and Continuing Education Program, a cooperative state-federal program to expand the continuing education services of colleges and universities toward solving community problems, meeting continuing education needs of adults, and planning for resource
Affiliating, a state advisory council assists in identifying community problems and coordinates education needs, recommends appropriate institutional activities, and approves proposed projects submitted by colleges and universities in Iowa. The program was authorized by the U.S. Congress in Title II of the Higher Education Act of 1965.

Office of Community College Affairs
The Office of Community College Affairs (OCCA), which is closely aligned with the College of Education, is the liaison office between the University and Iowa’s area community and vocational-technical colleges. In activities involving discipline articulation and student services, OCCA extends its services to the private two- and four-year colleges in the state. The office serves these educational systems and their respective personnel in these ways:

- Provides liaison between the University and statewide professional educator associations as well as selected regional and national organizations, and conducts relevant research;
- Facilitates university-community college faculty relations;
- Coordinates articulation of university-community college institutional policy and curricula;
- Provides in-service training and development opportunities for community college personnel, and assists the College of Education and other University colleges and departments in providing degree programs for community college personnel leading to state certification;
- Participates in state, regional, and national approval, accreditation, and recognition activities;
- Provides regular information, consultation, and coordination services for specialized groups of community college personnel and students;
- Provides peer counseling outreach programs to prospective community college transfer students; and
- Coordinates consultation and information services for community college transfer students who enroll in the University.

INPOD
The Iowa Network for Personnel and Organizational Development (INPOD), staffed and administered by the Office of Community College Affairs, is a project of the Iowa Area Schools Consortium. INPOD is a state and regional reference and referral center for staff, training, and organizational development resources, serving the fifteen Iowa Area Schools, Region Universities, private higher educational institutions, public and private educational institutions, public agencies, business and labor. INPOD’s resource types include human, audio-visual, printed, packaged modules, and workshops. Beside processing requests for information, INPOD also publishes a monthly calendar of training and development activities and a monthly newsletter.

Iowa Lakeside Laboratory
The Division of Continuing Education has general administrative supervision of the Iowa Lakeside Laboratory, a summer laboratory for the biological sciences in Lake Okoboji, where a cooperative program in teaching and research is carried on under the auspices of Iowa State University, 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 are available. For information, write to the Division of Continuing Education.

Macbride Field Campus
The University holds a lease from the U.S. Army Corps of Engineers on two tracts of land in the Coralville Reservoir area north of Iowa City. The two tracts total approximately 860 acres. One tract is reserved for biological research, the other for University-wide activities. Developments in the area to date include provision of access roads, water supply, electric power, maintenance storage facilities, a boathouse and sailing facilities, field archery course, facilities for handicapped persons, and picnic area. A small nature lodge is available to school groups.

Audio/Visual Center
The mission of the Audiovisual Center is to assist the faculty and students in the improvement of the teaching-learning process through the effective use of educational media. To accomplish this objective, the Audiovisual Center provides assistance in instructional development, media production, and the utilization of audiovisual materials and equipment. These include:

- Instructional Development
The Audiovisual Center staff is able to assist faculty and staff in the designing and planning of learning materials and media, in locating materials for specific disciplines, and in developing strategies for utilizing media.

- Media Services
The Audiovisual Center Media Library provides a major collection of filmstrip films, available on campus without charge for instruction and current instructional activities, and for rental to off-campus requestors. Smaller collections of audio and video recordings, filmstrips, and slides, plus facilities for student or faculty utilization, are also available. Catalogs of these collections are available upon request. The library also maintains a reference collection of materials from other sources.

Equipment Services makes available without charge for instructional use film, slide, filmstrip, opaque, and overhead projectors; portable projection screens; audio tape recorders; record players; portable public-address systems; and display devices (exhibits, easels, boards). There is a nominal charge for projectionist service and for equipment requested for conference or day off-campus use. Repair service is available at a nominal charge for all AV equipment, including TV systems.
Media Production

Professional services, facilities, and equipment are available to produce original software in all media:

- Graphics—design, layout, paste-up, illustrations, charts, graphs, lettering, etc.
- Audio—recording, editing, duplication, transcription service
- Motion picture—script, cinematography, editing, complete processing and printing laboratory
- Photography—portraits, passports, slides shows, filmstrips, 35mm slide duplication, complete printing and processing services
- Television—video production, color and black-and-white (1-inch and cassettex), systems design, equipment maintenance, portable rental
- Fabrication—design and construction of displays, specialized audiovisual equipment and furniture

Satellite Centers

Satellite centers are established, as needs arise, through cooperative arrangements between the Audiovisual Center and departments, schools, colleges, and other service agencies. Satellite centers currently include the Medical Audiovisual Center, Dental Audiovisual Center, Nursing Audiovisual Center, the Educational Media Laboratory, and the Music Audiovisual Center.
Administrative Officers

State Board of Regents
The University of Iowa, Iowa State University of Science and Technology, the University of Northern Iowa, the Iowa Braille and Sight-Saving School, and the Iowa School for the Deaf are governed by the State Board of Regents, consisting of nine members. The board membership is as follows:
President: Mary Louise Petersen, Harlan
Ray V. Bailey, Millford
Ann Jorgensen, Garrison
Constance Belin, Des Moines
S.J. Brownlee, Emmetsburg
Percy G. Harris, Cedar Rapids
Donald Shaw, Davenport
Arthur Nee, Carroll
Peter J. Weststrand, Essex
Executive secretary: R. Wayne Richey

