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The University of Iowa General Catalog 1982-84

University of Iowa

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The University of Iowa
General Catalog 1982-84

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the Iowa Memorial Union at a cost of $3.
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This Catalog is published for
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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. The brochure, Information for
Prospective Students, and the pamphlet,
Information for Prospective Graduate
Students, also include information on
admission, fees, scholarships, student
aid, residence, and student personnel
services.
### University Calendar

#### First Semester

<table>
<thead>
<tr>
<th>Event</th>
<th>1982-83</th>
<th>1983-84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration begins</td>
<td>August 23</td>
<td>August 22</td>
</tr>
<tr>
<td>Classes begin</td>
<td>August 25</td>
<td>August 24</td>
</tr>
<tr>
<td>University holiday</td>
<td>September 6</td>
<td>September 5</td>
</tr>
<tr>
<td>Homecoming</td>
<td>October 2</td>
<td>November 24</td>
</tr>
<tr>
<td>Thanksgiving recess</td>
<td>November 24</td>
<td>November 23</td>
</tr>
<tr>
<td>University holidays</td>
<td>November 25-26</td>
<td>November 24-25</td>
</tr>
<tr>
<td>Classes resume</td>
<td>November 29</td>
<td>November 28</td>
</tr>
<tr>
<td>Classes end</td>
<td>December 10</td>
<td>December 9</td>
</tr>
<tr>
<td>Examination week</td>
<td>December 13-17</td>
<td>December 12-16</td>
</tr>
<tr>
<td>Commencement</td>
<td>December 18</td>
<td>December 17</td>
</tr>
<tr>
<td>University holidays</td>
<td>December 23-24</td>
<td>December 26-27</td>
</tr>
<tr>
<td>University holiday</td>
<td>December 31</td>
<td>January 2</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Event</th>
<th>1982-83</th>
<th>1983-84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration begins</td>
<td>January 13</td>
<td>January 12</td>
</tr>
<tr>
<td>Classes begin</td>
<td>January 17</td>
<td>January 16</td>
</tr>
<tr>
<td>Foundation Day</td>
<td>February 25</td>
<td>February 25</td>
</tr>
<tr>
<td>Spring vacation begins</td>
<td>March 16</td>
<td>March 17</td>
</tr>
<tr>
<td>Saturday classes only meet</td>
<td>March 16</td>
<td>March 17</td>
</tr>
<tr>
<td>Classes resume</td>
<td>March 28</td>
<td>March 28</td>
</tr>
<tr>
<td>Classes end</td>
<td>May 8</td>
<td>May 4</td>
</tr>
<tr>
<td>Examination week</td>
<td>May 9-13</td>
<td>May 7-11</td>
</tr>
<tr>
<td>Commencement</td>
<td>May 14</td>
<td>May 12</td>
</tr>
<tr>
<td>University holiday</td>
<td>May 30</td>
<td>May 28</td>
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#### Summer Session

<table>
<thead>
<tr>
<th>Event</th>
<th>1983</th>
<th>1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>June 6</td>
<td>June 11</td>
</tr>
<tr>
<td>Classes begin</td>
<td>June 7</td>
<td>June 12</td>
</tr>
<tr>
<td>University holiday</td>
<td>July 6</td>
<td>July 4</td>
</tr>
<tr>
<td>Session ends</td>
<td>July 29</td>
<td>August 3</td>
</tr>
<tr>
<td>Commencement</td>
<td>July 29</td>
<td>August 3</td>
</tr>
<tr>
<td>Independent Study Unit opens</td>
<td>August 1</td>
<td>August 6</td>
</tr>
<tr>
<td>for law and graduate students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close of Independent Study Unit</td>
<td>August 10</td>
<td>August 24</td>
</tr>
</tbody>
</table>
Contents

General Information ........................................ 1
Services for Students ....................................... 7
Housing .................................................... 11
Financial .................................................... 13
The University of Iowa Health Center .................... 15
Research Activities ......................................... 18
The Iowa Center for the Arts ............................... 22
General Services ........................................... 25
Libraries ...................................................... 28
College of Liberal Arts ..................................... 30
College of Business Administration ....................... 227
College of Dentistry ....................................... 242
College of Education ....................................... 257
College of Engineering .................................... 296
Graduate College .......................................... 322
College of Law ............................................. 335
College of Medicine ....................................... 339
College of Nursing ........................................ 378
College of Pharmacy ....................................... 384
Continuing Education ....................................... 389
Administrative Officers ..................................... 392
Academic Personnel ....................................... 394
Iowa Administrative Code: Board of Regents ............... 424
Map .......................................................... 429
Index ......................................................... 431
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 six schools: Art and Art History, Journalism and Mass Communication, 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 a number of interdisciplinary courses. Total University enrollment during 1981-82 was about 29,400 students.

Founded in February 25, 1847. The University of Iowa is the state's oldest and highest institution of higher education. It supplied the first law school west of the Mississippi River. It was the country's first state university to admit women and men on an equal basis, which it did from its opening in 1855. It was the first state university to accept creative work in lieu of the traditional academic thesis for graduate degrees in the arts and sciences. The present system of graduate studies and the teaching of research in various fields, including physics, economics, and the teaching of composition, and in graduate programs in speech, dramatic art, and music, is still in effect.

The UI faculty includes some 1,800 full-time members, many of whom have established national and international reputations. Their effectiveness as teachers is enhanced by their involvement in scholarly and scientific research. The University seeks to foster faculty vitality by maintaining a healthy balance between teaching and research, and between undergraduate and graduate or professional instruction.

The University's undergraduate enrollment is balanced equally among men and women students. Approximately four out of five undergraduates are Iowa residents. The rest are students from all other 49 states and more than 90 foreign countries.

About 65 percent of the University's entering freshmen had a B average or above in high school. Approximately 85 percent ranked in the upper half of their high school classes and about 30 percent ranked in the upper tenth.

The University of Iowa offers a comprehensive program of student financial aids. Half of the University's students have some form of employment. One-fifth have education loans. One out of ten undergraduates and one of five seniors 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 scholastic 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 to Saturday and evening classes offered on campus and credit courses taught off campus. In 1977 the University, in cooperation with Iowa's other two state universities, introduced a new Bachelor of Liberal Studies (B.L.S.) 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 General Studies, 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 Physics, Bachelor of Science in Nursing, Bachelor of Dental Surgery, Juris Doctor, Doctor of Medicine, Master of Arts, Master of Business Administration, Master of Fine Arts, Master of Social Work, Master of Arts in Teaching, Education Specialist, Doctor of Musical Arts, Doctor of Pharmacy, and Doctor of Philosophy.
Accreditation and Association

The University of Iowa has been accredited by the North Central Association of Colleges and Secondary Schools since the association's organization in 1919. The university is a member of the Association of American Universities. It is associated with the universities of Northwestern Illinois, Purdue, Ohio State, and Michigan State universities, and the universities of Wisconsin and Michigan in the Western (Big Ten) Conference. It is associated with these 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
Dentistry—American Dental Association
Education—National Council for Accreditation of Teacher Education
Department of Public Instruction
Engineering—The Accreditation Board for Engineering and Technology (ABET), American Association of Engineering Societies (AAES)
Law—American Bar Association
Association of American Law Schools
Medicine—Liaison Committee on Medical Education, representing the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC)
Nursing—National League for Nursing
Pharmacy—American Council on Pharmaceutical Education

Schools
Journalism—American Council on Education in Journalism
Liberal 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—Commission on Dental Accreditation
Dentistry—American Dental Association
Hospital and Health Administration—Accrediting Commission on Education for Health Service Administration

Medical Technology—Committee for Allied Health Education and Accreditation of the American Medical Association
Physician 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 Medicine Technology—Committee for Allied Health Education and Accreditation of the American Medical Association
Psychology—American Psychological Association
Speech Pathology and Audiology—American Speech, Language, 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 Unit of from one to four additional weeks for students in the Graduate College and the College of Law.

Code of Student Life
As members of the academic community students are encouraged to develop a capacity for critical judgment and to engage in a sustained and independent search for truth. Freedom to teach and freedom to learn are inseparable facets of academic freedom. The freedom to learn depends upon appropriate opportunities and conditions in the classrooms, the campus, and in the larger community. Students are expected to exercise their freedom to learn with responsibility, and accordingly, the University has developed a Code of Student Life to provide and safeguard the right of every individual student to exercise fully freedom to learn without undue interference by others. This code applies only where a student's misconduct has adversely affected some University process or function or some other distinct 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 differences in the treatment of persons because of race, creed, color, national origin, age, sex, and any other classifications that 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 shall work cooperatively with the community in furthering this principle.

Student Complaints Concerning Faculty Actions
Student complaints concerning actions of faculty members are pursed first through the informal mechanisms established in each college for this purpose. Although there is some variation among colleges, these mechanisms generally involve the following steps: (1) The student should first attempt to resolve the issue with the faculty member involved. (2) If a satisfactory outcome, the student should turn to the departmental executive officer, if any. (3) If a satisfactory outcome is not obtained, the student may take the matter to the college dean. In addition, graduate students should consult with the Associate Dean for Academic Affairs in the Graduate College concerning mechanisms for resolving complaints. Some colleges (Business Administration, Dentistry, Education, Engineering, Law and Nursing) also have established an ombudsman system as an alternative mechanism for handling student complaints. Information concerning the informal mechanisms established in a specific college is available in the college dean's office or CAC office.

If a student complaint concerning faculty actions cannot be resolved through the informal mechanisms available, the student may file a formal complaint which will be handled under the procedures established for dealing with alleged violations of the Statement of Ethics and Academic Responsibilities as specified in section 20:206 of the University of Iowa Student手册. A description of these formal procedures can be obtained from each college dean's office, collegiate ombudsmen, the Liberal Arts Advisory Office, the Undergraduate Advising Center, or the office of the College of Association Council.
Policy on Sexual Harassment
Under the Rape and Sexual Harassment Policy, the University of Iowa's Human Rights Policy, Faculty, staff, and students try to be free from sexual harassment by colleagues, superiors, or teachers. The University will not condone actions and words which a reasonable person would regard as sexually harassing or coercive.

Individuals who feel that they have been the objects of such harassment should advise their supervisor, dean, or The University of Iowa's Affirmative Action Officer. In investigating such complaints, the following principles will be observed:

That the person bringing the complaint would suffer no retaliation;
That the complaint would be discussed with anyone with the complaint's permission;
That if permission was given to pursue and investigate the complaint, that such an investigation would be conducted by the head of the major administrative unit in which the complaint was brought or a designee of the head administrator;
That in conducting such an investigation, the right to confidentiality, both of the complainant and of the accused, would be respected;
That the investigation would be conducted as quickly as possible and the results reported to the complainant;
That in the event the complaint is found to be valid, that the person that has been guilty of sexual harassment will receive appropriate counseling or discipline. The University reserves the right to bring legal action in the case of instances of violation of University policy.

University Marking System

| Test | Designation | Grade Points | Semester Hour
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>superior</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>close 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>honorsplus</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>honors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>no grade assigned</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>passing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>audit</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>satisfactory</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>unsatisfactory</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

"(Not used in computing grade-point average)"

Recognition of High Scholastic Achievement
The University recognizes high scholastic achievement by awarding degrees "with mention," "with distinction," and "with highest distinction," based on these criteria:

- University
- Other Colleges

<table>
<thead>
<tr>
<th>University</th>
<th>Other Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>3.50 GPA</td>
</tr>
<tr>
<td>Mention</td>
<td>3.00-3.49 GPA</td>
</tr>
<tr>
<td>Distinction</td>
<td>3.50-3.99 GPA</td>
</tr>
</tbody>
</table>

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, Motor Board, and Delta Eta Delta Kappa are professional honorary and professional societies in which The University of Iowa has active chapters.

Applying for Admission
Correspondence regarding admission to any collet of The University of Iowa should be addressed to the Admissions Office, 1082 Collie 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 for all 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. 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
Applicants for admission must submit the required application documents to the Office of Admissions by the deadlines stated 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, March 1 for fall semester, September 1 for spring semester
- College of Dentistry—November 50, fall session 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—January 15 for fall semester, June 15 for spring semester.
- College of Pharmacy—March 1, fall semester only
- Dental Hygiene Program—March 1, fall semester only
- Physical Therapy Certification Program—February 1, fall semester only
- Physician Assistant Program—January 15, summer session only
- Teacher Education Program—June 1 for the following 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 application process includes the application procedures and submittal dates specified for all other students. For information, students should contact the Admissions Office by the dates given above.

Graduate College—Students applying to the University of Iowa for financial assistance (scholarships, fellowships, assistantships) should:
- 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 15 for fall semester, October 1 for spring semester

Colleges of Business Administration, Engineering, Liberal Arts:
- March 1 for the summer session, April 15 for the fall semester, October 1 for the spring semester
GENERAL INFORMATION

Applications to all colleges and programs must meet the deadlines set forth above.

Foreign applicants whose native language is not English must complete and submit results from the Test of English as a Foreign Language (TOEFL) unless they have received a degree from an accredited college or university in the United States, United Kingdom, English-speaking Africa, Canada (except Quebec), Australia, or New Zealand. A minimum TOEFL score of 460 is required for admission into the Graduate College. Newly admitted graduate students who score less than 550 on the TOEFL exam must complete an English proficiency evaluation prior to their first registration. Together with their academic advisors, graduate students determine whether or not they should enroll in English as a Foreign Language (EFL) course work.

Undergraduate applicants to all colleges, except the College of Engineering, must submit TOEFL scores of at least 480 prior to their initial registration. The College of Engineering requires TOEFL scores of at least 530 for admission. All newly admitted undergraduates are required to complete EFL course work recommended by the Department of Linguistics as a result of the English proficiency evaluation. Students must complete the required EFL course work prior to enrolling in the rhetoric course which appears on their admission statement.

ACT Test Scores

The University of Iowa requires all entering 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 conditionally on the condition that they do not meet a basic minimum score for the test.

Placement—as a basis for selecting some students from certain basic course requirements and 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 or retaining the several authorized scholarships and loans.

Academic advising evaluation. However, ACT scores must be submitted prior to registration. Anyone interested in applying for undergraduate admission at The University of Iowa should complete the ACT tests during the fall prior to his or her anticipated registration. Applicants who have completed the tests but did not have their scores background to the university should request this reporting from the Records Section, American College Testing Program, Box 451, Iowa City, Iowa 52240. Further information, including testing dates and location, may be obtained from their high school or college counselors, or from the ACT Program.

Graduate and Professional College Examinations

Prospective Graduate College applicants should take the Graduate Record Examination (GRE) Aptitude Test II; GRE: 1 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 requires that all students enrolling in the University as residents or nonresidents of Iowa, according to criteria established by the 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.

Tuition and Fees

The following is the University's schedule of tuition and fees, per semester, for the academic year 1982-83:

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Ph.D. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>hours credits</td>
<td>hour credits</td>
<td>hours credits</td>
</tr>
<tr>
<td>8 55.0 5 60.0</td>
<td>134.0 8</td>
<td>146.0 8</td>
</tr>
<tr>
<td>7 54.0 6 59.0</td>
<td>133.0 8</td>
<td>143.0 8</td>
</tr>
<tr>
<td>6 53.0 7 50.0</td>
<td>132.0 8</td>
<td>141.0 8</td>
</tr>
<tr>
<td>5 52.0 8 41.0</td>
<td>131.0 8</td>
<td>139.0 8</td>
</tr>
<tr>
<td>4 51.0 9 32.0</td>
<td>130.0 8</td>
<td>137.0 8</td>
</tr>
<tr>
<td>3 50.0 10 23.0</td>
<td>129.0 8</td>
<td>135.0 8</td>
</tr>
<tr>
<td>2 49.0 11 14.0</td>
<td>128.0 8</td>
<td>133.0 8</td>
</tr>
<tr>
<td>1 48.0 12.0</td>
<td>126.0 8</td>
<td>131.0 8</td>
</tr>
</tbody>
</table>

The University of Iowa is a member of the Mid-American College Consortium, which, in cooperation with the University of Illinois and the University of Wisconsin, determines resident status. The University of Iowa uses the Iowa residents' status category for all students enrolled at the University. The University of Iowa is a member of the Mid-American College Consortium, which, in cooperation with the University of Illinois and the University of Wisconsin, determines resident status. The University of Iowa uses the Iowa residents' status category for all students enrolled at the University. Students who are residents of Iowa and meet the requirements established by the Mid-American College Consortium may be eligible for in-state tuition rates.

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 residence hall or fraternity/sorority housing expenses, and such incidental University expenses as library and parking fees, while on an installment basis, with billing the first of September, October, and November for the fall semester, and the first of February, March, and April for the spring.
### 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—60%; during the second week—75%; during the third week—90%; during the fourth week—95%. 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 "2-1" is the code for the course numbered 1 in the Department of Botany (2), entitled "Introduction to Botany." Courses numbered below 100 designate courses "primarily for undergraduates," numbers 100 to 199 designate courses "For undergraduates and graduates," and numbers 200 and above designate courses "primarily for graduates."