Central Administration
President: Willard L. Boyd
Vice-President for Academic Affairs and Dean of Faculties: May Braddock
Vice-President for Educational Development and Research and Dean of the Graduate College: Duane C. Spriestersbach
Vice-President for Finance and University Services: Randall P. Besancon
Vice-President for Student Services and Dean of Academic Affairs: Philip G. Hubbard

Academic Affairs
Vice-President and Dean of Faculties: May Braddock
College of Business Administration
Dean: J. Richard Zecher
Industrial Relations Institute Director: Anthony J. Sinicrope
Institute for Economic Research Director: Gerald Barnard
Institute for Insurance Education and Research Director: Emmett J. Vaughan
Institute for Entrepreneurial Management: Clifford Baumbach

Labor Center: Emmett J. Vaughan
Management Center: Emmett J. Vaughan

College of Dentistry
Dean: James H. McLeran
Dows Institute for Dental Research
Director: Ian MacKenzie

College of Education
Dean: Charles W. Cass
Iowa Institute for School Executives
Director: George A. Cline

College of Engineering
Dean: Robert G. Hering
Institute of Hydraulic Research Director: John F. Kennedy

Graduate College
Dean: Duane C. Spriestersbach
Dean of Advanced Studies: Rudolph W. Schutz

College of Law
Dean: N. William Hines

College of Liberal Arts
Dean: Howard Leiter
School of Art and Art History Director: Wallace J. Tomselli
School of Journalism Director: Kenneth Starck
School of Letters Acting Director: Richard Lloyd-Jones
School of Library Science Acting Director: Carl F. Ogden
School of Music Director: Marilyn F. Sandefur
School of Religion Director: John P. Boyle
School of Social Work Director: Ruth A. Brandwein

College of Medicine
Dean: John H. Eickstein

College of Nursing
Dean:

College of Pharmacy
Dean: Dale E. Wurster
Student Health
Director: Harley G. Fidick
State Services for Crippled Children
Director: John C. MacQueen

General University
Alumni Association
Executive Director: Thomas Brown
University of Iowa Foundation
Executive Director: Darrell D. Wyrick
The following persons held University of Iowa faculty appointments with the rank of instructor, assistant professor, associate professor, or professor May 1, 1980. In this listing, the year of first appointment follows the departmental identification, and the year of present appointment is given in parentheses. 


Abbad, Francene, Bacalauréat Christian Brothers’ School (Egypt) 1948, FNS Cairo (Egypt) 1948, M.B.B.Ch. Ain Shams (Egypt) 1955; professor, Internal Medicine/Physiology and Biophysics, 1966 (1965)

Abel, Charles M., B.A. Monze toya 1962, M.S.W. Nebraska 1964; adjunct assistant professor, School of Social Work, 1965 (1973)

Abrams, Michael E., B.A. Luther 1963, M.D. Iowa 1967; clinical assistant professor, Family Practice, IP2 (1977)

Abu-Yousef, Monzer M., M.B., B.Ch. Cairo (Egypt) 1970; assistant professor, Radiology, 1980


Adams, C. Morrie, B.A. Northern Iowa 1961, M.S.W. Nebraska 1960; adjunct instructor, School of Social Work, 1980


Alkin, Judith P., B.A. Oregon 1968, M.A. 1969, Ph.D. California (Berkeley) 1974; assistant professor, German, 1976

Aker, Ronald L., B.S. Indiana State 1960, M.A. Kent State 1961; Ph.D. Kentucky 1966; professor, Sociology, 1974


Alcorn, Marie D., B.S. Iowa State 1948, M.D. Creighton 1950; clinical assistant professor; Family Practice, 1975

Alden, L. Elizabeth, B.A. Lawrence 1941, M.A. Mills 1943, Ph.D. Wayne State 1980; associate professor, Home Economics, 1963

Alexander, Bruce, B.S. Drake 1974, Pharm.D. Minnesota 1978; clinical assistant professor, Pharmacy, 1974