### College of Business Administration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A</td>
<td>Accounting</td>
</tr>
<tr>
<td>6E</td>
<td>Economics</td>
</tr>
<tr>
<td>6F</td>
<td>Finance</td>
</tr>
<tr>
<td>6G</td>
<td>Management Sciences</td>
</tr>
<tr>
<td>6L</td>
<td>Industrial Relations and Human Resources</td>
</tr>
<tr>
<td>6M</td>
<td>Marketing</td>
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### College of Dentistry

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>81</td>
<td>Fixed Prosthodontics</td>
</tr>
<tr>
<td>82</td>
<td>Operative Dentistry</td>
</tr>
<tr>
<td>83</td>
<td>Endodontics</td>
</tr>
<tr>
<td>84</td>
<td>Removable Prosthodontics</td>
</tr>
<tr>
<td>86</td>
<td>Oral Pathology and Diagnosis</td>
</tr>
<tr>
<td>87</td>
<td>Oral and Maxillofacial Surgery</td>
</tr>
<tr>
<td>85</td>
<td>Dental Hygiene</td>
</tr>
<tr>
<td>89</td>
<td>Orthodontics</td>
</tr>
<tr>
<td>90</td>
<td>Pedodontics</td>
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<tr>
<td>92</td>
<td>Periodontics</td>
</tr>
<tr>
<td>111</td>
<td>Preventive Community Dentistry</td>
</tr>
<tr>
<td>112</td>
<td>Dental Hygiene (departmental)</td>
</tr>
<tr>
<td>114</td>
<td>Family Dentistry</td>
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### College of Education

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>7C</td>
<td>College of 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 and 7H</td>
<td>Foundations, Psychology, and Continuing Education</td>
</tr>
<tr>
<td>7P and 7W</td>
<td>Psychological and Quantitative Foundations</td>
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### College of Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>78</td>
<td>Secondary Education</td>
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<tr>
<td>7U</td>
<td>Special Education</td>
</tr>
<tr>
<td>7X</td>
<td>Education Interdisciplinary</td>
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</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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>52x</td>
<td>Energy Engineering</td>
</tr>
<tr>
<td>54x</td>
<td>Information Engineering</td>
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<tr>
<td>55x</td>
<td>Materials Engineering</td>
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<tr>
<td>56x</td>
<td>Systems Engineering</td>
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The third digit of the course prefix denotes the academic program for which the course is offered:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>0</td>
<td>Engineering Core Courses</td>
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<tr>
<td>1</td>
<td>Biomedical Engineering</td>
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<tr>
<td>2</td>
<td>Chemical and Materials Engineering</td>
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<tr>
<td>3</td>
<td>Civil and Environmental Engineering</td>
</tr>
<tr>
<td>5</td>
<td>Electrical and Computer Engineering</td>
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<tr>
<td>6</td>
<td>Industrial and Management Engineering</td>
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<tr>
<td>7</td>
<td>Division Specialty Courses</td>
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<td>8</td>
<td>Mechanical Engineering</td>
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### College of Law

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<th>Course Code</th>
<th>Course Name</th>
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<tr>
<td>91</td>
<td>College of Law</td>
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### College of Liberal Arts

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<thead>
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<th>Course Code</th>
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<tbody>
<tr>
<td>96</td>
<td>Nondepartmental Courses</td>
</tr>
<tr>
<td>1</td>
<td>Lakeside Laboratory</td>
</tr>
<tr>
<td>1A</td>
<td>Fundamentals</td>
</tr>
<tr>
<td>1B</td>
<td>Elements of Art</td>
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<tr>
<td>1C</td>
<td>Ceramics</td>
</tr>
<tr>
<td>1D</td>
<td>Design</td>
</tr>
<tr>
<td>1E</td>
<td>Art Education</td>
</tr>
<tr>
<td>1F</td>
<td>Drawing and Illustration</td>
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<tr>
<td>1G</td>
<td>Metalworking and Jewelry</td>
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<tr>
<td>1H</td>
<td>Art History</td>
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<tr>
<td>1J</td>
<td>Multimedia</td>
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<tr>
<td>1K</td>
<td>Painting</td>
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<tr>
<td>1L</td>
<td>Photography</td>
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<td>1M</td>
<td>Pottery</td>
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<tr>
<td>1N</td>
<td>Sculpture</td>
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<tr>
<td>1P</td>
<td>Interdepartmental Art</td>
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<tr>
<td>1Q</td>
<td>Botany</td>
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<tr>
<td>1R</td>
<td>Speech Pathology and Audiology</td>
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<tr>
<td>1S</td>
<td>Chemistry</td>
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<tr>
<td>1T</td>
<td>English</td>
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<tr>
<td>1U</td>
<td>English Language and Linguistics Instruction</td>
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<tr>
<td>1V</td>
<td>English Professional</td>
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<td>1W</td>
<td>French</td>
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<tr>
<td>1X</td>
<td>Nondepartmental Courses</td>
</tr>
<tr>
<td>1Y</td>
<td>Nondepartmental Courses</td>
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<tr>
<td>1Z</td>
<td>Geology</td>
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<td>112</td>
<td>German</td>
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<td>113</td>
<td>Dutch</td>
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### OTHER COURSES

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<tr>
<td>14</td>
<td>Greek</td>
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<tr>
<td>18</td>
<td>History</td>
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<td>17</td>
<td>Home Economics</td>
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<td>18</td>
<td>Italian</td>
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<td>19</td>
<td>Journalism and Mass Communication</td>
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<tr>
<td>20</td>
<td>Latin</td>
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<tr>
<td>21</td>
<td>Liberal Science</td>
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<tr>
<td>22</td>
<td>Applied Mathematical Science</td>
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<tr>
<td>23</td>
<td>Computer Science</td>
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<tr>
<td>22A</td>
<td>Mathematics</td>
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<tr>
<td>22B</td>
<td>Statistics and Actuarial Science</td>
</tr>
<tr>
<td>23A</td>
<td>Military Science</td>
</tr>
<tr>
<td>23B</td>
<td>Aerospace Military Studies</td>
</tr>
<tr>
<td>23C</td>
<td>Museum Training</td>
</tr>
<tr>
<td>23D</td>
<td>Music</td>
</tr>
<tr>
<td>23E</td>
<td>Philosophy</td>
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<tr>
<td>23F</td>
<td>Physical Education—Field House</td>
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<tr>
<td>23G</td>
<td>Physical Education and Dance—Halsey Gym 5</td>
</tr>
<tr>
<td>23H</td>
<td>Dance</td>
</tr>
<tr>
<td>23I</td>
<td>Physics and Astronomy</td>
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<tr>
<td>23J</td>
<td>Political Science</td>
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<tr>
<td>23K</td>
<td>Psychology</td>
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<tr>
<td>23L</td>
<td>Religion</td>
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<td>33</td>
<td>Literature, Science, and the Arts</td>
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<td>34</td>
<td>Sociology</td>
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<td>35</td>
<td>Spanish</td>
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<tr>
<td>36</td>
<td>Communication and Theatre Arts</td>
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<tr>
<td>36B</td>
<td>Broadcasting and Film</td>
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<tr>
<td>36C</td>
<td>Communication</td>
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<tr>
<td>36R</td>
<td>Rhetorical Studies</td>
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<td>36T</td>
<td>Drama and Art (Theatre)</td>
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<td>37</td>
<td>Zoology</td>
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<td>38</td>
<td>Portuguese</td>
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<td>39</td>
<td>Asian Languages and Literature</td>
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<td>41</td>
<td>Japanese</td>
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<td>42</td>
<td>Social Work</td>
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<td>43</td>
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<td>45</td>
<td>American Studies</td>
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<td>46</td>
<td>Comparative Literature</td>
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<td>Science Education</td>
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<td>Social Studies</td>
</tr>
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<td>51</td>
<td>Urban and Regional Planning</td>
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<td>52</td>
<td>Anthropology</td>
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<tr>
<td>53</td>
<td>Communication Studies</td>
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### College of Medicine

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>52</td>
<td>Medicine Nondepartmental</td>
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<tr>
<td>60</td>
<td>Anatomy</td>
</tr>
<tr>
<td>51</td>
<td>Microbiology</td>
</tr>
<tr>
<td>62</td>
<td>Dermatology</td>
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</tbody>
</table>
Services for Students

Academic Advising Offices

Faculty Advisers
Each student is assigned an academic adviser to assist with educational planning, academic counselling, and registration. Students with declared majors are assigned advisers in their major departments. Students with open majors 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 advised by the college deans or their designated representatives. Graduate students are advised by their department heads and the Graduate College dean.

In addition to 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 advising 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 terms 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; refers inquiries to appropriate campus and community resources; compiles the Master Calendar of campus events; maintains the Housing Clearinghouse which provides up-to-date listings of available rental units, city and campus maps, lists of realtors, hotels, motels, and apartment complexes, and coordinates a roommate matching service. The center is open seven days a week.

Campus Programs and Student Activities

The Office of Campus Programs and Student Activities (OCPSA) provides diverse and balanced programs and activities for the Iowa Memorial Union and the campus as a whole, and assists students and student organizations.

Individual students are welcome to seek guidance from professional advisers in OCPSA about how they can become involved and find organizations aligned to their interests. Students who wish to form new groups or organizations with special needs can request guidance from OCPSA staff. Workshops and a well-stocked resource center are available to student organizations.

OCPSA also sponsors the Art Resource Center, the Recreation Area, the Student Activities Center, the Campus Information Center, and the University Box Office, all in the Iowa Memorial Union.

Career Services and Placement Center

Career Planning
Career planning advisers assist students in all stages of the career planning and decision-making process. Individual advising and career planning seminars help students define their interests, abilities, work and life-style preferences, and career goals. Advisers also help
Each semester transfer consultants and peer counselors (former community college transfer students) conduct several programs to assist new transfer students in making smooth, effective transitions to the University.

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

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

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

Dental Service
The dental clinics at The University of Iowa College of Dentistry are primarily for educational purposes. All employees of the University and students who are registered in the University may receive 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 insurance benefits. Fees are established for all treatment rendered, and patients are to pay cash.

Evaluation and Examination Service
Evaluation and Examination Service duplicates, scores, and analyzes 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 teacher or course evaluation and development; conducts institutional research projects and provides consulting services on questionnaires 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 Admission Test (GMAT), Graduate School Foreign Language Test (GSFLT), Law School Admission Test (LSAT), Test of English as a Foreign Language (TOEFL), Miller Analogies 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 registered 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, occasional 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 students in individual or family plans.

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 athletic programs include basketball, cross-country, field hockey, golf, gymnastics, softball, swimming, tennis, track and field, and volleyball.

In 1981 Women's Athletics became an official member of the Western Intercollegiate Conference (Big Ten), participating in twelve of the twenty-three sports. In 1982 women's athletics was included under the University Board in Control of Athletics.
Athletic scholarships are available to qualified athletes in all sports.

**Inttramural 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**

The Office of International Education and Services (OIES) provides services and facilities and organizes extracurricular programs for both foreign and domestic students.

The OIES maintains a library on 300^n hose for study in other countries, including some information about foreign universities and student-aid programs open to all students. The office helps students se select study- abroad programs to complement their on-campus academic programs in order to assure that students receive the correct credits. Students may also obtain information and applications for the Fulbright, Marshall, and Tabenberg awards at the OIES.

Foreign student advisors at the OIES provide information, counseling, and services in the areas of orientation, immigration regulations, financial aid, and liaison with foreign governments and sponsoring agencies. Advisors help with problems of a personal nature as well as academic advising. They sponsor or support educational programs, such as the Host Family Program and the Conversation Exchange Program, to foster closer interactions between students and scholars from other countries and their domestic counterparts.

The OIES operates the International Center, on the second floor of the Jefferson Building, where students, staff, and community members hold meetings, seminars, and social activities with an international focus.

**Iowa Memorial Union**

The Iowa Memorial Union is the hub of student life on the campus. It includes the Campus Information Center, the University Bookstore, and check cashing service, the Office of Campus Programs and Student Services, college houses with live entertainment, the Bijou Theatre, a variety of food services, recreation area with bowling, billiards, and electronic games, a barber shop, an art resource center, a bookstore, rooms for lectures, concerts, and social events, art and sculpture display areas, and, in the adjoining Iowa House, 110 guest rooms for parents, alumni, conference participants, and other visitors to the campus. Also housed in the Union are the Student Activities Center, University Counseling Services, Career Services and Placement Center, the Center for Conferences and Institutes, and a copy center.

**Orientation Services**

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

**Reading Lab**

The Reading Lab of the Rhetoric Program provides a variety of individualized instruction for any University student who wishes to improve their reading and writing performance. Students are asked to specify what reading problems they have; teachers adapt practical materials and methods to help remediate these 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, Volume 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 they need reading help. The lab service course carries no credit and assigns no grade. Ordinarily, there are no outside assignments. Developmental reading work is restricted to lab hours, and makes extensive use of lab materials and the students' own texts in other courses.

The lab also offers: 108 Rhetoric, a one-semester, two-credit course for students who need exceptional help preparing for college-level reading; and SP:30 Advanced Reading Comprehension, SP:30 Speeded Reading, and SP:40 Practical College Vocabulary, independent five-week modular courses for one semester hour of credit each.

**Registrar**

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

**Services for Handicapped**

The University of Iowa is committed to making its facilities, services, and programs fully accessible to people with handicaps. Currently 97 percent of the University is accessible to people in wheelchairs.

The Office of Services for Handicapped works closely with University faculty and staff to ensure that students receive the maximum benefit from their experience at The University of Iowa. The office provides assistance in the areas of admission, orientation, academic and career planning, academic and career support, financial aid, housing, transportation, parking, aid and attendant care, and health services. The office helps students locate tutors, personal aides, tape recorders, and emergency loan wheelchairs. The office works with Recreational Services to provide activities ranging from picnics to bowling and wheelchair basketball, and offers workshops and advice for those with handicaps on career exploration to social skills. The office assists student organizations with the handicapped student organization Restrict Us Not (R.U.N.) and student students in arranging adaptive transportation, i.e., the Bison Bus, a bus with a hydraulic lift available to students at no charge.

**Special Support Services**

The Office of Special Support Services (S.S.S.) was established to make it possible for more students to participate economically and educationally disadvantaged or colorfully different backgrounds to receive a higher education at The University of Iowa. Special Support Services provides academic, financial, and personal assistance programs.
Special Support Services is made up of the following subprograms: The Upward Bound Project, the Undergraduate Educational Opportunities Program, New Dimensions in Learning, The Educational Opportunities Professional and Graduate Programs, the Afro-American Cultural Center, and the Chicano-Native American Cultural Center.

Speech and Hearing Clinic
The University of Iowa Speech and Hearing Clinic provides services for speech, language, and hearing problems. Any University student may receive most services without charge. Services include diagnostic examinations, consultations, individual clinic sessions, small group sessions, and referrals to other clinics as needed.

Sponsored Programs
The Division of Sponsored Programs maintains a resource center which contains information on federal and nonfederal sources of funding for study and research projects by faculty and graduate students. Graduate students may inquire about tenders for advanced study, either in the United States or abroad.

The division also publishes Research and Graduate News, a section in the weekly newsletter called FYI which contains program and deadline information and carries a special section devoted to sources of funds for graduate study and research. The newsletter is available at departmental offices; further inquiries about graduate opportunities are welcome at the resource center.

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 $3 for the first copy, $1 for each additional copy on the same order. 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, servicemen, and servicewomen in matters relating to Veterans Administration educational benefits, University registration, and study at the University.

Women's Resource and Action Center
The Women's Resource and Action Center (WRAC) provides services to meet educational, cultural, social, and personal needs of University and community women. The WRAC provides a resource for many women's organizations; sponsors a Brown Bag Luncheon program; offers evening and weekend workshops, lectures, films, and classes; provides a wide variety of support groups for women; offers women one-to-one problem solving sessions; and publishes a newsletter nine times a year. The WRAC houses the Sitton-Sorcerer Truth Women's Resource Library of books and periodicals on a wide range of women's topics, and maintains an extensive information and referral service. The WRAC's Rape Victim Advocacy program provides a 24-hour crisis line for victims of rape, attempted rape, sexual harassment, and incest. WRAC also maintains information and telephone bureaus.

Writing Lab
The Writing Lab provides individualized writing experiences for any University student who feels inadequately prepared for college writing. Lab students discuss their work in personal conferences with teachers who offer comments and suggestions to help them become perceptive, critical readers of their own writing as they learn how to develop their ideas clearly and cogently.

Students may enroll for no-credit work in the Lab throughout the semester, or register for the credit course (109 Rhetoric) before or after taking a required rhetoric course, or transfer to 109 Rhetoric from another rhetoric course after discussing their writing problems with their rhetoric teacher and the director of the Writing Lab.
Housing

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 housekeepers shall rent to all students on the basis of their individual merits as persons. without exclusion or discrimination on the basis of race, creed, color, or national origin." Iowa City has a fair housing ordinance providing for equal opportunity to secure housing without discrimination due to race, religion, or national origin. A Human Relations Commission is responsible for enforcement of the ordinance and for the initiation of redress for violations of it.

University Residence Halls
Residence hall programs, policies, procedures, and employment practices are consistent with the University human rights policies, the State Board of Regents nondiscrimination policy, and, where appropriate, with the State of Iowa civil rights and federal regulations on equality of opportunity and affirmative action.

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 full or partial board are available in the Grand Avenue Residence Halls (west side of the campus), which include Hitchcock, Quadrangle, Westwater, South Quadrangle, Rienow, and Slater halls, and in the Clinton Street Residence Halls (east side of the campus), which include Burge, Currier, Daum, and Stanley halls. There are lounges, study areas, game rooms, coin laundry facilities, and mail boxes in or available to each residence hall. Computer terminals, reference book collections, browsing libraries, and private rooms for group study sessions are available in two monitored learning centers.

Each residence hall is divided into small living units. Each hall is a five-in-head resident, and there is a student resident assistant in each living unit. All students are encouraged to participate in residence hall government to plan programs and discuss issues.

Applications and Assignments
With the admission application form, prospective undergraduate students receive separate forms on which to apply for residence hall accommodations. A student applying for residence hall accommodations should read the terms and conditions of the contract, provide all information requested on the application form, sign the contract portion, and return the completed application contract with a check for $50 to the University Housing Assignment Office, Burge Hall.

Applications for residence hall housing are not considered until the applicant has been admitted to the University. Roommate assignment is made without regard to race, color, nationality, or religion.

Undergraduate students new to the University are given priority in the assignment of residence hall accommodations. The residence hall application contract and the $50 advance payment constitute a contract offer. An application may be withdrawn by notifying the University Housing Assignment Office in writing before the application becomes a binding contract. It becomes binding after June 1, if for the academic year; after December 1, if for the second semester only; after May 15, if for the summer session; or ten days after the University Housing Assignment Office issues notice of the acceptance of the contract and assignment of 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 1981-82 academic year are $1,654 for a double room and $1,883 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 789 University-operated apartments available to married students or legally defined family units in the Hawkeye Drive, Hawkeye Court, Hawkway Park, and Parkarea complexes.
Rents for 1981-82 range from $126 to $137.50 per month for one-bedroom units (there are only 41 available at the lower rate) to $177 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 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 $350 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, including large apartment complexes, smaller complexes, rooms in private homes, and one-, two-, and three-bedroom duplexes and houses.
The clearinghouse also assists you with resources to use in looking for housing, and offers a packet of helpful information for prospective residents of the area.

Fraternities
Eighteen 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 Upsilon, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Psi, Phi Kappa Sigma, Pi Kappa Alpha, Sigma Chi, Sigma Nu, Sigma Phi Epilson, Sigma Pi, and Tau Kappa Epsilon.
Professional fraternities operating chapter houses are Alpha Chi Sigma (chemistry), Alpha Kappa Kappa (medicine), Delta Sigma Delta (dentistry), Phi Beta Pi (medicine), Phi Rho Sigma (medicine), and Psi Omega (dentistry).

Sororities
The 16 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, Phi Sigma Delta Tau, Sigma Kappa, and Zeta Tau Alpha.
Financial Aid

All financial assistance available to University of Iowa students from general University sources 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. Students receiving financial aid must maintain satisfactory academic progress as determined by the Office of Student Financial Aid.

Except 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 Service (Box 1002, 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.

Except for a few designated aid programs requiring special applications, the student need 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 $2,000 per year and are renewable for a four-year period.

Freshman Honor Scholarships

Entering freshmen who qualify for participation in the University's Honors Program by achieving a composite ACT score of 29 or above are recognized as Freshman Honors Scholars and receive $100 Freshman Honor Awards.

Transfer Honor Scholarships

Iowa community college students transferring to the University with a 3.0 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 a transfer student must have at least a 3.0 cumulative grade-point average to qualify for the initial scholarship award, and must maintain at least a 3.0 average to continue the scholarship.

LaVerne Noyes Scholarships

Noyes Scholarships, covering basic fees, are 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 Aid.
Health Professions Nursing Loans
This program assists United States citizens and nationals who are living full-time to be doctors of medicine or dentistry, or studying full-time toward degrees in pharmacy or nursing. Amounts available depend on federal loan. 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 9 percent on the Health Professions Loans and 5 percent on the Nursing Student Loans.

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.

College 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, College Work-Study jobs are arranged to give students work experience related to their educational goals. College Work-Study employees may work an average of 20 hours per week.

Guaranteed Student Loans
Under either the Iowa Guaranteed Student Loan Program or the Federal Family-need Student Loan program, undergraduate students may borrow up to $1,200 a year, graduate students up to $2,500 a 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 5 percent interest, when he or she ceases to be a full-time student.

Other Sources of Aid
For information about departmental financial aid, students should inquire at the offices of the academic programs in which they are interested.

Information about Social Security educational benefits for children of persons retired, disabled, or deceased is available at all Social Security offices.

Information about Educational Aid to War Orphans is available from the Iowa Bonus Board (Shove House, Des Moines, IA 50319). As a registered 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 Health Center plays a major role in the preparation of health professionals for Iowa and the nation. In its Health Center are found the academic 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 care professionals 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 "refresher programs."

Programs, facilities, 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: to the president for statewide medical care, John W. Colston
Deputy director: Clifford M. Ooster
c Special assistant to the director: Douglas R. Wilkerson
Senior Assistant director: Richard M. Herbst, John M. Swyg
Assistant directors: Mary A. Bach, Coli E. Cleary, Joe B. Tyson
Assistant to the director for legal services: Robert D. Miller
Clinical service heads: Dr. Peter J. J. Rassbach, Anesthesiology; Dr. Donald B. Collin, Surgery; Dr. John B. Bressel, Gynecology; Dr. Robert K. S. Ries, Pediatrics; Dr. Frank Abell, Otolaryngology; Dr. James P. M. Phipps, Ophthalmology; Dr. T. C. metz, Ophthalmology; Dr. Robert C. Lee, Orthopaedics; Dr. Ron McManus, Otolaryngology and Maxillofacial Surgery; Dr. Richard G. Lynch, Pathology; Dr. Fred Smith, Pediatrics; Dr. George W. Wetscher, Psychiatry; Dr. Edward A. Friedland, Radiology; Dr. Robert Curry, Surgery; Dr. David A. Cole, Urology.

Largest university-owned teaching health-care complex in the nation, the University of Iowa Hospitals and Clinics provide the clinical base of graduate and undergraduate studies for thousands of students in the health disciplines, i.e., nursing, dentistry, medicine, 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 to pursue.

There are 1,051 beds in the hospital complex, accommodating some 40,000 admissions annually. In addition, 131 faculty clinics accommodate another 350,000 ambulatory patients each year. Nearly 15,000 major surgical procedures are performed annually in the hospitals' 20 major operating rooms. Approximately 3,000 intents are delivered every year.

Highly specialized health-care services—for example, the burn unit, heart catheterization facilities, neonatal intensive care unit—are easily accessible to Iowans who reside in communities without such resources. The hospitals' transportation fleet of 15 vehicles travels nearly two million passenger-miles each year, transporting 3,500 Iowans. The Air-Care Emergency Helicopter Service carries specially trained medical and nursing teams to and
the most critically ill and injured, and to transport them to the hospital for further care. More nurses owe their lives to this service alone.

More than 6,300 hospital staff members are involved each day in providing professional and support services needed to care for approximately 5,200 patients. The hospital's clinical staff includes nurses, physicians, and dentists. The hospital's house staff includes more than 500 resident physicians and dentists. The hospital's Department of Nursing is staffed by more than 1,100 professional nurses.

Other hospital staff members annually provide about 170,000 X-ray examinations and treatments, conduct more than three million laboratory tests, fill more than one million prescription orders, render more than 61,000 physical therapy treatments, and prepare nearly 35,000 blood and component transfusions.

Recent modernization provides new intensive care, cardiac, coronary center, and urology units. A seven-story, $15 million Boyd Tower addition went into service in 1976, providing expanded and replacement facilities for a variety of inpatient and outpatient services. The new $45 million Roy J. Carver Pavillion, named in honor of a $25 million gift from the late Masco industrialist, provides facilities for a multi-specialty trauma and emergency treatment center; physical therapy and orthopedic and neurology inpatient, clinic and faculty offices, as well as cardiology, urology, and psychiatry clinics.

University Hospitals and Clinics collaborate in conducting accredited health professional education programs in dentistry, osteopathic medicine, medical technology, nuclear medicine technology, physical therapy, physician's assistant, and cytotechnology, and provides supervised clinical settings for the University of Iowa Community College programs in nursing education, dietetics, medical laboratory technology, operating room technology, and respiratory therapy.

Of the programs cited above, those conducted collaboratively by the hospital and the colleges of medicine and nursing are described in the appropriate college sections of the Catalog. The following are conducted exclusively by University Hospitals staff: 500:091 Radiologic Technology Program 2-4 A The two-year program is divided into two one-year courses including radiography, positioning, medical terminology, radiographic physics, medical radiology, radiographic mathematics, medical terminology, radiographic photography, and radiographic production. 500:095 Optometry 2 A A 4-year program. 500:1060 Nursing 2 A A 2-year program. 500:1061 Clinical science of bloodless blood, cellular immunity, and mechanisms of the live system and 500:1062 Ophthalmology, written and oral practical national examinations required at end of 2nd year of training.

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, salaries, 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 peripheral 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 training 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.

The council coordinates clinical services in speech pathology and audiology offered at The University of Iowa and the Iowa City Veterans Administration Medical Center.

Health Occupations Education

Through this program, the University collaborates with the State Department of Public Instruction in providing counseling and advisory services, educating teachers, conducting research, and developing curricula and instructional materials for health occupations programs conducted for the most part by Iowa's 15 area community colleges, but also by a growing number of high schools. The Health Occupations Education staff also assists these institutions in their increasingly important role in continuing education.

The Health Sciences Library

The Health Sciences Library serves the combined information and research needs of the colleges of Dentistry, Medicine, Nursing, and Pharmacy, the graduate programs in Dental and Health Administration, and the Department of Speech Pathology and Audiology. The largest of the departments in the university library system, the Health Sciences Library consists of more than 170,000 volumes and receives more than 7,000 periodicals. In addition to meeting space needs 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 corner with some dating back to the fifth century in the John Martin Rare Book Room.

Health Services Research Center

See "Research Activities" section of the Catalog.

Oakdale Campus

Located seven miles northwest of Iowa City, the 500-acre Oakdale Campus includes such health related community programs as the Alcoholism Treatment Unit, Child Abuse and Neglect Resource Center, Family Dentistry and Family Practice units, Institute of Agricultural Medicine, Institute of Child Behavior and Development, portions of the Iowa Specialized Child Health Service program, and the State Hygienic Laboratory. Other health-related units on the Oakdale campus include: the Oakdale Education, the Health Services Association, the Recreation Center, Physical Therapy Program, pediatrics and psychology laboratories, and the Research Animal Care Facility. University House provides office space and related support for faculty members engaged in research or curriculum development.

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, pesticides and herbicides, toxicology, mineral analysis, and disease surveillance. The laboratory provides virological and serological diagnostic services for The University of Iowa Hospitals and Clinics and Student Health Service.

Iowa Specialized Child Health Services

At child health clinics conducted in communities throughout the state, and at University of Iowa Clinics, Iowa Specialized Child Health Services
(SOHS) provides Iowa residents under age 19 with diagnosis and evaluation services in pediatrics, orthopaedics, ophthalmology, speech pathology, audiology, and clinical and educational psychology. It helps communities sponsor clinic 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 subsidies a University of Iowa graduate training program in audiology and speech pathology.

**University Hospital School**

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

The interdisciplinary team approach provides services involving the fields of medicine, dentistry, nursing, nutrition, speech and audiology, physical and occupational therapy, activity and music therapy, psychology, social work, special education, physical education, vocational education, and vocational activities.

Outpatient services provide comprehensive evaluations and follow-up of infants, children, and young adults who have problems and/or disabilities that affect their development. Programs of education and therapy are planned in conjunction with the patient, when appropriate, and with the parents, and community-based services provide the outpatient services include a number of special clinics (Child Development Clinic, Meningomyelocele Clinic, Genetic and Metabolic Disorders Clinic, Infant and Young Child Clinic, Weight Management Clinic, Child and Young Adult Clinic) in which specially trained staff address specific problems.

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

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

Close cooperation exists with the state Developmental Disabilities Council and other state agencies in providing training and technical assistance to their programs.

The laboratories of the Division of Genetics and Biochemistry of the Department of Pediatrics are also housed in the University Hospital School and are utilized 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 habilitation 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 students in speech pathology and audiology.

**Iowa City Veterans Administration Medical Center**

Medical students and residents receive much of their clinical training in this 327-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.
The University recognizes that creative activity is an indispensable function in its teaching and research. It holds that the term "research" applies to creativity in all fields, imaginative originality, whether in the fine arts or in the sciences, and 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 Institute 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 to provide support for faculty members to cover the costs of materials, supplies, equipment, proposal writing, clerical and related assistance for specific research projects; for 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 honors and expenses of visiting lecturers.

Services

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

Central Research Facilities

To maintain state-of-the-art resources for key research activities within the University, selected facilities are identified for centrally supported development. Such facilities are available to all interested graduate students and faculty, and currently include:

Electron Probe Microanalysis (EPMA) Facility

Located in the College of Dentistry, the EPMA facility has an extensively updated Applied Research Laboratory EMX-94 electron microprobe X-ray analyzer which includes three crystal spectrometers, a Si(Li) solid state detection system and an automation...
system (PDFTM 11 computer with floppy disk storage).

The primary application of the instrumentation is to analyze chemically, usually in a nondestructive manner, materials of small dimension (1-10 cubic micrometers). The automation of the data collection and correction process produces on-line quantitative results within a few minutes for 10-12 elements per sample point. Software exists for routine quantitation of minerals, metallography and microdrop residue analysis. It has also been developed for other specimen types on a demand basis.

Recently added capabilities include automated image analysis in which, through the use of digital beam control, it is possible to automatically locate, size, and chemically characterize small objects in the scanned image. Analysis times are frequently less than two seconds per image feature. Typical applications include particulate analysis of ambient air and water samples, inclusions in metals, and mineral particulate analysis in coal or ore samples.

Demonstration capability of equipment capabilities are performed upon request and short-term feasibility studies are encouraged. Training sessions are available on request.

Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM) Facility

The TEM and SEM Facility provides instrumentation and technical assistance to researchers involved in the use of scanning and transmission electron microscopy. Equipment includes a JEOL JSM 2500F field emission-SEM, a Hitachi S-3400 scanning electron microscope equipped with STEM and a Nordan X-ray microanalysis system, a Bal-Tech SEM 2000 scanning electron microscope, an automatic thin section processor, glass knife makers, diamond knives, ultramicrotomes, a digital image analysis system, vacuum evaporators, crystal pullers, drying apparatus, light microscopy, centrifuges, ovens, darkrooms.

The facility also provides all solutions and supplies necessary for investigations involving ultramicrotomy including specialized staining and embedding techniques, metallography, light microscopy, metal-coating, autoradiography, electron microscopy, cryotomy, cryochromatography, cryoradiography, sample preparation for SEM and TEM, fractography, the preparation of material science samples for both SEM and TEM, and other procedures. A modern library contains a list of reviews of various applications of TEM and SEM is also available. The facility is intended to serve both the experienced and novice investigator and to provide training for those who need it. Alternatively, 8 or 10 parts of a project can be handled by the facility staff. All instrumentation is available on a first-come, first-served basis. The laboratory is located in the Quantum Science building.

Flow Cytometry Facility

The University of Iowa Flow Cytometry Facility provides facilities, technical personnel, and consultation services to investigators studying diverse problems in cell biology, immunology, endocrinology, hematology, cell physiology, and cell genetics. It is equipped with an advanced fluorescence-activated cell sorter (Electron-Donkin FACS) which is interfaced to computerized data acquisition and storage electronics. The flow cytometer will measure any optically detectable cellular property, such as fluorescence or size, to generate population distributions. Up to four parameters may be concurrently evaluated per cell. A variety of cellular macromolecules can be thus quantitated. Detectable parameters include two spectral regions of fluorescence, narrow and wide angle light scattering, and fluorescent polarization anisotropy. Optical excitation is done with an argon ion laser with ultra-violet capability. The instrument will physically isolate any identified cell subpopulation to yield viable cells for subsequent experimental use. The facility provides all necessary equipment for staining cells with fluorochromes, including culture, and fluorescent and phase microscopy. It is housed in the Biophysics Laboratory of the College of Medicine. Educational tours are conducted upon request.

Lasers Facility

The Iowa Laser Facility consists of a wide variety of modern instrumentation, in particular, state-of-the-art Ar-CO2 ion and Krypton ion lasers (with ultraviolet capabilities), argon ion, nitrogen, and neodymium lasers, and several high-powered argon ion lasers. The instrumentation is housed in a single large laboratory which occupies the entire first floor of the southwest wing of the Chemistry-Botany building. It includes a mechanically and thermally stable 40-foot long enclosed optical bench with a variety of work stations for users.

NMR Facility

The High Field Nuclear Magnetic Resonance (NMR) Facility

The high-field NMR facility is based on a recently acquired superconducting Bruker 360 MHz spectrometer. The instrument provides very high spectral resolution and sensitivity for study of complex molecules. Absorbance, pH, temperature, variable temperature, and selective pulse experiments are possible. Both 5 and 10 mm sample tubes may be accommodated. For the cellular user, spectra are recorded by a technician, whereas hands-on use is encouraged for the frequent user. The facility is located in the northwest ground floor area of the Chemistry-Botany building.

Computing Center

The University of Iowa Computing Center provides research and instructional computing facilities to an academic facility, and staff of the University. Located in the Lindquist Center, the Computing Center facilities are accessible through the main terminals, both batch and interactive, conveniently distributed around the campus. The computing facilities are capable of an extremely wide variety of applications, and provides network connections with off-campus facilities. Supported applications software covers such diverse areas as statistical and numerical analysis, financial modeling, text editing and formatting, graphics, and data base management. In addition to terminals and general-purpose computing systems, the Computing Center facilities for producing manuscript-quality printed and graphic output. The center provides users with non-credit educational services and consultation services on general computer use. Specialized consultation is also provided for equipment selection, laboratory support, data base, and instructional services. Detailed information on computing facilities is available from the information center.

Video Center

The University of Iowa Video Center provides high-quality video services and facilities, including equipment, supplies, and professional services in studio and field production. Video Center is coordinated by the Office of Communications and Marketing and provides high-quality video services for the University. Toward this end, the center has the personnel and facility resources to assist University units and departments in their efforts to produce and distribute video products.

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. Participating members are available to assist in identifying potential funding agencies, assist in the preparation of proposals, review, and revise proposals, and to provide technical assistance in the research, including specific technical correctness in an application. The staff also assist in processing proposals.
RESEARCH ACTIVITIES

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 administrative services to the donor, in addition to providing services and technical assistance as needed to ensure the project's success.

University House

University House began in 1977 as a program of the University of Iowa. It was a separate but related initiative. The first and most important mission was to provide academic enrichment to students. This goal was achieved in several ways. First, the program offered a variety of courses and workshops that were open to all students. Second, the program provided a forum for the exchange of ideas and information. Third, the program helped to create an environment in which academic achievement could flourish. In short, the program was designed to create a community of learners, in which students could come together to explore new ideas and to share their knowledge and understanding.

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 as faculty members in University House, and they are expected to participate in University House activities. Thanks to a large grant, University House is able to support research and other educational development activities. In addition to its role in promoting faculty development, University House seeks to bring together university centers, institutes, committees, and other groups into consortia, to develop interdisciplinary arrangements that foster the full integration of external support for research, education, and appropriate services.

University House has created a number of programs to help students and faculty members enrich their educational experience. These programs include the University Library, which includes the main library, the public library, and the special collections library; the University Laboratory, which includes the main laboratory, the public laboratory, and the special collections laboratory; the University Museum, which includes the main museum, the public museum, and the special collections museum; and the University Press, which publishes academic works in a variety of fields.

Child Behavior and Development

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

Center for Health Services Research

The Center for Health Services Research provides a program of education and research in health care policy and management. Center staff includes an interdisciplinary team of health care professionals from the University of Iowa, including faculty from the College of Medicine, the College of Dentistry, the College of Nursing, the College of Pharmacy, the College of Education, the College of Business Administration, and the College of Liberal Arts, as well as the University of Iowa Hospitals and Clinics.

The Graduate Program in Hospital and Health Administration conducts research and evaluation in hospital and health administration, and offers a graduate degree program. The faculty includes faculty from the College of Medicine, the College of Dentistry, the College of Nursing, the College of Pharmacy, the College of Education, the College of Business Administration, and the College of Liberal Arts.

Urban and Regional Research

The Graduate Program in Urban and Regional Research is established to provide an environment for the interdisciplinary study of urban and regional problems. The faculty includes faculty from the College of Medicine, the College of Dentistry, the College of Nursing, the College of Pharmacy, the College of Education, the College of Business Administration, and the College of Liberal Arts.

Related Units

Although some units are not directly connected with the University, they have the potential for being connected with the University. These units have a special role in the conduct of research at the University.

Institutes

Downdraft 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 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 for Accounting Research

Contact the Department of Accounting in the College of Business Administration for information.

Institute of Agricultural Medicine

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

Institute of Hydrospheric Research

See the "College of Engineering" section of the Catalog.

Institute of Public Affairs

See the "Continuing Education" section of the Catalog.

Centers

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.

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 Rehabilitation Engineering

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.

Center for the Study of Recent History of the United States

Contact the Department of History in the College of Liberal Arts for information.

Clinical Research Center

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

Comparative Legislative Research Center

See "Political Science" in the "College of Liberal Arts" section of the Catalog.
Core Center: Diabetes and Endocrinology
See the "College of Medicine" 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
Accident Prevention Laboratory
See the "College of Medicine" section of the Catalog.

Iowa Lakeside Laboratory
See "Iowa Lakeside Laboratory" in the "College of Liberal Arts" and "Counting 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.

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

Iowa Pesticide Hazard Assessment Program
See the "College of Medicine" section of the Catalog.

Iowa Psychiatric Epidemiology Research Unit
Contact the Department of Psychiatry 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. The center realizes a University dream of many generations: to bring the arts together in a single campus setting, near the geographical heart of the University.

The 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. Mabee Theatre, Clapp 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 America for well over a century. The original art building dates from 1926. Major additions were added in 1956-59, 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 Eva Drewelowe, who in 1924 became the first recipient of the Master of Arts degree in studio art at the University of Iowa.

The school’s Corroboree Gallery, located in South Hall (the old Mabel 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 as outstanding example of the enrichment of the arts through generous private support.

In the early 1960s, Owen and Leona Elliott of Cedar Rapids offered to the University their extensive collection of nineteenth- and twentieth-century paintings, prints, antique silver, and rare books, 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 businesses contributed toward the museum’s construction cost. The museum opened in 1969 and quickly earned recognition as one of the nation’s finest university museums.

A gift from industrialist Roy Carver of Muscatine made possible the construction of a major addition opened in 1979. With the Carver Wing, the museum has 48,000 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 8,000 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 printmaker Mauricio Lasansky, longtime professor of art at the University.

Museum special events include slide lectures by visiting artists, scholars, and collectors; Music in the Museum, a Sunday afternoon concert series; and art study trips to other cities and countries. Museum docents lead groups on guided tours of the museum’s exhibitions. Catalogs of many exhibitions are
available for purchase. Friends of the Museum of Art, a private support group, sponsors various activities, and exhibitions, and an active Print & Drawing Study Club.

University Theatre

University Theatre houses the Division of Dramatic Arts and the Department of Communication and Theatre Arts. It is the home of E. C. Mabie Theatre, the traditional setting for many major University Theatre productions each year. Mabie Theatre seats 477.

Four additional theater spaces in other parts of the campus greatly extend the range of University Theatre productions. Old Armoy Theatre features a thrust stage and seats an audience of 200; MacLean 301 Theatre is used for original works by students. Studio II is the Old Armoy is used for student-produced works, often as an extension of course requirements.

Hancher Auditorium provides a vast stage and highly sophisticated technical equipment to the wide range of University opportunities in stage production.

The scenic art division in the Department of Communication and Theatre Arts provides production management, design, and technical directions for dance, opera, and musical productions produced by the Iowa Center for the Arts in cooperation with the School of Music and the Dance Program in the Department of Physical Education and Dance. The Playwright Workshop, one of the three distinguished writing workshops in the Department of English, is a joint venture with the University of Communication and Theatre Arts.