Alexander, Michael R., B.S. University of the Pacific 1965, M.S. 1971;
Clin, John T., B.A. Georgetown 1969, M.A. Wisconsin 1970, Ph.D. 1971; assistant professor, Hospital and Health Administration, 1977
Clayton, Gwenn H., R.S. Dartmouth 1957, M.D. Washington (Hissar 1977; assistant professor, Intemal Medicine, 1978 (1977)
Clancy, John, L., M.D. Coombe Hospital (Ireland) 1947, M.D. University College Dublin (Ireland) 1954, M.B.B.Ch. Naasai (Ireland) 1949; professor, Pathology, 1953 (1956)
Clements, William W., B.A. Allemania 1955, B.D. Union Theological Seminary (New York) 1959, Ph.D. School of Thelology at Claremont 1972; associate professor, Family Practice, 1977
Clifton, James A., B.A. Vonderbilt 1944, M.A. 1947; assistant professor, Internal Medicine, 1955 (1963)
Cochran, Grace, B.A. Swarthmore 1917, Ph.D. Iowa 1930; professor emerita, French and Italian, 1930 (1966)
Collinson, Kathleen, B.A. Iowa 1968, M.S.W. 1970; adjunct instructor, School of Social Work, 1979
Conlon, Donald J., D.D.S. Iowa 1967; adjunct assistant professor, Pediatrics, 1977
Cook, Robert A., T.S. Kansas 1945, M.D. 1952, Ph.D. 1957; associate professor, Pathology, 1957
Cooper, George W., B.A. Williams 1969, master's, Harvard 1971, Ph.D. 1975; assistant professor, Internal Medicine, 1977
Corrigan, Michael B., B.S. Capital 1963, M.D. Ohio State 1965; associate professor, Internal Medicine, 1975 (1978)
Cotler, Hubert V., B.A. Manchester D. 1939, M.A. Minna State 1942, Ph.D. Illinois 1945; professor, Communication and Theatre 3.16, 1969
Correy, Maurer A., D.D.S. Iowa 1960; adjunct instructor, Preventive and Community Dentistry, 1977
Dave, Bhaskar J., M.D. Bombay (India) 1967, clinical investigator, Psychiatry, 1970
Davis, Mary F., B.S.N. North Carolina 1953, M.P.H. 1971; clinical instructor, Nursing, 1974
Dean, K. L., B.A. West Virginia 1929, M.S. Iowa 1931, Ph.D. 1936; associate professor, Zoology, 1947 (1965)
de Chaca, Edmund, B.A. Wash 1929, M.A. California (Los Angeles) 1929, Ph.D. Chicago 1941; professor emeritus, Spanish and Portuguese, 1963 (1977)
DeGowin, Elmer L., B.A. Michigan 1925, M.D. 1929; professor emeritus, Internal Medicine, 1956 (1979)
DeGowin, Richard L., M.D. Chicago 1956; professor, Medicine/Pathology, 1958 (1978)
de Garavelli, William, B.S. Southwestern Louisiana 1949, M.D. Tidine 1951; clinical assistant professor, Orthopaedic Surgery, 1954
DeKock, Henry C., B.A. Central (Iowa) 1928, M.A. Iowa 1934; professor emeritus, Educational Administration, 1948 (1969)
 Delougbo, Stan, Ph.D. Athens (Greece) 1950, M.A. 1956, Ph.D. Cornell (Ithaca) 1958; professor, English/Comparative Literature, 1966 (1973)
Denburg, Jeffrey L., B.A. Amherst 1965, Ph.D. Johns Hopkins 1970; assistant professor, Zoology, 1977
Didonna, Gerald F., B.A. Harvard 1960, M.D. Tufts 1964; professor, Internal Medicine, 1965 (1975)
Dillig, John B., B.A. Rhode Island School of Design 1959; associate professor, School of Art and Art History, 1975 (1978)
Dixon, Hans C., B.S. Alberta (Canada) 1971, M.D. 1971; clinical assistant professor, Pediatrics, 1977
Donelson, Mary P., B.S.N. Ohio State 1962, M.S.N. '67; associate professor, Rehabilitation, 1969 (1975)
professor, Economics, 1974 (1978)
Kennedy, James A., B.S. Wisconsin 1943, M.D. 1945; clinical assistant professor, Psychiatry, 1969
Kennedy, James F., D.D.S. Iowa 1964; adjunct assistant professor, Family Dentistry, 1970
Kerr, Alexander C., B.A. Yale 1930, M.A. Wisconsin 1933, Ph.D. 1936; professor, Philosophy, 1936 (1962)
Kerr, Warren L., B.S. Iowa 1941, M.S. 1946; associate professor, Pharmacy, 1947 (1967)
Khahab, Nabil, B.A. Bethel 1960, M.A. Yale 1963; Ph.D. 1963; associate professor, Computer Science, 1970
Kiviat, George C., D.S. Iowa 1956; adjunct assistant professor, Oral Pathology and Radiology, 1996 (1975)
Kilpatrick, Franklin, B.S. Ch. Minnesota 1941, M.P.H. 1943; associate professor, Preventive Medicine and Environmental Health, 1961 (1972)
Kisler, C. Thomas, B.A. Johns Hopkins school, M.D. Cincinnati 1942; professor, Pediatrics, 1973 (1973)
Kittelmann, Peter K., B.S. National Technical University of Athens (Greece) 1974, M.S. Massachusetts Institute of Technology 1976, Ph.D. 1976; assistant professor, Energy Engineering, 1979
Klassen, Lyn L., A.B. '67, M.D. Kansas 1973; assistant professor, Internal Medicine, 1977 (1979)
kleinfield, Margaret, A.B. Rochester 1972, Ph.D. Syracuse 1975; Ph.D. 1975; associate professor; Mathematics, 1969 (1979)
Kloke, Donald D., B.S. Iowa State Teachers College 1934, M.A. Iowa 1941, Ph.D. 1948; associate professor
emeritus, Physical Education, 1948 (1971)
Knauss, Tache M., B.A. Iowa 1910, M.A. 1911, Ph.D. 1921; assistant professor emeritus, French and Italian, 1918 (1927)
Knorr, George, Diploma Institute of Technology (Germany) 1864, Ph.D. Munich (Germany) 1862; professor, Physics and Astronomy, 1867 (1974)
Koels, Paul G., B.A. St. Ambrose 1955, M.D. St. Louis 1960; clinical assistant professor, Pediatrics, 1979
Kollros, Jerry J., B.S. Chicago 1938, Ph.D. 1942; professor, Zoology, 1948 (1967)
Koontz, Franklin F., B. B. Maryland 1909, M.S. 1910, Ph.D. 1912; professor, Pathology/Preventive Medicine and Biostatistics, 1914 (1960)
Koranda, Frank C., M.D. Illinois 1958; assistant professor, Dermatology, 1980 (1986)
Korczak, Abram Roman, B.S. Drexel (Netherlands) 1953, M.S. 1955, Ph.D. 1957; assistant professor, Information Engineering, 1957
Koutras, Konstantinos, B.S., M.S. Colorado 1971, Ph.D. 1975; assistant professor, Geography, 1975
Kraus, Fred H., B.S. Iowa 1933, M.D. 1936; associate professor, Ophthalmology, 1974 (1979)
Krebs, Marvin D., Ph.D. Florida State 1974; associate professor, Sociology, 1975 (1977)
Kudler, John M., B.A. Drake 1971, M.A. Arkansas 1973; medical librarian, Hospital and Health Administration, 1976
Kuhn, Jerry N., B.S., B.Ed. Central Missouri 1948, M.S.E. 1951, Ph.D. Iowa 1954; associate professor, Elementary Education/Food and Nutrition Education, 1954 (1964)
Kumar, Samuel P., M.B.B.S. Osmania Medical (India) 1969; clinical assistant professor, Internal Medicine, 1978
Kuesack, James M., B.A. Iowa 1966, M.A. 1974; instructor, School of Library Science, 1979
Kwong, Wen-ho, M.D. B.S. Osmania Medical (India) 1961, M.D. 1965; clinical assistant professor, 1970 (1975)
Labrecque, Douglas R., B.S. Boston University 1970; assistant professor, Internal Medicine, 1977
Lachmanbruch, Peter A., B.A. California (Los Angeles) 1956, M.S. Lehigh 1951, Ph.D. California (Los Angeles) 1961; professor, Preventive Medicine and Environmental Health/Statistics, 1976