School of Music

Opened in 1971-72, the new home of the School of Music was designed for spaciousness and convenience. Its broad corridors lead from rehearsal rooms to two recital halls and is the stage of Hancher Auditorium.

In a given year, faculty artists and the many invited artists of the school present about 100 major concerts, plus an additional 270 to 300 student vocal and instrumental recitals.

Chapel Recital Hall, with its hand-crafted Casavant tracker organ, seats 720 for public concerts. The 200-seat Harper Hall is both a classroom and the setting for many recitals. The school's largest ensemble is the university's chamber choir, and the choir's perform regularly in Hancher Auditorium.

The school has produced opera since 1939. Like other major stage presentations, opera is a part of the University's opportunities for educational and performance experience, utilizing the talents and resources of the arts and Center for the Arts, particularly theater and dance.

The School of Music is in the vanguard of innovation in the area, creating and performing in new forms. Its Center for New Vocal Forces, established in the 1970s, focuses on the creation and performance of vocal and instrumental music for both concerted and solo voices. Its Center for Percussion presents special events, recitals, symposia, and concerts for percussionists.

Two electronic music studios provide a wide range of technical capabilities, and a creative audio-visual system. In Victor's Laser I, the school has the latest advanced laser design facilities, as well as a variety of multimedia recording facilities. In the school's performance space, the Pfeiffer Center for Music, the school's performance center, has a central recording studio in the School of Music.

Hancher Auditorium

Hancher Auditorium, which opened in 1975, 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 and a half.

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—orchestras, ensembles, theater and dance companies, major symphony orchestras, and other artists from other nations and cultures. For example, in Fall 1984, nearly half of Hancher audience are students of the University, who have priority of the purchase of seats, at reduced prices. Student passes regularly attend auditorium events from a wide region in Iowa and western Illinois.

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

For students of the various theaters arts, the auditorium has spacious scene construction and costume shops, nearly 80 sets of rigging for scenery changes, and one of the finest sound, lighting and sound systems in the western world. For music students, Hancher is the on-campus performance hall.

The stage itself is an uncommon educational resource. Its proscenium is 70 feet wide. With its adjacent wings, the stage area is 157 feet long, 85 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 another dimension in the school'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 community and arts groups, etc.), the program is intended to share the University's cultural resources as widely as possible throughout the state.

Consistent with the University's responsibility to serve local needs and interests, in addition to programming throughout the state, the Arts Center Cyberoffice schedules on-campus conferences, workshops, and educational projects.

Dance

The University of Iowa Dance Program is centered in the dance division of the Department of Physical Education and Dance. Dance faculty and students of the School of Music, both part of the program during the year and participate with other units of the Iowa Center for the Arts in interdepartmental projects and programs. Dance Program 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 Telecommunication Center and the studios of WMTV, public television and radio KXIC-AM, are part of the School of Communication and Theatre Arts. The entire campus serves as the "camera" and "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 intensive writing and translating their works into English and other languages.

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

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

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

Children's Reading Clinic
The Children's Reading Clinic is the central focus of the University of Iowa College of Education, providing a unique setting for early childhood education. It is the site of several research projects, including studies on the development of reading skills in young children.

International Education and Services
The Office of International Education and Services (OIERS) is the focal point for University international education activities. It provides support to the University's international education programs, including assistance to faculty and students interested in international affairs, as well as assistance to students interested in pursuing degrees or study abroad programs.

Museum of Natural History
The University of Iowa Museum of Natural History is one of the largest and most comprehensive museums in the Midwest. It houses collections of plants, animals, minerals, and other natural history specimens, as well as a variety of educational programs and activities for visitors of all ages.
Public Information and University Relations

The Office of Public Information and University Relations (OPI) works to promote understanding of, participation in, and support of the University's mission and activities both within the University community and among the general public. It seeks to maintain an effective information program through the use of internal and external media; conduct research on the University administration; and matters involving public information and University relations; and provides a liaison between the central administration and appropriate University, governmental, civic, and other groups.

University public information programs are implemented through the combined efforts of OPI's individual units on-campus, including Art Center Relations, Broadcast News Service, Health Center Information, Communication, Humanities/Science News Service, OPI Photo Unit, and Women's Sports Relations, as well as Man's Sports Information. These units supply news, photos, and information to print and electronic media; gather and prepare informative material for special and general Ibrnet publications; and answer requests for information; and assist writers, photographers, and broadcasters who visit the campus.

OPI publishes the general University Calendar of Events; Campus Correspondent for students' parents; the FYI newsletter for faculty and staff; Programme about forthcoming arts activities; and Spectator for alumni and friends of the University. The department also includes the Office of State Relations; serves as the executive office of the Parents Association; operates the University Speaker's Bureau; and provides campus tours and other services for University visitors and guests. In addition, OPI has management responsibility for the Department of Publications and The University of Iowa Press.

Publications

The Department of Publications provides services to meet the printing and publications needs of the University. Its staff provides assistance to departments and campus organizations in planning, editing, designing, and printing publications. Computerized systems located about the campus provide quick, inexpensive duplication service. The department also operates Campus Stores, which produces and sells merchandise, lab notebooks, and other unique instructional materials created by the faculty and not commercially available. The department is responsible for University compliance with the printing regulations of Iowa, including provisions for obtaining competitive bids on printing work done by the Department of Publications.

The University of Iowa Press

The University of Iowa Press was established in 1898 to publish significant results of scholarly research. The imprint is controlled by The University Editorial Review Board, composed of faculty members and administrators appointed by the vice-president for University development and research.

Recreational Services

The Division of Recreational Services administers a program of more than 23 intramural sports and recreational activities for all interested University students; offers a wide range of recreational lesson programs in such activities as dance, indoor and outdoor sports, yoga, aerobics, racquetball, skids, and gymnastics; and provides informal activities for students, faculty and staff members, and their spouses and termites. Activities include basketball, badminton, volleyball, table tennis, swimming, handball, paddleball, racquetball, squash, canoeing, golf, tennis, weight training, billiards, tennis, and juggling. The division's Truth 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 skis are also available for a minimal rental fee.

The University of Iowa Alumni Association

The principal agency through which University students continue their identification with the University after they leave the campus is The University of Iowa Alumni Association. The association was organized in 1903 and has members throughout the world. Its continuing purpose is the betterment of the University through the co-operation between alumni and the University; to implement programs of service to alumni; to strengthen public recognition of the University as a symbol of the health and welfare of the state and the nation; and, through organized alumni efforts, to serve the University by strengthening its programs in research, teaching, and public service. The association publishes the Alumni Review, a biweekly magazine for association members.

The University of Iowa Foundation

The University of Iowa Foundation was established in 1898 to help the University obtain the greatest possible educational benefit from private giving. It raises funds for the objective through three major programs: annual giving, capital campaign, and planned or deferred giving.

The foundation is a private, nonprofit corporation empowered to solicit and receive gifts and bequests, to accept and hold assets 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 more 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 complex. 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, nonteaching and nonresident employees of the University. The University Personnel Office is responsible for the administration of the Board of Regents Merit System and faculty and staff benefits programs. 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, plus the Law Library, contain approximately 2.4 million volumes.

The main Library facilities include microform reading rooms, lending 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 Hispanic Relations Area files consist of full sets on a sample of societies throughout the world, and are designed to facilitate comparative studies of social and cultural behavior.

The Leigh Hunt Collection, brought together by Luther A. Brewer of Cedar Rapids, Iowa, is considered one of the most comprehensive in existence. It contains nearly 2,000 manuscripts and manuscript letter-writing by Hunt or to him by his many literary friends, including 100 association volumes, and 800 editions of Hunt's writings.

The Mark Ravenel Memorial Collection or approximately 5,700 volumes is particularly rich in deluxe editions, including many superb bindings made especially for Mrs. Ravenel.

The French Revolution Collection includes more than 9,000 political pamphlets, chiefly from the years 1788-1799, supplemented by numerous French newspapers and government publications of the time.

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

The "Obg" Darleg Collection comprises origins of nearly six-thousand carons in which, for more than 40 years, Olib recorded and commented on the economic, political, and diplomatic affairs of the United States. His cartoons are virtually 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 Bellinger-Lincoln Collection, gathered by Judge James W. Bellinger 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 conspirator. Another large group contains reminiscences of people who knew Lincoln. Lensay, broadsided relating to Iowa and the Civil War period, have been added.

"The "Collection is a gathering of early, rare, or special works on diverse subjects, including books of the thirteenth and sixteenth centuries, early Americana, Rutherford Civic Publications, private press books, and selected modern first editions.

The Manscopic Collection includes more than 10,000 individually catalogued letters or manuscript items of English and American authors or historical figures, principally of the nineteenth and twentieth centuries, in addition to more than 400 printed collections of papers, diaries, and correspondence files relating to midwestern economic, political, and social history.

Other special collections include the Harvey Hight Collection of maps and documents dealing with railroading in the Midwest; the History of Hydraulics Collection; the Edwina Ford Pippen Collection of ballets and Indians; and the Early American Collection, which contains several thousand letters and healthcare documents descriptive of the Chautauqua movement; the Ritten Collection of poetry, symbolism, criticism, manuscripts, and letters relating to the contemporary British poet, Edward Stedman; the Iowa Aurora Collection, the Map Collection, consisting more than 179,000 maps and indexed aerial photographs and nearly 3,000 atlases, gazetteers, and related reference items; and the University Archives.

The John Martin Rare Book Room in the Health Sciences Library houses a collection of approximately 2,000 books on the history of medicine, including a number of incunables. 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
Cedar Rapids, Iowa.
College of Liberal Arts

People 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 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 kinds 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 generally, unexpectedly, and unsupervised. The College of Liberal Arts attempts to provide this versatility by a combination of major and, where appropriate, minor and general educational requirements.

College Organization

The College of Liberal Arts is composed of units of various ranks, divisions, schools, departments, programs, and non-departmental units.

Divisions

There are two divisions in the college. 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 is made up of the Department of Computer Science, Mathematics, and Statistics and Actuarial Science.

Schools

There are seven schools in the college. In addition to the School of Art and Art History and the School of Music, mentioned above, there are schools of Journalism and Mass Communications, Library Science, Religion, Social Work, and Letters. This last unit is a federation of the departments of Asian Languages and Literature, Classics, Communication and Theatre Arts, English, French and Italian, German, Linguistics, Russian, and Spanish and Portuguese, plus the programs in Afro-American Studies, American Studies, Comparative Literature, Women's Studies, the International Writing Program, the Transatlantic and Writers' Workshops, and the Winslow Press.

Departments

Thirty-six formally organized departments, plus units in the College of Education, provide instruction in the college, all of which offer one or more degrees. (See lists which follow.)

Programs

There are ten formally organized programs currently operating in the college: American Studies; Afro-American Literature; Aging Studies; Global Studies; Latin American Studies; Literature, Science, and the Arts; Museum Training; Recreation Education; Rhetoric; and Women's Studies. Comparative Literature; Literature, Science, and the Arts; and Recreation Education offer degrees.

Non-Departmental Units

Non-departmental units in the college, not included above, are the Language Media Center and the Iowa Urban Community Research Center.
Departments of The University of Iowa College of Education offer instruction leading to several different degrees for students in liberal arts. Undergraduates with degrees in education are recommended to the state Department of Education for certification as classroom teachers. The University of Iowa, College of Medicine provides instruction in medical technology and certain medical sciences. Students seek certification in these two specializations by taking national examinations. Those who have completed these programs may earn degrees, usually in general science.

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 advisor 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 advisors are assigned by the Liberal Arts Advisory Office. Students who have declared majors are assigned advisors from their major departments; students who have not declared majors are assigned advisors from the Academic Advising Office; students in preprofessional programs may be assigned to special advisors from the appropriate professional areas. Students should go to the Liberal Arts Advisory Office to change academic advisement status or change majors and obtain information and advice about graduation requirements, the Bachelor of General Studies and other degree programs, the College Examination Program (CLEP), Advanced Placement (AP), pass-fail options, satisfactory-fail, the second-grade-only option, deadlines for various administrative actions (such as dropping or adding courses, canceling registration), probation, dismissal, reenrollment, academic discipline, and any other academic matter.

Degrees Offered

Students graduating from the College of Liberal Arts may earn Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), Bachelor of 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 as indicated in the following 58 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., B.S.
- Botany—B.A.
- Chemistry—B.A., B.S.
- Classics—B.A.
- Communication and Theatre Arts—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 Communication—B.A., B.S.
- Latin—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.A., B.S.
- Physics—B.A., B.S.
- Political Science—B.A., B.S.
- Portuguese—B.A.
- Psychology—B.A., 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.
- Spanish—B.A.
- Special Education—B.A., B.S.
- Speech and Hearing Science—B.A., B.S.
- Statistics and Actuarial Science—B.A., B.S.

Zoology—B.A., B.S.

The B.G.S. and B.L.S. degrees are awarded by the college with no major designations.

Interdisciplinary Programs

The programs briefly described below are fully described among the list of the major programs presented in an alphabetical order in the following sections 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 present relationships of African-Americans to Africans 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 1949 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 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 concentration in Afro-American studies in programs leading to a B.A., M.A., or Ph.D. in American Studies.

Aging Studies

The Alumni Center Program is a multidisciplinary program, administered by the College of Liberal Arts in cooperation with other colleges of The University of Iowa. The program is designed to complement an undergraduate degree program. It consists of courses or sequences which have been coordinated and recognized by a planned program of study for students with academic, professional, research, or service career interests in aging. This program offers a unique opportunity for students of varying disciplines to gain more background and develop some expertise in the field of aging.

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
examines these problems and their interrelationships, and focuses on one set of problems for more detailed analysis. The four problem areas are war, peace, economics, development; environmental concerns; and global issues. The course also introduces 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 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 seminar-taught discussion courses on fundamental human questions and evaluate important contemporary issues on the basis of their reading in outstanding works. They learn to draw upon their writing and discussions to define issues and problems and work them through. As 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

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 institutionalizing that knowledge within the University community. The term "women's studies" refers to the education of women but encompasses teaching and research about women whom is of intrinsic interest and concern to everyone. This major academic dimension in education forms a cumulative pattern in learning about women and supplements neglected areas of study in 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 program or 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, or in the case of an approved program, an advanced course at The University of Iowa.

No course accepted toward the minor may be taken pass-fail pass-fail.

A student must have at least a 2.0 grade-point average on all work attempted in the minor department.

The minor is awarded only at the time the student receives the bachelor's degree, or later.

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.

A student, who already has a bachelor's degree from The University of Iowa and is still in undergraduate status, completes the requirements for a minor, 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 filled with the registrar needs the signature of the major advisor.

The degree-granting programs in early childhood education, secondary 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 permitted by the educational policy committee to offer minors. Information about program approval is available in departments' offices.

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

The decision of what 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 office 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 major. In other cases, the minor may allow a student to follow as entirely different and separate interest from his or her major. Students should seek help from their major advisor 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 familiarity and business courses. The courses listed below satisfy all requirements. Interested students should complete or be registered for the first semester of these courses before applying for admission to the minor program.

Computer programming courses 3 s.h.

Courses in mathematics numbered 22M-7 or higher 3 s.h.

Courses in statistics numbered 225-8 or higher 3 s.h.

621-2 Principles of Economics 9 s.h.

6A:1 Introduction to Financial Accounting 3 s.h.

8A:2 Introduction to Managerial Accounting 3 s.h.

6M:1 Marketing 3 s.h.

6F:100 Introductory Financial Management 3 s.h.

6A:100 Administrative Management 3 s.h.

6A:5 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 minimum standards does not ensure admission.

Minor in Education

Students majoring in College of Liberal Arts may earn a minor in education. For detailed requirements, see the "College of Education" section of the Catalog.
Liberal Arts Minors for Business, Engineering, and Nursing Students

Undergraduate students in the College of Business Administration, College of Engineering, and College of Nursing at The University of Iowa may earn minors in their colleges by satisfying College of Liberal Arts requirements for minors. (See other college sections of this Catalog).

Foreign Studies Certificate

The college's Foreign Studies Certificate program is designed 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 advisors 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 course work related to the chosen country or area. In addition, students fulfill the foreign language requirement for the B.A. in a language appropriate to the chosen area. A student who successfully completes a Foreign Studies Certificate program in an area will have demonstrated that they have the opportunity to write a senior thesis under a faculty member's guidance. Successful completion of courses taken in the School of Journalism and Mass Communication; or a specialization in management with courses taken in the various social sciences departments.

Honors Program

The Honors Program offers special curricular and extracurricular opportunities to outstanding students. Freshmen may take specially designed courses taught by faculty, and many general education courses include honors sections for advanced students. Many departments offer honors seminars, independent research, and the opportunity to write a senior thesis under a faculty member's guidance. Successful completion of courses taken in the School of Journalism and Mass Communication; or a specialization in management with courses taken in the various social sciences departments.

Specializations within Degree 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 and dietetics and nutrition 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; music emphasis, and art education: music education, independent research, composition/theory major, and applied music.

Other specializations can be developed in several areas—for example, specialization in public relations and advertising with courses taken in the Department of Communication and Theatre Arts, the Program in Communication, and the School of Journalism and Mass Communication; photography and graphic design specialization with courses taken in the School of Art and Art History and the School of Journalism and Mass Communication; or a specialization in management with courses taken in the various social sciences departments.

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

Preprofessional (Joint) Programs

Joint programs leading toward graduation from the College of Liberal Arts may be used with The University of Iowa College of Dentistry and any accredited medical or dental college in the United States which offers advanced degrees.

To be eligible to use a joint program with another college leading toward graduation from The University of Iowa, a student must have completed all of the following prior to going to a "procedures" college: at least 64 semester hours of general education requirements; at least the requirement 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.

No more than 32 semester hours earned in the profession college after the student transfers from the College of Liberal Arts may be counted as electives towards a degree in the College of Liberal Arts.

To use a joint program with any other accredited U.S. medical or dental college except The University of Iowa, a student, during his or her last semester in the College of Liberal Arts, should apply to the graduation analysis section of the Health Science Center 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 on how to proceed toward applying for a University of Iowa degree.

Combined Degree Programs Before Entering College of Liberal Arts and College of Engineering

Students may earn two University of Iowa baccalaureate degrees. A combined curriculum program is the Colleges of Engineering and Liberal Arts. To enter this program, a student must be eligible for admission to the College of Engineering but may begin the program in either the College of Liberal Arts or the College of Engineering. Students who enter this program will be advised by the assistant to the dean of the College of Engineering and by an associate dean of the College of Liberal Arts. Students interested in the combined degree
program should declare their interest by contacting a representative of the
Dwight's Office at either the College of
Engineering or the College of
Liberal Arts. A plan of study must be developed and
approved by the advisors from both
colleges. It is critical to enroll in the
proper mathematics and engineering
courses early in the program to minimize
the time required to complete the
combined degree program. The student
in the combined program can normally
meet the sophomore degree
requirements of both colleges in about
five academic years. However, the exact
length of time to complete the combined
degree program will be determined by
the major areas of study selected in
Liberal Arts and Engineering.

Students selecting this program will be
required to complete the general
education requirements, the
requirements for the major, and
the residence requirement in the
College of Liberal Arts. The technical engineering
courses taken by the student will vary,
according to the engineering specialty
selected. Since the courses in science,
mathematics, and the social-humanities are
regularly accepted for credits by both
colleges, the student is, in many cases,
satisfying the requirements for two
colleges in the taking of a particular course.

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 completed the
high school from which he or she graduated
provide a certificate of school
credits, including a complete statement of
grade point average, day 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 suspension will not be
defined 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
mater background, is in the upper one-
half of his or her graduating class, and
meets special particular 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 admitted 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 expected to meet
higher standards than the minimum
requirements for a graduate of an Iowa
high school. The option for admission
by probation or trial enrollment may be
open to these students.

A graduate of a nonaccredited high
school must submit all data required
above, and must take examinations which
demonstrate his or her general
competence to do sophomore 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
high school 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 Credit Given by Educational
Institutions published by the American
Association of Collegiate Registrars and
Admissions Officers will be followed for
those not regionally accredited.

Each applicant must submit an official
transcript bearing the official 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 from the
College of Liberal Arts. They require to
support the student or her application for
admission.

A transfer applicant is expected to have
maintained a C average (2.0 in a 4-point
system) for all college work
taken, and must meet the
campus from which he or she graduated
must have a 2.0 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 or 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 enrolled for an
indefinite period, will not be considered
for six months he or she has
attended any college or university.

An applicant who is on probation, the student 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 suspended. A statement of the reason for expulsion
is filed from the previous
college. When it becomes proper to consider an application from a student under
suspension, the college may
account the fact of the previous
expulsion. An applicant granted
admission under these circumstances
will be considered on the basis of 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
less than one semester and will
ordinarily be for a full academic year.
The college may require the student to
meet the terms of the validation access at the
time or provisional admission. Each
student may only use the nonaccredited
college is considered on his or her merits,
and admission or rejection is at the
discretion of the admissions officer.

Foreign Students

Foreign applicants (those who are or
will be in the United States on a
nonimmigrant status), whether U.S. high
school graduates or not, may be required to
meet higher standards for admission than
those required of students from a
college or university in the United States
for admission to a given academic year.

Applicants whose native or official
language is not English must provide
a statement in English as a Foreign Language
(TOEFL) before admission may be
given. Applicants may use other tests or
criteria for judgment of English
language proficiency for admission purposes.
Students admitted to the
College of Liberal Arts and the College of
Liberal Arts are required to take an English proficiency examination
by the University's Department of
Linguistics prior to registration.

Freshmen evaluated as proficient must
enroll in 101.1 or 101.2. If not
proficient, the student must enroll in the
EFL course recommended by the
linguistics department. The student
must continue to enroll in EFL courses until
the student can present a 550 TOEFL
score or until the student has
enrolled in all of the courses recommended by the
linguistics department.

The Department of Linguistics offers six
EFL courses (101.1-101.2).
Foreign students who have attended a U.S. college or foreign college or both before transferring to Iowa for undergraduate study may be expected to meet higher admission standards than the minimum requirements outlined for in-state transfer students. Foreign transfer students will have their proficiency in English evaluated in the same manner as entering freshmen. Those who are initially evaluated as proficient will fulfill the vendor undergraduate rhetoric requirements. If the student is not proficient, enrollment in the ESL courses which are recommended by the linguistics department is required until all such courses are completed. Like foreign applicants, immigrants (permanent resident aliens) from typically non-English-speaking backgrounds may be required to take the TOEFL or other suitable measures of English proficiency.

Nondegree Candidates
Under special circumstances, students may be admitted to the college as nondegree candidates. Such admissions may be for certain sessions or until the completion of the degree program. An applicant may be admitted to graduate studies approved by the college. Courses taken by students in this category cannot be used toward satisfying the residence requirement for graduation from the College of Liberal Arts.

Requirements for Graduation
Total Earned Hours
Total semester hours required are at least 120 hours, including as beginning freshmen; as indicated on their admission statements for transfer students.

Residence
Minimum credit to be earned in residence are 36 semester hours, 45 of the last 60 semester hours, or a total of 90 semester hours. Nonresident students should seek work at other colleges (not The University of Iowa) in order to graduate with the University of Iowa correspondence courses.

General Education Requirement
All students must satisfy the college course requirements (see sections that follow).

Major Requirement
All students must complete the course and semester-hour requirement in one subject area (major department).

Other
A maximum of 16 semester hours of credit with a grade of "D" (prorated according to classification at the time of admission) will be counted towards the 124 semester hours needed for graduation. Transfer student admitted to the University with more than 16 semester hours of "D" grades are not eligible to take any more. (See following section for more details about the usage for pass/ct-pas values.) Students may earn up to 32 semester hours of credit by exam from all sources.

Maximum credit earned through correspondence courses: 30 semester hours. Correspondence courses do not earn resident credit.

Semester hours for courses completed with nonpass marks do not count toward the total required for graduation and do not 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 two-year college toward meeting the 124 semester hours needed for graduation from the College of Liberal Arts.

College Course Requirements for Graduation for B.A., B.S., B.M., and B.F.A. Degrees
Two systems or general college course requirements for graduation exist in the College of Liberal Arts. All students who register for the fall semester prior to May 1982 may meet the college course requirements for graduation by following either of the systems or requirements. All students who register for the first time at Iowa after March 1982 must complete the "new" general education requirements. Whichever system of requirements students elect to follow, they must meet all parts of that system.

One group or system of requirements may be called the skills, core, and foreign language requirements. It has been in operation, as amended, since 1944. The other group of requirements, called the general education requirements, goes into effect in June 1982. A description of the core requirements of the "old system" follows immediately, and a description of the "new" general education requirements follows after that.

How to Satisfy Course Requirements
The "old" skills, core, and foreign language requirements course requirements are comprised of:

1. Basic skills (literacy, mathematics, and physical education skills);
2. Core courses (historical-cultural, literature, natural science, and social science); and
3. Foreign language.

Rhetoric
All Students
Students fulfill the course requirement in rhetoric by completing the first semester of rhetoric at The University of Iowa or by completing any other course identified as rhetoric by the College. All students who register for the fall semester prior to May 1982 may meet the college course requirements for graduation by following either of the systems or requirements. All students who register for the first time at Iowa after March 1982 must complete the "new" general education requirements. Whichever system of requirements students elect to follow, they must meet all parts of that system.

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2. Core courses (historical-cultural, literature, natural science, and social science); and
3. Foreign language.

Mathematics
All Students
Students fulfill the course requirement in mathematics by presenting at least two and one-half years of high school mathematics exclusive of such courses as business arithmetic and consumer mathematics; or by scoring 23 or better on the mathematics section of the ACT test; or by completing 22M.1 (Iasik Mathematical Techniques); or by satisfactorily completing a college-level course in mathematics, computer science, or statistics, and completing satisfactorily the examinations in 22M.1.

Physical Education Skills
All Students
Students fulfill the course requirements in physical education by successfully completing 1500 or 4000-hour courses in physical education skills to
be taken under a satisfactory-fail grading system. Only 10/21, 10/22, 10/31, 10/32, and 10/33 may be used to satisfy the physical education skills requirement.

For the physical education skills courses that are listed on transcripts in terms of activities and levels, when incomplete marks are made up and second grade options are used, the student must complete or take again the same activity at the same level. It is a student's responsibility to repeat the same course or take a more elementary one, the registrar will assess a fee for either duplication or repetition.

Students may meet the requirement by passing comprehensive tests in physical education skills. These tests are given each semester at announced times. Any student, even those not registered for physical education skills, is eligible to take these tests. A maximum of 4 semester hours of credit may be awarded for successful completion of these examinations. Credit from these examinations may be applied to the physical education skills requirement only.

Freshmen who elect to meet the requirement by examinations, but who fail to pass, must register for a physical education skills course for at least one semester before repeating the examination during the sophomore year.

Students who have passed their twentieth birthday prior to their first enrollment in the University, as well as those who have passed their twentieth birthday prior to the day of their graduation, are excused from the requirements.

Veterans

Exemption from physical education skills may be obtained from the Registrar's Office of the Registrar official evidence of having completed the basic training program in the armed forces.

Transfer Students

Transfer students may fulfill the physical education skills requirement by transferring 40 semester hours of college physical education, or by transferring 40 semester hours of advanced standing, or by transferring any 4 semester hours of college physical education and by earning enough credit in physical education skills in the College of Liberal Arts to make a total of 4 semester hours from all colleges.

Historical-Cultural, Literature, Natural Science, and Social Science Core

Eight semester hours are required in each of the four core areas for the B.A., B.S., B.A.S., and B.S.A. degrees. However, with the approval of the department, courses may be used from the core requirement in the areas of their major. Approved core courses, with permissible combinations, are listed below. Consult core and department listings for offerings in the current session.

Students interested in satisfying the core requirements by examination should inquire at the Liberal Arts Advisory Office, 118 Schaeffer Hall.

Historical-Cultural

Any combination (non-duplicating) of the following courses totaling 8 semester hours.

11/39-30 Problems in Human History
11/31-32 Western Civilization
11/33-34 Philosophy and Human Nature
11/35 Understanding the Visual Arts

11/36 Western Art and Culture before 1400

(Formerly 11/36 Art in the Western World)
11/39-40 Masterpieces of Music
11/41 Western Art and Culture after 1400

(Formerly 11/38 Art in the Western World)
11/51 Art of the Theatre (formerly Drama and Western Civilization)
11/56-56 Civilizations of Asia
11/61 Judeo-Christian Tradition

(Formerly 11/35 Religion in Human Culture)
11/62 Religion and Society

(Formerly 11/36 Religion in Human Culture)
11/63 Quest for Human Destiny
(Formerly 11/35 Religion in Human Culture)

Literature

All students must complete 11:1 The Interpretation of Literature, followed by any other literature core courses. Satisfaction of the rhetoric requirement is a prerequisite. English majors are exempt from fulfilling the literature core requirement.

11/1 The Interpretation of Literature
11/2 Biblical and Classical Literature
11/3 Medieval and Renaissance Literature
11/4 Idea of Tragedy
11/5 Idea of Comedy
11/6 Narrative Literature
11/7 Lyric Poetry
11/8 Literature of the Theater
11/9 American Lives
11/10 The Classical Views
11/14 Literatures of the African Peoples
11/15 The Literary Presentation of Women
11/17 German Heric and Erotic Literature of the Middle Ages
11/18 Contemporary Latin American Narrative
11/19 Asian Humanities
11/20 Asian Humanities

Natural Science

Any combination (non-duplicating) of the following courses totaling 8 semester hours.

12/1, 12/11, 12/13 Botany
4/7 or 4/8, 4/9, 4/13, 4/14, 4/16

Chemistry

11/21 Human Biology
11/22 Ecology and Ecosystems
11/23 Earth History and Resources (may not be combined with 12/5)
11/24 Men and His Physical Environment
11/25 Chemistry and Physics of the Environment

(Also 29/5, offered for 3 s.h. credit only)

11/38 Technology and Society
12/6 Introduction to Geology (may not be combined with 11/23)
22/10 or 22/11 Mathematics (only one)
29/11 or 29-17, 29-12 or 29-18, or 29/8
29/51 or 29/62, or 29/50, or 29-105

Astronomy

(Deportment of Physics and Astronomy)
37/3 Principles of Animal Biology
97/35, 97/20 and 22M/0 Science Foundations
(for majors in elementary, special education, and early childhood education only with no college science)
97/104 and 22M/50 Science Foundations (for majors in elementary, special education, and early childhood education only with 4 or more semester hours of college science)

Social Science

Any combination (non-duplicating) of the following courses totaling 8 semester hours.

61/1, 62/2 Economics
31/0 or 30-110, 32/2, 30-40, 30-50,
30-60, 31/1 or 31/3 Psychology
(only one)
34/1, 34/2 Sociology
44/1, 44/2, 44/11, 44/19, 44/30, 44/55

102/11 Language and Society

Additional Options for Transfer Students

Transfer students may meet their core requirements in any of the following ways.

1. By transferring in 8 semester hours or more of appropriate courses.
2. When a student transfers less than 8 semester hours in a core area, he or she may complete the 8-semester-hour requirement by taking either approved core courses and/or any courses or courses from the departments listed in each core area.

a. Historical-cultural—American studies, history, philosophy, religion, and history and appreciation of art, music, or drama.

b. Natural science—astronomy, biochemistry, botany, chemistry, geology, mathematics, microbiology, physics, physiology, and zoology.

Social science—anthropology, economics, geography, linguistics,
political science, psychology, and sociology

3. A transfer student with zero hours in a core area must complete 8 semester hours of approved core courses at The University of Iowa.

4. Literature core—By submitting at the time of entrance 6 semester hours of college credit in literature from another institution or by submitting 3 semester hours of college credit in literature from another institution and completing one of the 4-semester-hour courses in the literature core area of this University. Students transferring less than 3 semester hours must complete 8 semester hours of approved courses in the literature core area.

Pass-Nonpass for Core Requirements
No core courses or departmental courses used to meet core requirements may be taken pass-nonpass if they are to be used toward satisfying the core requirements of the college.

Foreign Language
The following are the foreign language requirements for bachelor's degrees effective for students who entered Liberal Arts in September 1961, or thereafter.

1. Candidates for the Bachelor of Arts degree: A minimum of four sequential semester of college-level study must be completed in any one of the foreign languages listed below.

The requirements may also be satisfied by:
- a. Completion of four years of high school study in one language;
- b. Completion of a combination of high school and college study in one language which would be the equivalent of the two semesters of study on the college level;
- c. Satisfactory performance in an achievement examination measuring proficiency equivalent to that usually attained after four semesters of college study in one language.

2. Candidates for the Bachelor of Fine Arts, Bachelor of Music, or Bachelor of Science degrees: A minimum of two sequential semesters of college-level study must be completed in any one of the foreign languages taught in the University.

The requirement may also be satisfied by:
- a. Completion of two years of high school study in one language;
- b. 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;
- c. Satisfactory performance in an achievement examination measuring proficiency equivalent to that usually attained after semester hours of college study in one foreign language.

3. If you are taking French, the foreign language requirements for the B.A. degree may be fulfilled by taking a sequence of courses culminating in 9:12 Intermediate French, or 9:28 Second-Year Composition and Conversation, or a combination of 9:27 Second-Year Composition and Conversation and 9:28 French Conversation First Level. 9:28 alone is not sufficient for the fourth-semester requirement. Other combinations are possible. Check with the French department office, 10 Schaeffer Hall (phone 353-4087).

4. Elementary Chinese or Japanese courses, 6 semester hours each, 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 languages will meet the foreign language requirements for the B.F.A., B.M., or B.S. degree.

5. Bachelor of General Studies degree and Bachelor of Liberal Studies degree—no foreign language required.

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

Change From Four to Three Semester Hours for Core Requirements
If any of the 4-semester-hour core courses, previously approved to meet core requirements, change their credit hours from four to three for the new general education requirements, these degrees will be converted as meeting half of the core requirement for students entering under the old program core requirements. Transfer students held for 8 hours or less is a core requirement would also be subject to this ruling.

While the courses listed above will count as 4 semester hours toward meeting core requirements, they will only count as 3 semester hours toward total hours needed for graduation. Hours needed for graduation are courses approved for general education and designated as 3 semester hours would count as only 3 semester hours taken by students meeting 8 semester-hour core requirements.

General Education Requirements
All students who registered for the first time at low for any semester after May 1982 must complete the following general education requirements for the degrees of B.A., B.S., B.M., and B.F.A. as described below.

Rhetoric
Mathematics
Quantitative or formal reasoning

Foreign language
Physical education
Natural sciences
Social sciences
Humanities
Historical perspectives
Foreign civilization and culture

Rhetoric
All students must complete the rhetoric requirement (which includes speech and writing) as stipulated at each student's admission statement. This applies to both entering freshmen and transfer students. All transfer students regardless of the number of hours brought in must satisfy the rhetoric requirement. All students must register for their assigned rhetoric course at their first registration and continue to enroll for rhetoric courses until the requirement is completed. Once enrolled in a rhetoric course a student cannot drop the course. The maximum number of hours of rhetoric credit that may be counted towards a Bachelor's degree is eight.

The rhetoric requirement may be completed in one of the following ways:
- By passing 10:1 and 10:2 Rhetoric for 8 semester hours;
- By passing 10:3 Rhetoric for 4 semester hours;
- By passing the speech test and 10:4 Rhetoric for 2 semester hours;
- By passing the writing test and 30:3 Principles of Speech Communication for 2 semester hours;
- By passing both the speech and writing tests.

Proficiency tests in writing and speaking are given in rhetoric during the first week of classes. Students may register for 10:3 Rhetoric. Exemption but not credit from part or all of the requirement may be awarded on the basis of these tests.

Mathematics
The college requirement in mathematics may be met in any of the following ways:
- a. By scoring 28 or above on the math 742 or above on the mathematics subscore of the ACT general test battery;
- b. By completing two years of high school algebra and one year of high school geometry or their equivalent;
- c. By successfully passing a basic mathematics techniques proficiency test at low. The passing score will be equivalent to a score of 28 or above on the mathematics subscore of the ACT general test battery or the mathematics proficiency expected of those who have two years of high school algebra and one year of high school geometry.) Scores from this test are used to recommend placement of students in elementary college mathematics courses.
High School Courses
Successful completion of four sequential years of study of the same language in secondary school/high school meets the B.A. degree requirements. Two sequential years in high school meets the B.S., B.M., and B.F.A. degree requirements. Individuals must complete the fourth year of high school language for the B.A. degree and the second year for the B.S., B.M., and B.F.A. degrees.

College Courses
Successful completion of four sequential semesters of the same language in college, or their equivalent, meets the B.A. degree requirement. Two sequential semesters in college, or their equivalent, meets the B.S., B.M. and B.F.A. degree requirements. Individuals must complete the fourth semester of college language for the B.A. degree and the second semester for the B.S., B.M. and B.F.A. degrees.

Combinations of High School and College Courses
One year of high school work in a foreign language qualifies as one semester of college work. Successful completion of sequential years of high school followed by sequential semesters of courses in the same language in college will meet the requirements. Individuals must complete the fourth semester of college language in sequence for the B.A. degree and the second semester in sequence for the B.S., B.M. and B.F.A. degree.

Proficiency Examinations
Satisfactory performance on an achievement examination measuring proficiency equivalent to a course attained after four semesters of college study meets the B.A. degree requirement. Proficiency equivalent to that usually attained after two semesters of college study meets the B.S., B.M., and B.F.A. degree requirements. (Credit by exam will not be given for passing the proficiency tests.)

Additional Comments
No foreign language course may be taken pass–no-pass as a sequence of courses to be used towards satisfying the foreign language requirement of the college.

No duplication will be assessed between high school work and college courses in foreign language.

If you are taking French, the foreign language requirement for the B.A. degree may be fulfilled by taking a sequence of courses culminating in 9:12 Intermediate French, or 9:20 Second-Year Composition and Conversation, or a combination of 9:20 Second-Year Composition and Conversation and 9:20 French Conversation First Level. 9:28 alone is not sufficient for the fourth semester requirement. Other combinations are possible. Check with the French department office, 10 Scheffer Hall (phone 353-4087).

Elementary Chinese or Japanese language courses, 6 semester hours each, for a total of 12 semester hours will meet the foreign language requirement for the B.A. degree. One semester, 6 semester hours, of these languages will meet the foreign language requirement for the B.S., B.M., and B.F.A. degrees.

There is no foreign language requirement for the Bachelor of General Studies and the Bachelor of Liberal Studies degrees.

Students who are proficient in a foreign language not usually taught at The University of Iowa may validate their proficiency. No semester hours credit will be awarded on the basis of validation of proficiency in a foreign language.

Physical Education
All students must complete four one-semester hour courses in physical education skills under the S-G grading procedure. Only courses 10:21, 10:22, 10:30, and 10:35, offered by both physical education departments, may be used to satisfy the requirement. Courses under these numbers have activity or sports titles and levels of proficiency. If a student repeats the same course or takes a more elementary one, the registrar will assess a penalty for either duplication or regression. In removing incompletes from the course record, only the option the student must complete or take again the same activity or sport at the same level.