ACADEMIC PERSONNEL
Lytle, Herbert G., B.A. City College of New York 1918, M.A. Columbia 1919, Ph.D. Wisconsin 1929; associate professor emeritus, German, 1928 (1982) 
Macapagal, Matilde C., Ph.D. Columbia (Argentina) 1940, M.S. 1948; assistant professor, Mathematics, 1957 (1974) 
MacCoun, Nancy Lawrence, B.A. Park 1933, M.S. Iowa 1938, Ph.D. 1943; assistant professor emeritus, Preventive Medicine and Environmental Health, 1939 (1968) 
MacGregor, John K., B.A. Cornell 1941, M.D. Columbia 1964; lecturer assistant professor, Surgery, 1974 
Marsh, John H., A.B. Dartmouth 1965, M.D. Jefferson Medical College 1969; assistant professor, Internal Medicine, 1976 
Maddux, Donald H., B.S., M.S., M.D. Loyola 1944, N.S.M.E. Purdue 1948, Ph.D. 1955; professor, Epidemiology, 1964 (1960) 
Maharry, Randall R., B.A. Iowa 1964, M.D. 1968; assistant professor, Dermatology, 1979 
Mansour, Vincent W., D.D.S. Creighton 1971; assistant instructor, Preventive and Community Dentistry, 1980 
Marcus, Samuel L., B.A. Wisconsin 1962, M.D. 1969; professor, Internal Medicine, 1973 (1968) 
Mark Ality, L., B.A. Iowa 1957, M.D. 1961; professor, Internal Medicine, 1961 (1973) 
Marlin, Christopher R., B.Sc. Adelaide (Australia) 1974; assistant professor, Computer Science, 1976 
Marine, George B., B.S. Bradley 1945, M.D. 1947; assistant clinical professor, Family Practice, 1976 
Marlowe, A., M.D. Indiana 1963; assistant professor, Family Practice, 1976 
Martin, Betty L., B.S. Minnesota 1961, M.S. 1963; Ph.D. Iowa 1967; assistant professor, Nursing, 1974 
Martin, Fred, B.A. Auckland (New Zealand) 1964, M.A. North Carolina
Summers, Robert W., B.S. Michigan State 1956; M.D. Iowa 1959; associate professor, Internal Medicine, 1972 (1974)
Swan, Dave K., B.S. Wisconsin 1960; M.D. Washington (Seattle) 1965; assistant professor, Anesthesiology, 1979.
Swanson, Leslie W., M.D. Iowa 1936; clinical professor, Internal Medicine, 1976.
Tennant, Raymond M., M.D. Family Medicine and Medicine (France) 1951; assistant professor, Pediatrics, 1977.
Testa, Francis J., B.S. Drewel 1968, M.S. 1970; Ph.D. 1972; instructor, Health Education.
Thompson, Ernest O., B.A. Nebraska 1946, M.D. 1947; professor, Internal Medicine, 1951 (1962).
Theuk, Walter C., B.S. South Dakota 1969; assistant professor, History.
N.D. 1946; professor, Surgery, 1946 (1953)
Ziska, James H., B.S. College of St. Thomas 1963, M.D. Iowa 1967; clinical assistant professor, Pediatrics, 1979
Zivkovich, Veljko K., M.D. Belgrade (Yugoslavia) 1963; clinical assistant professor, Pediatrics, 1973
The following is extracted from the Board of Regents section of the Iowa Administrative Code as of March 18, 1980:

Residence
720—1.4(262)
Classification of residents and nonresidents for admission and fee purposes.

1.4(1) General.
Students enrolling at one of the three state institutions shall be classified as resident or nonresident for academic, fee and tuition purposes by the registrar. The enrollment shall be based upon information submitted by the student and of other relevant information. The registrar is authorized to require such written documents, affidavits, statements, or other evidence necessary to establish the domicile of a student, including proof of parental relationship, ownership of realty or residence, occupation, or other economic information establishing that a student is exempt from paying the nonresident fee to upon the student.

For purposes of resident and nonresident classifications, the word "parents" as hereinafter shall include legal guardians or others standing in loco parentis in the absence of a military or legal guardian, or other person to whom applicable law has been transferred to perform the duties of parents to the student.

1.4(2) Residence for tuition purposes.
Rules regarding residence for administrative, fee and tuition purposes are generally divided into two major categories: those that apply to students who are at least 21 years of age and those who are under the age of 21. The residence requirements for students in these categories are different. Domicile within the state means the residence of the student as a least permanent home and includes personal presence within the state. The two categories are discussed in more detail below.

1.4(3) Students who are minors.
The residence of a minor shall be that of the parents or person to whom the student is a ward, except in extraordinary cases where emancipation can be proved beyond question. The residence of the child during the lifetime of the natural parents and after his death, the residence of the mother, or the residence of the emancipated child, is not the domicile of the student for purposes of admission or tuition payment purposes.

Iowa Administrative Code: Board of Regents
1.4.(G) General facts.

The officer of the court, the court, and the duty of the court to determine the residence classification of a minor student shall be determined under these rules irrespective of the classification of the spouse. Married students under eighteen years of age shall be determined to have attained majority as of the date of their marriage.

Persons who are born into the state as the result of military or civil order from the government, or the minor children of such persons, are entitled to resident status. However, if the birth of the person is not reported to the time of the beginning of the semester, then the birth is to be considered to have occurred when the birth certificate of the person is filed in the state.

Persons who are born into the state as the result of military or civil order from the government, or the minor children of such persons, are entitled to resident status. However, if the birth of the person is not reported to the time of the beginning of the semester, then the birth is to be considered to have occurred when the birth certificate of the person is filed in the state.

Dependents of persons whose age resides in permanently established in this state, who have been classified as residents for tuition purposes may continue to be classified as residents as long as such residence is maintained even though circumstances may require extended absences of valid persons from this state. It is required that persons who claim as home residence while living in another state or country will provide proof of the continual home domicile such as an affidavit or evidence that they have not acquired a domicile in another state, or they have maintained a continuous voting record in that state, or they have filed regular income taxes returns during their absence from the state.

Ownership of property in Iowa, or the payment of Iowa taxes, does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

All students not classified as resident students shall be classified as nonresidents of the state for tuition purposes.

1.4.(G) Guidelines

The following guidelines are used in determining the resident classification of a student for tuition purposes.

a. An unmarried minor student claiming emancipation may be required to file any or all of the following: (1) a statement from the student describing the employment and expected sources of support as a minor; or (2) a statement from the student's employer (a) proving the student is working and (b) that the student is at least fifteen years old and that the student will be at least fifteen years old by the beginning of the next semester. (3) A statement from the parent who might be familiar with the student's situation.

b. A student who is deemed to be emancipated will be required to meet the same tests as a student in determining I-I-M resident classifications.

2. A minor student whose parent or parents are not from Iowa and the student is an invalid or handicapped child is provided the student maintains consistent enrollment, regardless of the age of the student. Minor students whose parents move from Iowa during their last year or high school will be considered resident provided that they have not established residence in another state.

3. A minor student who moves to Iowa after the time of the student or student's income tax returns during their absence from the state. Ownership of property in Iowa, or the payment of Iowa taxes, does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

1.4.(G) Guidelines

The following guidelines are used in determining the resident classification of a student for tuition purposes.

a. An unmarried minor student claiming emancipation may be required to file any or all of the following: (1) a statement from the student describing the employment and expected sources of support as a minor; or (2) a statement from the student's employer (a) proving the student is working and (b) that the student is at least fifteen years old and that the student will be at least fifteen years old by the beginning of the next semester. (3) A statement from the parent who might be familiar with the student's situation.

b. A student who is deemed to be emancipated will be required to meet the same tests as a student in determining I-I-M resident classifications.

2. A minor student whose parent or parents are not from Iowa and the student is an invalid or handicapped child is provided the student maintains consistent enrollment, regardless of the age of the student. Minor students whose parents move from Iowa during their last year or high school will be considered resident provided that they have not established residence in another state.

3. A minor student who moves to Iowa after the time of the student or student's income tax returns during their absence from the state. Ownership of property in Iowa, or the payment of Iowa taxes, does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.

A student from another state who has enrolled for a full program or approximately a full program in any type of educational institution will be presumed to be in Iowa primarily for educational purposes, and will be considered not to have established residence in Iowa. Continuous residence in Iowa during the registration period at the educational institution in the state does not itself establish residence.
1.4(7) Review committee.

The decision of the registrar on the residence of a student for admission, fees and tuition purposes may be appealed to a review committee. The meeting of the review committee may be appealed to the board of regents.

720-1.5(262) Registration and transcripts—general.

A person may not be permitted to register for a course or courses at a state board of higher institution until any requisite application listed in the person to as institution in any affiliated organization for which an institution has a formal agreement has been paid. A state board or an affiliated institution may withdraw a certificate of approval to a student's official record for an institution at any affiliated organization for which an institution has a formal agreement has been paid. This rule is intended to implement section 58.0 of the act.


720-1.1(262) Admission of freshman students.

A student desiring admission must meet the requirements in this rule and also state specific requirements for the curriculum, school or college of his choice. He must submit a formal application for admission and must have the secondary school provide a certificate of high school credits, including a complete statement of the applicant's high school record, rank in class, scores on standardized tests and certification of high school graduation. The applicant must also submit any other evidence such as a certificate of health that may be required by the individual institution of higher learning.