Proficiency Examinations
This requirement may be satisfied wholly or in part by passing comprehensive tests in specific physical education activities or sports. Up to 4 semester hours of ungraded credit or exemption may be awarded in partial or complete fulfillment of these tests. Credit from these tests cannot be used as elective credit towards a degree. A maximum of 4 semester hours of credit by examination in physical education skills will be recorded towards a bachelor's degree.

Transfer Students Transfer students may satisfy this requirement by transferring 4 semester hours of college physical education course work (skills, sports, and activities), or by achieving junior standing (having earned at least 36 semester hours of college credit) prior to admission to The University of Iowa, or by transferring less than 4 semester hours of college physical education by earning enough credits in physical education at Iowa to make a total of 4 semester hours from all colleges.

Older Students
Students who have passed their twenty-third birthday on or prior to the date of admission to the University, as well as those who have passed their twenty-eighth birthday prior to the day of their
graduation, are excluded from the physical education requirement.

Veterans

Exemption from the physical education requirement may be achieved by presenting, at the time of application for admission, or later, to the registrar's office evidence of having completed a basic training program in some branch of the armed forces.

Natural Science

All students must complete at least 7 semester hours of course work from the list below. At least one course taken to fulfill this requirement must include a laboratory component. (Those with laboratory components have Lab following their title.)

2.1: Introduction to Botany (Lab) 4 s.h.
2.11: Plant Diversity (Lab) 4 s.h.
4.7: General Chemistry I 3 s.h.
4.8: General Chemistry II 3 s.h.
4.9: General Chemistry Laboratory (Lab) 3 s.h.
4.13: Principles of Chemistry I 3 s.h.
4.14: Principles of Chemistry II 3 s.h.
4.16: Principles of Chemistry Lab (Lab) 3 s.h.
11.21: Human Biology (Lab) 4 s.h.
11.22: Ecology and Evolution (Lab) 4 s.h.
11.29: Earth History and Resources (Lab) 4 s.h.
11.24: Man and His Physical Environment (Lab) 4 s.h.
11.25: Chemistry and Physics of the Environment 3 s.h.
11.27: Geology and Man 4 s.h.
12.5: Introduction to Geology 3 s.h.
12.6: Evolution of the Earth (Lab) 4 s.h.
29.8: Basic Physics (Lab) 4 s.h.
29.11: College Physics (Lab) 4 s.h.
29.12: College Physics (Lab) 4 s.h.
29.17: Introductory Physics I 4 s.h.
29.18: Introductory Physics II (Lab) 4 s.h.
29.25: General Astronomy (Lab) 4 s.h.
29.50: Modern Astronomy 3 s.h.
29.81: General Astronomy (Lab) 4 s.h.
29.82: General Astronomy (Lab) 4 s.h.
31.7: Principles of Animal Biology 3 s.h.
31.40: Biology of the Brain 3 s.h.
31.49: Introduction to Animal and Human Behavior 3 s.h.
31.81: Human Genetics 3 s.h.
31.91: Genetics and Evolution 3 s.h.
31.97: Elements of Science (Lab) 4 s.h.
11.13: Human Origins 3 s.h.

Social Sciences

Students must complete a minimum of 8 semester hours from the courses listed below.

3.15: Introduction to Speech and Hearing Disorders and Processes 3 s.h.
60.1: Principles of Economics 4 s.h.
60.2: Principles of Economics 4 s.h.
7F:120: Introduction to the Politics of Education 3 s.h.
16.00: Introduction to Afro-American Society 3 s.h.
19-103: Social Scientific Foundations of Communication 3 s.h.
30.1: Introduction to American Politics 3 s.h.
40.2: Introduction to Politics 3 s.h.
30.30: Introduction to Political Thought and Action 3 s.h.
30.40: Introduction to Comparative Politics 3 s.h.
30.50: Introduction to Political Behavior 3 s.h.
30.60: Introduction to World Politics 3 s.h.
30.110: The American Political System 3 s.h.
31.1: Elementary Psychology 3 s.h.
31.3: General Psychology (either 31.1 or 31.3 may be used) 3 s.h.
31.13: Introduction to Clinical Psychology 3 s.h.
34.1: Introduction to Child Psychology 3 s.h.
34.16: Introduction to Mental Processes 3 s.h.
34.17: Human and Animal 3 s.h.
34.1: Introduction to Sociology: Principles 3 s.h.
34.12: Introduction to Problems: Sociology 3 s.h.
36B:25: Mass Media and Mass Society 3 s.h.
66C:60: Communication Theory in Everyday Life 4 s.h.
44.1: Introduction to Human Geography 4 s.h.
44.2: Introduction to Physical Geography 4 s.h.
44.11: Introduction to Social Geography 3 s.h.
44.19: Contemporary Environmental Issues 3 s.h.
44.22: Environmental Management 3 s.h.
44.15: Introduction to Economic Geography 5 s.h.
48.50: Introduction to Afro-American Society 3 s.h.
102.11: Language and Society 3 s.h.
11.13: Introduction to the Study of Cities and Society 4 s.h.
11.10: Anthropology and Contemporary World Problems 3 s.h.
11.14: Language and Human Behavior 3 s.h.
11.15: Urban Anthropology 3 s.h.
122.81: Mass Media and Mass Society 3 s.h.
v2:82: Communication Theory in Everyday Life 3 s.h.
122.103: Social Scientific Foundations of Communication 3 s.h.

Humanities

All students must complete the course 11.1: The Interpretation of Literature 3 s.h. and at least an additional 8 semester hours of courses from the list below:

H2C: The Art of Tribal Cultures 3 s.h.
8-10: Major Tests in World Literature 3 s.h.
11.1: Major Themes of World Literature 3 s.h.
21.1: Sixteenth Century Novel to Present 3 s.h.
3.15: Art of the Theatre 3 s.h.
11.2: Biblical and Classical Literature 3 s.h.
11.13: Medieval and Renaissance Literature 3 s.h.
11.14: Idea of Tragedy 3 s.h.
11.15: Idea of Comedy 3 s.h.
11.16: Narrative Literature 3 s.h.
11.17: Classic Poetry 3 s.h.
11.18: Literature of the Theater 3 s.h.
11.19: American Literature 3 s.h.
11.11: The Personal Voice 3 s.h.
11.12: Comedy and Tragedy 3 s.h.
11.13: The Classical Views 3 s.h.
11.14: Literature of the Ancient Peoples 3 s.h.
11.15: The Literary Presentation of Women 3 s.h.
11.17: German Heroic and Erotic Literature of the Middle Ages 3 s.h.
11.18: Contemporary Latin American Narrative 3 s.h.
11.19: Asian Humanities 3 s.h.
11.20: Asian Humanities 3 s.h.
11.21: Modern World Literature 3 s.h.
11.22: Art and Religious Symbolism 3 s.h.
11.37: Understanding the Visual Arts 3 s.h.
11.39: Masterpieces of Music 3 s.h.
11.44: Art of the Theatre 3 s.h.
11.44: Art of the Theatre 3 s.h.
11.60: Introduction to Religious Studies 3 s.h.
11.62: Religion and Society 3 s.h.
13.17: German Heroic and Erotic Literature of the Middle Ages 3 s.h.
13.11: Introduction to Modern German Literature I 3 s.h.
13.23: Introduction to Modern German Literature II 3 s.h.
13.14: The Third Reich and Literature 3 s.h.
13.15: Human Nature and the Impact of Science 3 s.h.
19.12: Opera as Drama 4 s.h.
13.18: The Dutch Tradition in Western Civilization 3 s.h.
14.13: The Classical Views 3 s.h.
14.11: Classical Mythology 3 s.h.
20.11: Religion and the Occult I 3 s.h.
25.103: World Music I 3 s.h.
25.104: World Music II 3 s.h.
26.81: Introduction to Philosophy 3 s.h.
26.102: Introduction to Ethics 3 s.h.
28.40: Art of Dance in Contemporary Society 3 s.h.
32.60: Introduction to Religions Studies 3 s.h.
32.72: Religion and Society 3 s.h.
32.62: Quest for Human Destiny 3 s.h.
32.64: Religion and the Occult in Antiquity 3 s.h.
32.121: The Good Society 2-4 s.h.
Transfer Students and General Education Requirements

Transfer students who have had courses elsewhere, that are similar to, but not approved for general education at Iowa, may receive credit toward general education requirements (acceptance of these courses will be determined by the student’s admission statement). If a transfer student brings to Iowa less than enough hours to meet a general education requirement, he or she may use only approved courses to complete the remainder of the requirement.

Transfer Students with A.A. Degree

Students admitted from Iowa Community Colleges who have received Associate of Arts degrees prior to the time of their first registration at Iowa will be considered to have met all the college general education requirements except the foreign language requirement. The program of study at the community college for which the A.A. degree was awarded must meet the following requirements: A minimum of 80 semester hours of credit acceptable for transfer, the completion of an agreed-upon group of courses at the community college, and at least a 2.00 grade-point average. A yearly review is conducted to assess whether students are meeting the stipulations in this agreement.

Course Limits and Waivers

No course from a student’s major department can be counted toward general education requirements, except those taken to satisfy the foreign language, civilization and culture requirement, or the foreign language requirement, or the physical education requirement, or the 3 credit hour Basic Mathematical Techniques, or 11:11 Interpretation of Literature. However, each department may waive 4 semester hours of general education requirements for its B.A. students, and 7 semester hours for its B.S. B.M., and B.F.A. students, in the area closest to or most relevant to its program. Each department will be asked to submit a statement indicating the course(s) or courses that designate the area in which it requests to waive these hours. Statements must receive the approval of the dean and the Educational Policy Committee.

Pass-Nonpass

No course offered to meet any of the general education requirements may be taken pass-nonpass.

Bachelor of General Studies

The Bachelor of General Studies degree is designed to accommodate 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, except 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. Individual students may put together one or more groups 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 should consult their advisors, not only in the area where it seems in their best interests to do so. In working out so 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., B.S., B.M., or B.F.A. degree instead, he or she must then meet all the general education requirements for these degrees.

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

Completion of The University of Iowa at least 45 semester hours of courses numbered 100 and above, including no more than 20 semester hours in one department.

Completion of at least 124 semester hours of college-level course work, including no more than 40 semester hours in one department from all colleges and no more than 30 semester hours in all colleges of the University. Enrollment in The College of Liberal Arts. Enrollment for at least one semester of rhetoric.

Achievement of at least a 2.0 grade-point average of college course work undertaken, all college course work undertaken at The University of Iowa, and at least a 2.0 grade-point average of college course work undertaken. All college course work undertaken at The University of Iowa, and at least a 2.0 grade-point average of college course work undertaken.

For purposes of the above requirements, all College of Education courses (prefix 75) are considered to be in one department, all College of Business Administration courses (prefix 85) are considered to be in one department, all College of Business Administration courses (prefix 85) are considered to be in one department except those in economics (prefix 68), and all Division of Mathematical Sciences courses with the prefix 22 are considered to be in one department.

Graduate students offered by the College of Education are considered to be in the College of Liberal Arts.

Bachelor of Arts in General Arts and Sciences, passes-nonpasses, electives, graduate courses, and good standing policies apply to B.G.S. students in the same way as to all other undergraduate students in the college.

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 attend 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 Regent’s universities (The University of Iowa, Iowa State University, and the University of Northern Iowa) are designations that correspond to the 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 an Associate in Arts (A.A.) degree from an accredited institution, or 62 semester hours of collegiate work acceptable for credit toward the A.A. degree. A student must satisfy the college's general education requirements; holders of the A.A. degree from accredited two-year colleges in Iowa may 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 as directed for 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 three of these distribution areas:

Humanities
Communications and arts
Natural sciences and mathematical discipline
Social sciences
Physical education

The B.L.S. degree is approved by the college-granting institution.

Or more 38 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 2.00 for all course work applied toward the degree, in all course work completed after admission to the program, and in all upper-level course work.

While the B.L.S. is awarded by the College of Liberal Arts, the program is administered by the Division of Continuing Education.

Two or More Bachelor's Degrees

Students who have already received a bachelor's degree are eligible for a different bachelor's degree must meet requirements for the second degree and complete at least 30 additional hours of study in residence in the College of Liberal Arts beyond the first degree.

Double Majors

Students may meet the major requirements 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.S. in psychology and sociology. No double majors can be earned unless both are in degree-granting departments or programs in the College of Liberal Arts.

Scholarship Requirements for Graduation

The general requirements for graduation include the elements of quality as well as the quantity of work completed. A student satisfies the qualitative graduation requirements of the college by earning a minimum grade-point average of 2.0 on (1) all college-level work attempted, (2) all work attempted at The University of Iowa, (3) 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) above who does have a cumulative grade-point average of at least 1.8 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 determined by multiplying by two the number of hours required for graduation at the time of enrollment.

The provisions of the preceding paragraph (the 1.90 rule for graduation) are not available to any student who enrolls at Iowa for the first time after May 1962 and who has not graduated by May 1966.

Majors in Education and the Teacher Education Programs

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

To be accepted into the TEP, a student must have attained sophomore standing (28 semester hours) and have earned a total cumulative grade-point average of at least 2.2. In order to remain in the TEP, the student must maintain a 2.2 total cumulative grade-point average.

To apply for admission to the TEP, complete application forms in the Liberal Arts Office prior to the start of the fall semester. Students admitted will be notified promptly. (See College of Education section in the Catalog.)

Collegiate Policies

Deadlines

Advisors

Courses may be added during the first three weeks of the semester (or first one and one-half weeks of the summer session) with the 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 and dropped at any time during the first two-thirds of the duration of the course. Similar proportionate deadlines will apply to the usual eighth-week summer session and for other special section 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-nopass and Audit

Pass-nopass registrations or revocations of pass-nopass registration and changes to audit or revoking audit may be made 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.

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 semester up to 4:30 P.M. of the last day of classes and prior to 4:30 P.M. of the fourth day from the end of the summer session.

Grading System

A: 4 grade points
B: 3 grade points
C: 2 grade points
D: 1 grade point
F: no grade points
Incomplete
A grade of I may be reported only if (a) the unassigned part of the student's work (other than in research, thesis, or independent study) is small; (b) the work is unfinished for reasons acceptable to the instructor; and (c) the student's standing in the course is satisfactory. Courses may not be repeated to remove Incompletes. Incomplete grades must be removed by completing the unfinished part of the work.
Failure to remove the incomplete during the next session for which the student is registered (except that students with incompletes from second semester are exempt from the need to complete the work during the succeeding summer session) will result in an F being assigned to replace the I. All special reports to the registrar removing incompletes must reach the registrar on or before the deadline for submitting final grades for the next session that the student is registered. No extensions to prevent the assigning of F's will be made. Instructors, if they desire, may allow students to make up incompletes at any time subsequent to the deadline, even if the incompletes have been changed to F's. In such cases, special reports containing regular forms must be sent for approval to the dean of the college since the instructor now is changing a grade.

No Report
The "no report" designation appearing on a student's semester record must be changed to a valid grade according to the semester rules. An "incompletes." Failure to remove the O by the specified date will result in an F being assigned for each such record.

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 no mark for dropping courses in the College of Liberal Arts after the third week. Instructors are encouraged to consult with the College of Education prefix 7 and General Science Program prefix 87. A mark of W will be assigned for all courses dropped after the first week and a half of a summer session. For courses that begin and end at times other than the beginning and end of the semester, students may drop these courses any time within the first one-fifth of the duration of the course without being assigned a mark of W.

Pass-No Pass
The option of taking courses P-N is available to all students in the College of Liberal Arts under the following conditions:
1. The signature of the adviser and the instructor must be obtained on the proper form. (In cases where multiple-section courses are involved, the department should have a uniform policy.)
2. The mark of "Pass" (P) may be used in lieu of grades of A, B, and C for authorized courses in the College of Liberal Arts. Students registered on a P-N basis who receive grades of D or F will have N entered on their record. The grades of P and N will not be used in computing GPA nor will the grade of N count as earned hours for graduation. Liberal Arts students taking courses in other colleges of the University will be subject to the grading policies of those colleges. Students from other colleges taking courses in liberal arts are subject to the College of Liberal Arts grading policies.
3. A student must be in good academic standing in order to be eligible for the P-N option. The academic adviser should not sign P-N forms unless the student is in good standing.
4. P-N grading may be used on elective courses only.
5. Not more than 18 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 56 semester hours may earn a maximum of 16 semester hours of P grades. Those who bring in more than 56 semester hours are limited to 8 semester hours.
6. Work in the major department is not available on a P-N basis, except by departmental action for courses which are not eligible for credit toward the departmental major. Courses required for the major in cognate or related areas may be taken on a P-N basis, if available, at the discretion of the major department.
7. A student may register for a maximum of two P-N courses per session.
8. A student is not registered for P-N unless he or she turns in a properly completed P-N form during registration or to the registrar before the end of the third week of classes (end of the first week and a half of a summer session). Any change from P-N to grade status to P-N must be made by completing a properly completed P-N form to the registrar before the end of the third week of classes (end of the first week and a half of summer session).
9. For courses eligible for P-N that start after the regular beginning of classes in any session, students may turn in properly signed Pass-No Pass slips at any time prior to the beginning of the courses and during the first one-fifth of the duration of the course.

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:
1. When approved by the department and the dean of the college, the grade of "satisfactory" may be used in courses in which, in the judgment of the department, the instructional purposes of the course will be best served by grading 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.
2. Grades of S may be earned in the major. No forms will be needed to register for a satisfactory-fail course. All students in such courses will receive either an S or an F.
3. The grade of F under the satisfactory-fail system 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 and attending classes with the special permission signature of the instructor of the course. 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 audit or audit to credit basis must be made within the first three weeks of classes (end of the first week and a half of a summer session), using a change of registration form with the necessary signatures.

The mark of R will be assigned to those courses 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 be graded on the R/W grade basis. Courses completed with a mark of R will not meet any college requirement, and carry no credit toward graduation. Auditing may not be used as a second-grade option.

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 in (2) by the number of hours undertaken, excluding courses in which
grades of W or F are given. Grades of S are included in hours attempted and are used in computing the grade-point average.

Deficiency in English
Any instructor who finds the written work of a student seriously defective in the English is expected to report the case, together with specimen papers, to the writing supervisor of the Rhetoric Program, who shall have authority to require additional work in composition without credit. Instructors are authorized to refuse credit or to give a reduced grade to written work which does not demonstrate as accurate, effective use of the English language.

Duplication
Duplication occurs when a student takes the same course more than once. Whether duplication 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 duplication. Both grades for courses when duplication has occurred will count in the student's grade-point average.

Regression
Regression occurs if a student takes a lower-level course (which may be a prerequisite) after having satisfactorily completed a more advanced course in the same subject. Grades for courses where regression has occurred will count in the student's grade-point average. 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.

Area of Concentration or Major
The executive officer of the department or area in which the student wishes to concentrate for the major or major study specifies the requirements in this area. In most instances, requirements are stated in connection with the departmental area announcement in the Catalog. However, a student college or major may consult her adviser in outlining plans for a major.

Maximum Credit in One Department
No more than 30 semester hours of credit earned in one department or degree granting program may be applied toward College of Liberal Arts requirements for the Bachelor of Arts or Bachelor of Science degree.

Semester Load Limit
The normal schedule is 15-18 semester hours for a semester, 45-54 for a summer session. No student may register for more than 20 semester hours in one semester, or 10 in a summer session, without the permission of one of the associate deans in the Liberal Arts Advisory Office.

Credit from Other Colleges
The College of Liberal Arts will accept toward the bachelor's degree up to a maximum of 30 semester hours of credit the student may have completed in all other colleges of the University while the student is enrolled in the College of Liberal Arts.

Examinations for Credit
Validation of Credit
Students with educational experience obtained at an accredited institution or in a formal training program in which there is no standardized procedure for evaluation of credit may request the validation of this credit. The Liberal Arts Advisory Office and the department concerned should be consulted for approval to take the appropriate examinations.

Advanced Placement and Credit in Nonmajor Areas
Students who have pursued college-level courses in high school or otherwise attained equivalent competence may be awarded advanced placement and credit on the basis of their performance in appropriate examinations. The examinations shall be those prepared by the Advanced Placement Program of the College Entrance Examinations Board or by a recognized test construction agency or group as approved by the Educational Policy Committee. These include the College-Level Examination Program (CLEP) and the Advanced Placement Program (AP) of the College Entrance Examination Board.

In the case of foreign languages, credit toward graduation will be awarded only for passing examinations covering sophomore-level (or above) course work.

Information about the CLEP tests may be obtained from the Liberal Arts Advisory Office. For information about Advanced Placement tests, write to the College Entrance Examination Board, 475 Riverside Drive, New York, N.Y. 10027.

Examination Credit in the Major
Departments may administer examinations covering required courses or areas of instruction in the major field and may grant credit with a grade of P for the successful completion of such examinations. The maximum credit by examination which may be awarded in the major field is 18 semester hours.

Second-Grade-Only Option
For courses taken at The University of Iowa, a student may repeat that course at the University whose option in regresion is involved, and have only the grade of the current registration used in calculating The University of Iowa grade point or the total cumulative grade-point average.

This provision may be applied to a maximum of 16 semester hours of work from all sources. A student who wishes to utilize the provisions of this rule should:
Register in the usual manner for the course he or she decide to repeat or to add it during the regular period for adding courses (the first three weeks of the semester or the first week and a half 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 counting 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 not be offered within the necessary time period the student has available, or it may not be offered, or disciplinary actions concerning grades may be involved. 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 or nonpass the first time, he or she may take it pass-fail or pass 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 89 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 fill out 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 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 own 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 repeat cases cancel the student's registration for the course if attendance is unsatisfactory.

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

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. Requests for excused absences for this purpose are available in each department under the supervision of the Liberal Arts Advisory Office. Students should not be asked to obtain excused absences from the Student Health Service.

Final Examinations
A suitable period for the administration of examinations is set aside at the end of each semester during which time no classes are held. With the exception of any changes authorized by the dean, all final examinations must be given according to the schedule as announced. Students are expected to be present for final examinations at the times scheduled. If a student has two examinations scheduled for the same time period or more than three examinations scheduled for the same day the student may file a request with the registrar to have the conflicts resolved.

Mid-Semester Reports
Faculty members are expected to report mid-semester grades for all students whose work is below C. Mid-semester report cards must be sent to the Office of the Registrar on forms provided for that purpose. These reports are distributed to advisors and to individual students. Delinquent grades are not recorded on a student's permanent record.

Student Conduct
Any offense against good order committed by a student in a classroom or a laboratory may be dealt with summarily by the instructor or referred to the instructor by the Dean. The instructor should report any disciplinary action which he or she takes to the dean's office. If the student involved is enrolled in another college, the report should be made to the dean of that college or the dean of students.

Student Dishonesty
All cases of cheating or plagiarism in the College of Liberal Arts should be reported for action to the Office of the Dean of the college through departmental channels with a statement of the necessary facts. The department and the instructor concerned may also submit recommendations in each case for appropriate disciplinary action. The individual instructor may reduce the student's grade, including the assignment of the grade of F in the course. After an appropriate hearing the dean of the college may impose the following or other penalties as the offense may warrant: disciplinary probation, suspension from the college, or recommendation of expulsion from the University.

Probation and Dismissal
Students who fail to attain the following minimum cumulative grade-point averages (GPA) for their class are placed (or continued) on academic probation.

- Freshmen (less than 28 semester hours): 1.60
- Sophomores (28 to 55 semester hours): 1.80
- Juniors (56 to 89 semester hours): 1.70
- Seniors (90 or more semester hours): 1.90

The Dean of the preceding paragraph (minimum grade-point averages needed in order to be good academic standing) do not apply to any student who enrolls at Iowa for the first time for any reason after May 1966 and who has not graduated by May 1986. The minimum grade point averages for good standing for these people are:
- Freshmen: 1.90
- Sophomores: 1.75
- Juniors: 1.50
- Seniors and unclassified: 2.00

Students on probation whose cumulative GPA is below these minimum grade-point averages listed 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 semester; 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. Students who are probationary for scholarship at the close of the spring semester will at their own 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 register for an interval of one year. The petition must present evidence that changes have occurred in the status of the student which indicate improvement of performance in college work. A student granted permission to register under the provisions of this paragraph will be registered on scholastic probation and if 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 reenroll. A record of each student's scholastic performance is kept in the Office of the Registrar and the Liberal Arts Advisory Office. Students placed on probation, continued on probation, or
Aerospace Military Studies

Department head: Lt. Col Michael P. Nolan
Faculty: Professors: Mr. Major J. A. Armstrong, Capt. Thomas W. Schramm, Capt. James W. Allen

The Department of Aerospace Military Studies administers the Air Force Reserve Officer Training Corps (AFROTC) at The University of Iowa. The purpose of AFROTC is to recruit, educate, and commission highly qualified students to be officers in the United States Air Force.

AFROTC is entirely voluntary and the courses are open to all undergraduates and graduate students. The amount of credit given toward a degree for AFROTC academic work varies with the colleges at the University.

In order to receive a commission, AFROTC cadets must complete all University requirements for a degree and complete certain courses specified by the U.S. Air Force. Three programs are offered to complete the U.S. Air Force requirement. A student may complete the four-, three-, or two-year AFROTC program.

Four-Year Program

The four-year program consists of the General Military Course (GMC) and the Professional Office Course (POC). The GMC awards a no-obligation book at AFROTC. In addition, students also receive uniforms for AFROTC appointment.

The GMC consists of four one-credit AFROTC courses and the Leadership Laboratory. To be appointed as a Freshman, a student takes 23A:11-12 The Air Force Today and an introductory book at AFROTC. The GMC consists of four one-credit AFROTC courses and the Leadership Laboratory. To be appointed as a Freshman, a student takes 23A:11-12 The Air Force Today and an introductory book at AFROTC.

The professor of aerospace studies may give credit toward completion of the GMC for previous military experience.

Three-Year Program

The three-year program is the same as the four-year program except that a student compresses the GMC into one year. Sophomore takes the freshman and sophomore sequence simultaneously. This results in two semester hours of AFROTC plus 23A:98-97 Leadership Laboratory.

Two-Year Program

The two-year program consists of field training and the Professor of Professional Office Course (POC). Entry into the two-year program is competitive and requires a student to have at least two academic years of either undergraduate or graduate work remaining in college.

The POC consists of four three-credit AFROTC courses and 23A:98-97 Leadership Laboratory. Juniors take 23A:11-14-15 Management and Leadership and seniors take 23A:112-113 National Security Forces in Contemporary American Society. Students desiring to enter the two-year program should contact the professor of aerospace studies by the January before the fall semester of their junior year. Applicants must be evaluated on the basis of college major, grade, ACT/SAT scores, the Air Force Officer Qualifying Test (AFOQT), an air force medical exam, a personal interview by a board of U.S. Air Force officers, successful completion of field training, and the recommendation of the professor of aerospace studies.

Students accepted into the POC incur a commitment to serve a minimum of four years as a U.S. Air Force officer.

Leadership Laboratory

Leadership Laboratory is a cadet-centered activity. It is largely cadet-planned and directed toward providing leadership training experiences which will improve a cadet’s ability to perform as a U.S. Air Force officer. Freshmen and sophomores learn air force customs and courtesies, drill and ceremonies, wearing of the uniform, and the benefits of an air force career. Juniors and seniors plan and direct the Cadet Corps activities.

Field Training

All cadets must successfully complete field training during the summer at a U.S. Air Force base. There are two types of field training: a four-week course for cadets in the four-year program and a six-week course for two-year AFROTC cadets. Normally, a student attends field training between the freshman and junior years.

Field training consists of aircraft, survival, career, and survival orientation, junior officer training, physical training, small arms training, human relations education, and equal opportunity training. The six-week field training provides 60 hours of academics that a student normally would have taken as a freshman and sophomore.

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

334:17 The Air Force Today 1.5
334:18 The Development of U.S. Air Power from early military use of balloons to the contemporary use of drone vehicles: emphasizes student's speaking skills. Offered fall semester.
334:21 The Air Force Today 1.5
334:22 The Development of U.S. Air Force in today's global environment, the role of military forces, and the future of the United States military. Offered both fall and spring semesters.

Special Activities

The Cadel Corps sponsors many social events, including informal parties, a formal dinner, the Cadet Ball, and an awards ceremony. Cadets can join the Air ROTC, a national professional honor society dedicated to developing leadership qualities and to serving the community. The Advanced Training Program is a voluntary program in which selected cadets may go on active duty for two or three weeks during the summer following their junior year. Cadets get "hands-on" experience and receive authorized pay and allowances. Select AFROTC cadets may attend airborne training and upon completion wear the army parachute "jump wings."

Financial Assistance

AFROTC scholarships are available for 4, 3, 2, 1/2, and 1 years. In addition, 3- and 2-year pre-health professional scholarships are offered. All scholarships are based on merit and provide full tuition, books, library fees, and $1,000 a month tax-free subsistence allowance. Applicants are selected using both objective and subjective factors. Students should apply directly to the professor of aerospace studies.

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

Educational Delay

Cadets may request an educational delay to postpone entry to active duty until after completion of an undergraduate degree or professional training program.

Afro-American Studies

Program Chair: Daniel T. Turner
Faculty: Darwin J. Turner, Vivian (English/Afro-American Studies)
associate professor in Research (English/Afro-American Studies), Fredrick Woodard (English/Afro-American Studies)
Professor Jonathan Wall (History/Afro-American Studies, emeritus, Political Science, Anthropology, Geography, History, Political Science, Sociology, and Sociology)
Degree offered: M.A.; also gives concentrations in Afro-American Studies. The Afro-American Studies Program offers a major leading to a degree in Afro-American Studies and a major whose career will require understanding and knowledge of Black Americans.

Undergraduate Study

The Afro-American Studies Program offers major, minor, and non-matriculated students. The semester hours required for the minor conform to the unit specified for all majors. In consultation with his or her adviser, the student selects 18 semester hours designated Afro-American Studies courses. Like all courses 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 study of the African Peoples, 4580 Introduction to African-American History, and 4580 Advanced Introduction to African-American Culture, and an additional course numbered 45 through 155. Also recommended as background for more advanced courses in Afro-American literature and history are 45:116-117 African-American Literature I and II and of the following: 45:155 Afro-American History I: 1890-1930, 45:168 Afro-American History I: 1890-1914, and 45:168 Afro-American History I: 1914 to the Present.

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 examination in 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 includes the baccalaureate semester hours, normally completing the requirements for a baccalaureate degree. Requirements include 45:211 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 8 semester hours in literature/history by taking 45:155 or 45:168 Afro-American Literature I, 45:155 or 45:168 Afro-American History I: 1890-1930, 45:168 Afro-American History I: 1890-1914, 45:168 Afro-American History I: 1914-Present. Students who have earned undergraduate or graduate credit for a year-long survey of either Afro-American literature or Afro-American history may satisfy the literature/history requirement by studying the area in which they have no credit. Students who have earned graduate credit in Afro-American literature and Afro-American history may be required to complete both 45:116-117 Afro-American Literature I and II and of the following—45:155 Afro-American History I: 1890-1930, 45:155 Afro-American History I: 1890-1914, 45:155 Afro-American History I: 1914-Present. With only 6 hours of credit allowed toward the M.A. degree, a student who has completed a minimum of 12 graduate hours or graduate courses 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 adviser.

Because the doctorate is not offered in Afro-American studies and the Afro-American studies program seeks to encourage doctoral study for those who have the ability, interest, and resources, it recommends that the other 9 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-half 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 deliberating 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 of 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 be related to the field of Afro-American culture and/or experience and must utilize research from more than one discipline. The maximum credit for such a thesis is 6 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 adviser, a project related to Afro-American culture and/or experience. When completed, this project must be presented and defended before an appropriate class in Afro-American studies.

Admission Requirements

In addition to the general requirements of the Graduate College, unconditional graduate standing in 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 or collegiate credit in Afro-American 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 admission 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 committees of the Afro-American studies steering committee.

Concentration within M.A. Program in American Studies

Generally, a student seeking a concentration in Afro-American studies within a Master of Arts program 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 36 post-baccalaureate semester hours required for completion of the Master of Arts degree, 12 are taken in Afro-American studies. Since the Afro-American Studies Program is interdisciplinary, students taking 18 hours are required to complete 45:211 Introduction to Research in Afro-American Culture, 45:116-117 Afro-American Literature I and II, and two of the following—45:155 Afro-American History 1890-1930, 45:168 Afro-American History I: 1890-1914, 45:168 Afro-American History I: 1914-Present—except when they have taken equivalent courses at the undergraduate level. Further requirements, see the program for a Master of Arts in American studies, described in the following departmental section of the Catalog.

Concentration within 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/university level. Of the minimum 72 post-baccalaureate semester hours required for the degree, at least 30 semester hours (not including the three required in Afro-American studies, including 45:211 Introduction to Research in Afro-American Culture, 45:116-117 Afro-American Literature I and II, of the two
following—45:165 Afro-American History 1880-1920, 45:166 Afro-American History 1830-1914, 45:168 Afro-American History 1914-Present—except when the student has completed 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 draw upon 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, 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 an advisor in Afro-American studies.

Cocurricular Activities Related to Afro-American Studies

Black Kaleidoscope

Periodically the Afro-American Studies Program attempts to promote knowledge and consciousness of Afro-American culture by sponsoring Black Kaleidoscope, a series of lectures and demonstrations by scholars and artists distinguished in Afro-American culture.

Institute in Afro-American Culture

From 1968 through 1975, The University of Iowa each summer served as host for an Institute in Afro-American Studies for college and university teachers. The institutes, which brought renowned artists and lecturers to the campus, focused on such topics as the Harlem Renaissance, Richard Wright, W.E.B. DuBois, Black Americans in television and advertising, etc.; although students in residence in the University are not eligible to be official members of the institute, they are permitted to enroll in a three-half semester course which is offered at the same time as the institute and on the current year's topic. The program plans to offer institutes in future summers.

Black Action Theater

Academically sponsored through the 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 intercultural understanding among all 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.

Afro-American Studies Graduate Student Association

The Afro-American Studies Graduate Student Association attempts to promote interest in Afro-American culture by sponsoring programs on various topics. Any graduate student of the University who is interested in Afro-American Studies is eligible to be a member.

Related Courses

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

Business Administration
62:120 Employment Relations and Public Policy 3 s.h.

Economics
6E:137 Profits and Income in Urban Economies 3 s.h.

Education
7F:104 Education in the Third World 2-3 s.h.
7F:190 Educational Sociology 2-3 s.h.
7F:380 Seminar: Value Problems in the Administration of African Education 3 s.h.
7F:109 Socialization of the School-Age Child 2-3 s.h.
FL:113 The Culturally Different in Educational Settings 3 s.h.

History
18:01 American History, 1492-1877 3 s.h.
18:52 American History, 1877-Present 3 s.h.
18:63 United States in the Early Republic 3 s.h.
18:64 Civil War and Reconstruction 3 s.h.
18:10 The Global Age in America 3 s.h.
18:168 The Progressive Era in America 3 s.h.
18:167 The New Era and The New Deal 1900-1945 3 s.h.
18:168 The Contemporary United States 1840-Pres 3 s.h.
18:16 The Revolutionary Generation in America 3 s.h.
18:176 American Thought and Civilization 1865-Present 3 s.h.

Courses

Afro-American Studies and Related Areas

For Undergraduates Only

467 Art, Race, and Identity 3 s.h.

468 Literature of the Forbidden People 4 s.h.

511 African-American Poetic Tradition: African-American poetry, its role in oral tradition and its spirituality 3 s.h.

512 Black Poetry Workshop 3 s.h.

513 Women in Afro-American Thought 3 s.h.

514 Afro-American Social Movements 3 s.h.

515 Afro-American Art 3 s.h.

516 Introduction to Afro-American Family 3 s.h.

517 Afro-American Studies in the Classroom 3 s.h.

518 Afro-American Studies: The social and cultural history of Afro-American women 3 s.h.

519 Afro-American Education 3 s.h.

523 Introduction to Afro-American History 3 s.h.

524 African Literature through a study of major works in the social, political, and economic dimensions and developments 3 s.h.

525 African Thought through a study of major works in the social, political, and economic dimensions and developments, and philosophy—have contributed to the development of Black culture.

Primary for Advanced Undergraduates and Graduate Students

413 African Studies 3 s.h.

An examination of Africa by contemporary Africans; reading list includes a selected reading list for selected books, including Africa, on the Continent.

4174 Afro-American Art 3 s.h.

Work of Afro-American artists and sculptors with emphasis on their cultural expressions and their relationship to the issues of art and the society.

4175 Art of West Africa 3 s.h.

4179 Black Literature and African Experience 3 s.h.

4179 Art of Africa 3 s.h.

4179 Art of Africa 3 s.h.

4181 Black Literature and African Experience 3 s.h.

4181 Black Literature and African Experience 3 s.h.

4181 Black Literature and African Experience 3 s.h.
Students should take the introductory gerontology course prior to or concurrently with the courses in the program. The research project or the practicum should not be taken until the first nine semester hours of the program are completed.

Program Eligibility

The program is open to all interested graduate, upper-level undergraduate (must have completed forty-five semester hours), and special status students whose particular career interests and needs will be served by completing the program.

Students in good standing at the above mentioned levels may establish plans of study with the Aging Studies Program coordinator who will work with the students and their advisors to shape the plan of study to complement each student's academic program and career interest.

Students should contact the Aging Studies Program coordinator to develop an appropriate plan of study. The program will include the required courses, as well as a recommendation for the sequencing of course work to be taken. The coordinator will keep a record of the student's approved program and of the student's progress. Upon completion of the program, the coordinator will notify the Registrar who will indicate completion of the program on the student's transcript.

Courses

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

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

- 17:108 Basic Aspects of Aging
- 34:130 Aging and Society
- 42:199 Selected Aspects of Social Work
- Social Welfare
- 99:129 Introduction to Gerontology

Practicum and Research Courses

At least three and no more than six semester hours of credit for a practicum and/or research course will be accepted for the Aging Studies Program. Practicum and research courses include:

- 17:119 Directed Studies in Family Development
- 42:199 Selected Aspects of Social Work
- Social Welfare
- 99:130 Seminar: Research on Aging

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

Elective Courses

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

- Business Administration
- 6F:123 Public Economic Security Programs
- 7C:280 Topical Seminar in Consumer Education
- Dentistry
- 112:145 Introduction to Geriatric Dentistry
- Family Practice
- 115:521 Perspectives on the Process of Aging
- Health and Hospital Administration
- 80:113 Long-Term Care
- Home Economics
- 17:211 Individual and Family Development: Life Span (Partial Credit)
- Nursing
- 96:104 Nursing IV (partial credit)
- 96:131 Nursing Care of the Institutionalized Gerontological Client
- Physical Education
- 27:112 Physical Activity and Aging
- Recreation Education
- 104:148 Contemporary Issues in Recreation and Leisure: Aging Reality or Socially Imposed
- 104:182 Aging and Leisure
- Religion
- 30:193 Death and Dying
- Sociology
- 34:233 Aging and Human Development
- Social Work
- 40:1 Aging and Social Work
- 42:280 Human Behavior: Selected Aspects Issues of the Elderly
- Speech Pathology
- 53:302 Seminar on Communication and Aging
- Zoology
- 37:271 Seminar in Cell Physiology: Biology of Aging

American Studies Program

Program chair: Albert E. Strauss

Faculty: Associate Professor Noelle Feltkamp (English/ American Studies), Margaret B. McDowell (Religious/ Women's Studies), Albert E. Strauss (American Studies/English), Daniel T. Turner (Afro-American Studies/English)

American Studies: Provisions for the American Studies Program are made in the course descriptions in the Department of Anthropology and Sociology. The course offerings are as follows:

- American Studies 101: Introduction to American Studies
- American Studies 102: Survey of American History
- American Studies 103: American Literature

For information about the American Studies Program, contact the Department of Anthropology and Sociology.