1.1(2) A graduate of an approved high school who has the proper subject-matter background, who is in the upper quartile of his class, who is an excellent student, and who meets specific curricular requirements will generally be admitted upon certification of graduation, if he or she applies for admission.

A candidate for admission in the upper one-third of his or her graduating class may be required to take special examinations and may offer a review of his or her entire record and at the discretion of the admissions officer (his or her designee) may be admitted conditionally. He may be assigned a specific work load for a limited period during a summer session or be required to attend an orientation seminar. He or she will be admitted subject to subsequent certification of completion of high school.

1.2(2) A graduate of an accredited high school in another state must meet at least the approx. standards as a graduate of a Iowa high school. The options for admission by graduation or enrollment may not be open to these students. Each college reserves the right to determine higher standards from graduates of other high schools.

1.3(2) A graduate of a nonaccredited high school must submit all of his courses required for admission to determine general competency to do college work. Evidence of specific competency for admission to a given curriculum will also be required.

"Competent" for the determination of general competency to do college work are determined by the Iowa university curriculum and college and graduation requirements and are compatible for all three state institutions. Competent is limited to those who are acceptable to at least three, but due to different specific curricular requirements, does not guarantee admission to either of the other two.

720-1.2(262) Admission of undergraduate students by transfer from other colleges.

1.2(1) Students from accredited colleges and universities.

Transfer of credit will be given full value if coming from colleges or universities accredited by the North Central Association of Colleges and Secondary Schools or any other regional accrediting agencies. For schools that specifically require a specific course of instruction, the following courses of study shall be considered: English composition, basic education, history and social studies, mathematics, science, fine arts, foreign language, and any other courses of study at the discretion of the admissions officer.

1.2(2) Admission Rules Common to the Three State Universities.

720-1.3(262) Application deadlines.

Applications for admission must submit the required application forms and the following official transcripts and other required documents to the admissions officer of the appropriate college at least ten days prior to the beginning of orientation for the college to which they apply. Application forms for admission from students who are not from subversive countries, shall be considered unless the student cannot be considered competent for admission to the college to which the student is applying. This rule does not apply to the college of Medicine and Dental of The University of Iowa and the
Supplemental Specific Rules for The University of Iowa

The following requirements are in addition to those given in regents based laws.

720–2.1(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 by the director of admissions. Students may not be registered until they have been issued an admission statement by the director of admissions.

720–2.3(262) College of Business Administration.

2.3(1) Application for admission.

Applications for admission to the College of Business Administration should be submitted to the Director of Admissions.

Applications are required to apply as early as possible, since this will give the admissions committee more time to review applications. Closing dates for reviewing applications will be announced in advance in the opening dates of any session.

Applicants for admission to the College of Business Administration are encouraged to complete a program leading to a baccalaureate degree before entering the College. Applicants should consider a combined program of liberal arts and business which would qualify them for a baccalaureate degree upon the completion of the freshman year in the College. Preference will be given to those students who have the baccalaureate degree or who have completed the requirements for the degree in a combined program.

Applications for admission to the College of Business Administration must be submitted to the Director of Admissions.

Closing dates for reviewing applications will be announced in advance in the opening dates 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. Achieved scores on the University's required examinations.

3. Maintained a satisfactory grade-point average on all courses undertaken and on all courses undertaken at The University of Iowa, and on all courses undertaken in business and economics. Applications from students who have obtained a satisfactory grade point average on all courses undertaken in business and economics are recommended above others. The College of Business Administration is designed for the student who has had a broad background in business and economics.

All new undergraduate students must complete the American College Testing Program tests, the Scholastic Aptitude Test (SAT) or the equivalent as determined by the admissions office before the opening of instruction for the session in which they register.

720–2.4(262) College of Dentistry.

2.4(1) Application for admission.

Interested applicants regarding admission to the College of Dentistry, University of Iowa, are encouraged to apply as early as possible. Closing dates for reviewing applications will be announced in advance in the opening dates of any session.

Applicants for admission to the College of Dentistry are encouraged to complete a program leading to a baccalaureate degree before entering the College. Applicants should consult the College of Liberal Arts and Sciences for a baccalaureate degree in the field of your choice. Preference will be given to those students who have the baccalaureate degree or who have completed the requirements for the degree in a combined program.

Applications for admission to the College of Dentistry must be submitted to the Director of Admissions.

Closing dates for reviewing applications will be announced in advance in the opening dates of any session.

2.4(2) Advanced standing.

Applications for advanced standing are handled as individual cases.

2.5(1) Admission of freshman students.

The applicant must meet all entrance requirements. Applicants are encouraged to begin high school exercise in mathematics, specifically algebra, which is recommended for the student who is planning to attend college.

Applications for first-year students should be submitted to the Director of Admissions.

Closing dates for reviewing applications will be announced in advance in the opening dates of any session.

2.5(2) Admission of transfer students.

Transfer students who have completed the requirements for admission to the College of Dentistry in a five-year program prior to seeking admission to the 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 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 interview with members of the admissions committee.

All applicants must complete the General Application Test sponsored by the Council on Dental Education of the American Dental Association, Tests are given three times annually. The University of Iowa is a testing center.

To receive early selection, applicants for admission to the College of Dentistry are urged to complete the application form no later than October to enable the admissions committee to begin its selection in December.

Accepted applicants are required to make the required deposit within two weeks after notification of favorable action on their applications. This deposit is not refundable but is credited toward the first year's payment. The applicants who fail to make this deposit within the time specified forfeit their place in the entering class.

Applying for admission to the College of Dentistry are required to submit a written physical examination report to the University Student Health Service within two weeks following notification of acceptance.

Applicants must also complete an annual physical examination before beginning registration.

2.5(3) Admission of transfer students.

Applications for advanced standing are handled as individual cases.

2.5(4) Admission of first-year students.

Closing dates for reviewing applications will be announced in advance in the opening dates of any session.

2.5(5) Admission of transfer students.
2.5(2) Admission of undergraduate students by transfer.

The applicant must submit a regular application and official transcript of college work. Each applicant should have:

a. Met the minimum admission requirements for admission to the College of Medicine.

b. Achieved satisfactory average on all college work undertaken.

From applicants who do not meet the above requirements, the baccalaureate or admissions committee will review individual records and may offer probationary admission.

2.6(262) Graduate College.

Graduate of any college or university accredited by regional accrediting association may be admitted to the Graduate College. Admission to the Graduate College does not in itself mean that the candidate is a candidate for an advanced degree. Such a candidate must file an application and be admitted to the Graduate College.

2.7(262) College of Medicine.

2.7(1) Application for admission.

Address all inquiries regarding admission to the Director of Admissions, University of Iowa, Iowa City, Iowa 52242, or the College of Medicine by letter or call the office of admissions. Applications for admission must be received before the College of Medicine can take the appropriate action. The College of Medicine will not accept applications by mail at the summer session or the fall semester. The deadline for receiving applications will be published in advance of the opening date of any session.

To be considered for admission, an applicant should have obtained a cumulative grade-point average of at least 3.3 in college work undertaken.

The grade-point average is based upon The University of Iowa's marking system in which a grade of "A" is equivalent to four points. Other marking systems will be evaluated on the 4.0 scale.

The deadline for the receipt of applications for admission is usually January 15 for fall semester and May 15 for fall semester. Applicants for admission who meet the requirements for admission to the College of Medicine are admitted upon the submission of the required documents.

2.7(2) Admission with advanced standing.

A transfer student may be eligible for admission if he/she has attended a school approved by the Association of American Medical Schools (AAMC) in good standing for a period of time equal to the period of time for which he/she has applied for admission to the College of Medicine. Such a student may be eligible for admission if he/she has completed a degree program in a related field such as behavioral sciences, public health, or a related field.

The deadline for the receipt of applications for admission with advanced standing is May 15 for fall semester. The deadline for the receipt of applications for admission with advanced standing is May 15 for fall semester.

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, Iowa City, Iowa 52242, or the College of Medicine by letter or call the office of admissions. Applications for admission must be received before the College of Medicine can take the appropriate action. The College of Medicine will not accept applications by mail at the summer session or the fall semester. The deadline for receiving applications will be published in advance of the opening date of any session.

To be considered for admission, an applicant should have obtained a cumulative grade-point average of at least 3.3 in college work undertaken.
2.6(2) Admission to advanced standing.
If their preparation to enter a college of medicine would not make an advanced requirement of this college, students from other accredited medical colleges may be admitted to advanced standing according to the following conditions.

i. Only applicants of high achievement will be considered.

2.9(1) General basis for admission.
The specific requirements for admission are outlined in the College of Pharmacy. From those applicants who meet the minimum requirements, the admissions committee will select the applicants who, in their judgment, appear to be best qualified.

2.9(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 thirty-two semester hours of college level work exclusive of credit in military and air science and physical education. The thirty-two semester hours must include:

a. Communications skills. Applicants must have demonstrated satisfactory achievement in communication skills according to the requirements of the College of Liberal Arts at the University of Iowa. Applicants from other institutions may meet this requirement by presenting six semester hours of credit in English composition and rhetoric and two semester hours of credit in speech or an equivalent freshman-year course in communication skills.

b. Anatomic chemistry and quantitative analysis, eight semester hours.

c. College mathematics, eight semester hours.

d. Physics or zoology, eight semester hours.

Students who wish to enter College of Pharmacy should meet the requirements of the College of Administration 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 2.0 or "C" average in the prerequisite and required courses. Students must also meet the minimum grade point average of 2.0 based on the University of Iowa's grading system in which the grade of "A" is equivalent to four points. Applicants for admission and the required official transcripts should be filed before March 1 for the class to enter the College of Pharmacy in September.
Index

For information about the admission requirements, degree requirements (such as credit requirements, course requirements, and scholarship requirements), and college policies (such as those regarding deadlines, grading, pass-fail courses, auditing courses, class attendance, probation and dismissal, and recognition for academic achievement) of the respective colleges, see these pages: Liberal Arts, 33-47 Business Administration, 255-259 Dentistry, 276-277 Education, 292-298 Engineering, 332-338 Graduate, 363-375 Law, 376-380 Medicine, 381-387 Nursing, 425-429 Pharmacy, 432-434

A
Academic advising offices, 7 Academic career counselors, 26 Academic personnel, 444 Academic records, 3 Accounting, 259 Accreditation and associations, 2 Administrative Code, Iowa, Board of Regents, 490 Administrative officers, 441 Admission, general University, 3 Admission requirements (Liberal Arts), 37 Admissions, Office of, 7 Adult Education Noncredit Program, 436 Advanced Placement Program, 48 Aerospace Military Studies (Air Force ROTC), 48 Afro-American Culture, Institute in, 51 Afro-American Studies, 48 Agricultural Medicine, Institute of, 416 American Studies, 53 Anatomy, 387 Anesthesia, 389 Anthropology, 386 Applied Mathematical Science, 153 Art and Art History, 26, 59 Art Museum, 25 Arts Center Outreach, 27 Arts, Iowa Center for the, 23 Asian Languages and Literature, 66 Associated Medical Sciences, Division of, 389 Astronomy, Physics and, 169 Audiovisual Center, 439

B
Biochemistry (graduate), 308 Biochemistry (undergraduate), 70 Biology, 71 Biomedical Engineering, 308 Biophysics, Physiology and, 416 Botany, 72 Broadcasting and Film, 86 Business Administration, College of, 286 Business Education, 281

C
Campus Information Center, 7 Cabin Center, 382 Cardiovascular Research Center, 382 Career Services and Placement Center, 7 Center for Credit Programs, 347 Chemical and Materials Engineering, 339 Chemistry, 75 Child Behavior and Development, Institute of, 23 Children's Reading Clinic, 28 Chinese (Asian Languages and Literatures), 98 Civil and Environmental Engineering, 341 Classics, 77 Clinical Management Concepts (Dentistry), 277 Clinical Research Center (Medicine), 382 Code of Student Life, 2 College policies (Liberal Arts), 44 Communication (major in), 83 Communication and Theatre Arts, 81 Communication Education, 82 Communication Research, 84 Communication Studies, 89 Communication Study, Iowa Center for, 127 Community College Affairs, 8, 439 Community Service and Continuing Education Program, 438 Comparative Legislative Research Center, 196 Comparative Literature, 90 Computer Engineering, Electrical and, 343

Computer Science, 154 Computing Center, Weeg, 22 Conferences and Institutes, Center for, 438 Continuing Education, Distance of, 437 Cooperative Education Program, 8 Correspondence Courses, 437 Counseling Service, University, 8 Counseling Education, 296 Course requirements (Liberal Arts), 38 Credit by examination, 48 Credit requirements (Liberal Arts), 38 Criminal Justice and Corrections (Sociology), 228 CUTE Program, 293

D
Dance Company, University, 27 Dance, Physical Education and, 162 Degrees offered, University, 2; College of Liberal Arts, 3; Graduate College, 363 Degree requirements (Liberal Arts), 38 Dental Health Education, Bureau of, 16 Dental Hygiene, 277 Dental Service, 8 Dentistry, College of, 276 Dermatology, 388 Diabetes Center, 382 Dietetic Internship, 388

E
Political Research, Laboratory for, 196
Political Science, 194
Portuguese, Spanish and, 230
Postsecondary and Continuing Education, 3-18
Preventive Medicine and Environmental Health, 418
Professional Societies, 3
Psychiatric Hospital, 19
Psychiatry, 420
Psychological Disorders of Children, Center for Research on, 382
Psychology, 198
Public Affairs, Institute of, 438
Public Affairs, M.A. program, 185
Publications and Printing Service, 29
Public Information, Office of, 29

R
Radiation Biology, 421
Radio broadcasting services (WUJ-I-KSUS, 438
Radiology, 422
Reading Lab, 9
Recreational Services, 50
Recreational Education, 205
Registrar, 10
Religion, 206
Removable Prosthodontics, 290
Research activities, University, 21
Research and Development, Office of Vice-President for, 21
Research Council, University, 21
Reserve Officers Training Program (ROTC), Air Force, 49, Army, 165
Residence halls, University, 12
Rhetorical Studies, 84
Rhetoric Program, 212
Russian, 212

S
Senkrit (Asian Languages and Literature), 96
Saturday and Evening Class Program, 437
Scanning Electron Microscope Laboratory, 22
Scholarship requirements for graduation (Liberal Arts), 44
Science Education, 214
Secondary Education, 321
Social Foundations of Education, 326
Social Science Data Archive, 196
Social Studies Education, 219
Social Work, 220
Sociology, 225
Sororities, 12
Spanish and Portuguese, 230
Special Education, 327
Special Support Services, 10
Speech and Hearing Clinic, University, 10, 18
Speech Pathology and Audiology, Department of, 238
Speech Pathology and Audiology, Council on, 18
Sponsored Programs, Division of, 10, 23
State Services for Crippled Children, 19
Statistics, 180
Student Activities, 10
Student services, 7
Surgery, 422
Systems Engineering, Division of, 360

T
Teacher Education Programs, 292
Theatre Arts, Communication and, 81
Theatre Arts (major in), 87
Toxicology Center, 382
Transcripts, 10
Travel Abroad, Overseas Study and, 9, 29
Tuition and fees, 4

U
University Hospitals and Clinics, 17
University House, 23
University of Iowa Alumni Association, 30
University of Iowa Foundation, 30
University of Iowa Health Center, 17
University Press, 26
University Relations, Office of, 29
University Theatre, 26
Urban and Regional Planning, 244
Urban and Regional Research, 23
Urban Community Research Center, 27
Urban Growth in Developing Countries, 247
Urban Transportation, 247
Urology, 423

V
Veterans Administration Medical Center, 20
Veterans Services, 10
Video Center, 23

W
Windhover Press, 27
Women's Resource and Action Center, 13
Women's Studies, 248
Writing Lab, 11
Writers workshops, 27, 98