In its course work and for its majors, the American Studies Program provides 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 related 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 popular and high culture, institutions, values, social processes, artifacts, and the contributions of subcultures.

Bachelor of Arts

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

With his or her adviser'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 to explore a common period, topic, theme, or problem in American culture and experience. The major normally consists of 12 classes totaling 36 semester hours and including four courses (12 semester hours) in American and/or Afro-American studies, two courses (6 semester hours) in other 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:

- Required courses:
  - 45:1 American Values 3 s.h.
  - 45:90 Turning Points in American Culture 3 s.h.

- Two of the following:
  - 45:2 American Issues 3 s.h.
  - 45:3 Women in American Culture 3 s.h.
  - 45:4 Family and Sex Roles: Alternatives to Stereotypes 3 s.h.
  - 45:5 Media Studies 3 s.h.
  - 45:6 Regional Studies: The American West 3 s.h.
  - 45:7 Sex, Race, and Ethnicity 3 s.h.
  - 45:8 African Music 3 s.h.
  - 45:80 Introduction to Afro-American Sociology 3 s.h.

- 45:81 Introduction to Afro-American Culture 3 s.h.

- 45:102 Readings in American Studies 3 s.h.

- 45:162 Childhood and Youth in America 3 s.h.

- 45:153 Aging in America 3 s.h.

- 45:158 Visual Arts and American Culture 3 s.h.

- 45:161 American Institutions: The Business Corporation 3 s.h.

- 45:163 American Communists: Field Work 3 s.h.

- 45:186 Autobiography and American Culture 3 s.h.

- 45:188 Popular Culture 3 s.h.

The history requirement may be met by two of the following:

- 18:51 Colloquium for History 3 s.h.

- 18:61 American History 1492-1797 3 s.h.

and/or

- 18:62 American History 1777-Present 3 s.h.

General education courses in historical perspectives, humanities, literature, and social sciences provide relevant preparatory work for the minor. Since the major and minor are so closely related, no one student is expected to pursue both simultaneously.

Honors

Honors candidates in American studies must take 45:90 Turning Points in American Culture and 45:99 Honors Project. With his or her advisor's help, the student in 45:99 defines a research project on an American studies topic, does the research, and presents the results of the research in a senior essay.

Minor

Students interested in a minor in American studies are invited to consult members of the staff.

Master of Arts

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

American Studies Program/LIBERAL ARTS
Historic Site, and the Putnam Museum, Davenport. A candidate conducting research during such on-the-job training may receive academic credit. Other internships in social agencies, government, or business may also be arranged and course credit allowed when a research component is included.

Courses

Primarily for Undergraduates

451 American Values

3 b.

An investigation of American studies as representative acts, arts, and cultures within historical and contemporary perspectives.

452 American Issues

3 b.

Topics and problems in American studies and women's studies.

453 Women in American Culture

2 b.

Topics include pioneer women, women and work, and the status of women in American art.

454 Family and Sex Roles: Menstruation in Marriage

2 b.

Women and the family; homosexuality in American history and culture.

455 Radio Studies

3 b.

Studies in film, television, caricature, the new journalism.

456 Regional Studies: The American West

3 b.

Journalism, history, or folk music.

457 America and the Future of Man

3 b.

Intensive investigation of a single theme or period in American culture, employing a variety of materials and an interdisciplinary perspective; possible topics include the 1850s, the frontier in myth and reality.

458 Independent Research and Writing on an Interdisciplinary Topic

3 b.

Independent research and writing on an interdisciplinary topic. 

For Undergraduates and Graduates

459-499 Readings in American Studies

on

459-509 The Future of Man

2 b.

462 World and Writings in American Life

2 b.

Same as 104, 105.

463-464 Literature and Culture of American Indians

16

The formative period in American culture, studied through historical works, art, and literature; special emphasis on special topics, including those on the period from the 17th to the 19th century. colonial and post-colonial life.

465-468 Reading and Writing on an Interdisciplinary Topic

3 b.

Studies in major phases of the life cycle, in the social and cultural development of the American Indian.

469-470 Spelling and Handbook

2 b.

Spelling, grammar, dictionary, and other aspects of language used in American society.

471 Historic and Cultural Studies in the Midwest

3 b.

Historical and cultural studies in the midwestern resoarch: architecture, rural and urban, climate, and other aspects of life.

473-474 Special Topics in American History

3 b.

Advanced topics in American history. 

476-477 Special Topics in American History

3 b.

Advanced topics in American history. 

485-488 Bachelor of Arts in the Humanities

3 b.

Bachelor of Arts in the Humanities.

490-493 American Civilization: The Twentieth Century

3 b.

Interdisciplinary study of American society and culture. Same as 110, 111.

494-495 American Civilization and American Culture

3 b.

Topics in American culture and the life and experiences of sub-cultures as reflected in American culture, whose complex role in the modern American society. 

496-497 Teaching American Humanities in High School and Community College

3 b.

Same as 75, 76.

499-500 Special Topics in American Culture

3 b.

Examination of several facets of American popular culture, such as the comic book, musical, the Western, the cowboy film, and the adolescent drama; emphasis on their relation to other facets of American life.

Primarily for Graduates

450-459 Topics in American Studies

4 b.

Topics, methods and views in American cultural studies, with special attention to social science approaches.

460-461 Historians, Literature, and American Culture

3 b.

Approaches to literary and historical disciplines and the interactions of American culture and cultural history.

462-463 Psychology and Culture

3 b.

Psychology and post-Freudian theories and analyses of culture and personality. 

464-465 Special Graduate Projects

3 b.

Independent research and writing on an interdisciplinary topic.

466-467 Special Graduate Projects

3 b.

Independent research and writing on an interdisciplinary topic.

Anthropology


All of the faculty members are specialists in anthropology and all are active in research and teaching.

Bachelor of Arts

An undergraduate major in anthropology provides a solid foundation for careers not only in anthropology but also in a variety of fields involving work with persons from cultures and subcultures different from one's own. Three fields: health care, education, and urban and community planning. The major requires at least 30 semester hours of course work in anthropology, including:

1120 Introduction to the Study of Culture and Society

3 b.

1120 Introduction to Prehistory

3 b.

1120 Introduction to Cultural Anthropology

3 b.

In addition, each student must take one course in anthropology other than "laboratory methods, one course in ethnology, and one course in social institutions. The remaining hours are to be selected in consultation with the adviser. Anthropology offers 14,500 courses dealing with language and culture, social problems of underdeveloped areas, economic anthropology, religious activity in folk and tribal settings, primitive art, biological anthropology, environment and culture, and urban anthropology. Specialization is encouraged in the major field of anthropology which is designed to give the student the broadest possible cross-cultural background. Course work is encouraged in related areas as sociology, linguistics, geography, history, psychology, zoology, and statistics. Students are also encouraged to participate in anthropological field research.

Archives

Honors

The honors program in anthropology is open to students with a minimum cumulative grade-point average of 3.0 overall and 3.2 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 course.

Field Research

Opportunities are available for students to participate in anthropological 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.
Doctor of Philosophy

Graduate training in anthropology at the Ph.D. level is designed to lead to professional careers 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. The specialization a student at the University of Iowa currently may select include archaeology, linguistic anthropology, and socio-cultural 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 course work:
- 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 archaeological specialization in a major geographic area (for example, North America, Mesoamerica, Oceania, Southeast Asia, the Caribbean, Europe), approved by the student's Ph.D. advisory committee;
- Completion of a major and minor topical area;
- A written comprehensive examination in the student's area of specialization;
- Preparation and oral defense of dissertation.

Archaeology/Museum 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 or small 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.

Graduate Admission

Applications 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 meet 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 a 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.

Applications for admission to the graduate program must be accompanied by a 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 training; score on the Graduate Record Examination; and at least one typed 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 the final approved thesis; an applicant who earned a M.A. without thesis or whose thesis is not yet complete should submit typewritten copies of three chapters completed in graduate school.

It is advisable that the applicant have at least 3.0 grade-point average. However, applicants with lower grade-point averages may be admitted with conditional status if other criteria indicate potential for graduate work.

Bachelor of Arts

The B.A. candidates in art or art history must earn at least 74 semester hours of credit in non-art courses, but may apply no more than 88 non-art hours of credit toward the total of 124 hours of credit required for the degree.

Course-listed courses originating in the School of Art and Art History may not be counted toward fulfilling the general liberal arts course 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 hours
- 1A:1-10/1A:2-10: 2 hours
- 1A:3 Basic Drawing
  - 2 hours
- 1A:4 Basic Design
  - 2 hours
- 1A:5 Intermediate Design
  - 2 hours

Any two of the following courses:

1C:50/52: 2 hours
- 1D:54/56 Introduction to Metalworking and Jewelry
  - 2 hours
- 1D:50/52: 2 hours
- 1K:15/16 Undergraduate Sculpture I
  - 2 hours
- 1K:16 Undergraduate Sculpture II
  - 2 hours

One introductory studio course from each of the following studio areas

- 4 hours
- Design
- Drawing
- Painting
- Photography
- Printmaking
- Textiles (5 cross-listed with an art number)

Electives to bring the total number of credits in History of Art, Studio, or Art Education courses to a minimum of 38 semester hours.

No more than 50 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 5 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 exclusion 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 18 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.

Honors students in art history must maintain a minimum grade point average in art history of 3.5, and must complete six semester hours (beyond the 18 semester hours of intermediate and advanced art history) in a seminar and an honors thesis, for 3 semester hours each.

Non-art credits must include two or more semesters of a second foreign language, and at least 16 semester hours in at least three areas, including two of the following: anthropology, classics, drama, history, language, literature, music, philosophy, religion, or sociology.

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

Art Education

Students seeking the B.A. degree in art education may choose either the studio or art history emphases, subject to the requirements described above. In addition to the general requirements for teacher certification (see the "College of Education" section of the Catalog), they must satisfy these specific requirements:

1E:06 Concepts in Art Education
- 2 hours
- 1E:126 Art Education Studio
- 3 hours
- 1E:413 Methods: Art
- 3 hours
- 7S:155 Advanced Methods: Art
- 3 hours
- 7S:157 Seminar: Curriculum and Student Teaching
- 3 hours
- 1E:124 Practice in Elementary School
- 6 hours
- 7B:191 Observation and Lab Practice in Secondary School
- 6 hours

The following courses are electives:

- 7S:157 Aesthetic Education
- 2 hours
- 1E:230 Art Education and the Museum
- 3 hours

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 studio area of concentration, but before completion of 50 semester hours in art.

The B.F.A. requires 63 semester hours of credit in School of Art and Art History courses. In addition to the general education and major requirements listed above, students with studio emphasis, the B.F.A. candidate must complete three courses in a studio area of concentration beyond the fundamental core, and must complete at least the second semester of course work in each

professional artists to its permanent faculty. It was also among the first schools of art to job studio art with art history studies, reflecting the concept that the living artist will benefit from a formal study of the traditions of art, and a prospect for historians from personal experience with the creative process. The emphasis on the intellectual productivity of its faculty founded an educational philosophy that made Iowa one of the first universities to accept creative work for academic credit. The school early established a tradition of and achieved national recognition for presenting large exhibitions of contemporary American painting and sculpture. Its national image and position are maintained not only through The University of Iowa Art Museum, its program of exhibitions, and its growing collection of art works of all periods and nations, but also through its continuing program of employing visiting artists and scholars of both national and international prominence. The fluidity of its undergraduate and graduate programs in art history continues with the support of an excellent art library and a large collection of visual materials. The employment of visiting lecturers for short-term workshops, in addition to the permanent faculty, continues to keep students directly involved with current scholarship.

A number of the school's graduates enjoy success as practicing professional artists, current historians, art department administrators, museum directors and curators, illustrators, and teachers. Regardless of employment, depressions, or graduation, the school has traditionally continued to find accessible and significant career avenues.

Although the emphasis has always been placed on the fine arts and specifically commercial art courses are not part of the program, many graduates have taken jobs as commercial or industrial designers.

As far as possible, the design of academic programs is arranged to meet the individual student's needs. It permits the same flexibility as 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 at least six areas of studio art. The aim of the joint curriculum is to give students a basic understanding of the visual arts, art history, and art criticism. It does not focus on particular short-term styles or fashions.
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 with a concentration in a particular field.

Requirements include:
- A B.A. or B.F.A. degree, with at least 18 semester hours of undergraduate work in art history;
- A minimum of 30 semester hours of graduate-level course work, with a grade-point average of 3.0 or higher;
- At least one semester intermediate (100-level) course compared with at least a 3.0 grade in each of five of the following areas of art history:
  - Ancient (to 300 A.D.);
  - Medieval (300-1600);
  - Renaissance to Baroque (1500-1700);
  - Nineteenth Century to Modern;
  - Primitive and Pre-Columbian;

Course distribution for the M.A. in art history is as follows:
- 91294 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
  0-6 s.h.
- Courses outside the school
  0-9 s.h.

Students with little or no undergraduate studio work are required to take two courses in different studio fields; students with substantial undergraduate studio training will be exempted from the graduate studio requirement. A student preparing to teach in both the art history and studio areas will take 12-15 semester hours of studio work, with a minimum of 9 semester hours in one 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 studio work in art history are encouraged to take courses outside the school.

Within the final 30 semester hours of graduate work, the M.A. candidate will be expected to demonstrate the ability to read 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 two language department, satisfactory completion of the final semester of a P.D.X. 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 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 the M.A. degree in studio with a major in ceramics, design, drawing, metalworking and jewelry, multimedia and video art, painting, photography, printmaking, or sculpture.

The degree requires:
- The B.A. or B.F.A. in art equivalent to that offered at the University of Iowa (undergraduate deficiencies, if any, may be made up on a course-basis); in addition to the graduate requirements.

A minimum of 38 semester hours of graduate work, including at least 12 semester hours in major studio subjects, a total of at least 21 semester hours in studio courses, 9 semester hours in the history and theory of art, and up to 8 semester hours of courses outside art and art history.

 Clearance for M.A. candidacy by faculty review, and
- Studio and written thesis.

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

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

A student preparing to teach in both the studio and art history areas may offer two art history minor of 15 semester hours, including 191244 Seminar: Methodology of Art History and Criticism, and one other Seminar.

The following are hours in addition to the University's undergraduate requirement for an art history major (except for the second foreign language), and in combination with the undergraduate hours must satisfy the distribution requirement for art history.

Master of Arts in Art Education

The B.A. or B.F.A. in art equivalent to that offered at the University of Iowa; Teaching certification in art;

Completion of 25 semester hours of graduate credit, including 18 semester hours of studio and art history in a ratio of two to one (at least 12 semester hours of graduate credit in studio and 6 in art history, or 9 in studio and 12 in art history, 8 semester hours in graduate seminars in art education and 12 semester hours to be specified after the student completes the program; An oral and/or written examination in art education;

A written thesis based on research in art education or art history or a studio thesis, (a studio thesis must be accompanied by a brief statement of the student's technical, aesthetic, and/or psychological approach) and, as in the M.A. degree in studio, clearance for M.A. candidacy by faculty review.

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

Art education majors may elect to take art history courses on the satisfactory/unsatisfactory basis.

Master of Fine Arts (studio only)

The school offers the M.F.A. degree in a major in ceramics, design, drawing, metalworking and jewelry, multimedia and video art, painting, photography, printmaking, or sculpture.

The M.F.A. candidate must have an M.A. degree in art equivalent to that offered at the University of Iowa, and a minimum of 30 semester hours of graduate work, including at least 12 semester hours in a major studio subject, at least 6 semester hours in a minor studio field, 9 semester hours in art history and theory of art, and 8 semester hours in courses originating outside the school; clearance for M.F.A. candidacy by faculty review and an oral and written thesis. These credits earned in an M.A. program are not applicable toward the M.F.A. credit requirement.
Doctor of Philosophy
(art history only)
The Ph.D. student is expected to have a broad general knowledge of art history and to acquire detailed knowledge of monuments, an understanding of artistic development, and a knowledge of methods of research within certain specialized areas of world art to be selected by the student in conjunction with appropriate faculty members in the school.

No more than 36 semester hours of credit earned in an M.A. program may be applied toward the 72 semester hours required for the Ph.D.

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

Two art history seminars (with two different institutions) 4-6 s.h.
Additional art history courses 10-20 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 16 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.'s language requirement is as explained in the description of the M.A. in art history.

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 advisor and approved by the art history faculty. At least one minor field may be related to the major; this field may be in a discipline or disciplines outside the school, for example, religion, history, or philosophy.

The student must prepare a written dissertation consisting of 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. Each field must formally present the dissertation topic for faculty approval. The dissertation is subject to oral examination or the dissertation.

Graduate Admission: Studio
Admission procedures for graduate studio programs include a committee review of application materials, contact the school for more details.
Ceramics, design,针织 work, jewelry, multimedia or video art, or painting majors must submit slides and/or photographs of their work in their major field. Applicants who are in residence at the University must submit original work in these areas. Drawing majors must submit original drawings (newly finished drawings). Painting 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 slides. Color photographs are optional for all majors. In summer sessions, students may submit examples of their work in two or more 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 English.
Applicants in art education must submit both a term paper or other example of ability to write in English and a selection of slides or photographs of their creative work in two studio areas.
Art majors must submit three letters of recommendation. Deadline for receipt of completed applications for art history and art education applications is June 15 for the fall semester, November 15 for the spring semester, or April 15 for summer registration.

All applicants who do not register within two semesters of their admission must reapply. Students who attend for a limited time and then interrupt their studies for two or more years must reapply for admission.

Assistantships and Scholarships
Assistantships paying approximately $5,800 per academic year for 20 hours of departmental duties weekly are awarded to graduate students on a competitive basis. Half-time assistantships are also available. The award of an assistantship entitles the recipient to the in-state tuition rate. Scholarships paying partial or full tuition and enabling 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 60,000 volumes; a visual materials library containing 255,000 slides and 80,000 photographs; an impasto printer, furnaces and equipment for large-scale iron and bronze casting processes, as well as facilities for woodworking and fabrication of steel sculptures; a well-equipped darkroom; extensive kiln facilities, including provision for construction of various types of temporary and specialized kilns; a large shop for woodworking, metalworking, and industrial design; electroforming equipment; a papermaking mill; typographic studio; and video equipment.

Courses
Art History
Primarily for Undergraduates
101 Understanding the Visual Arts 3 s.h.
102 History of the Visual Arts 3 s.h.
103 Art and Architecture of the Latin American 3 s.h.
104 Art and Architecture of the Mediterranean World 3 s.h.
105 Industries of the World 3 s.h.
106 Introduction to Modern Art 3 s.h.
107 Introduction to Medieval Art 3 s.h.
108 Art and Architecture of the Renaissance 3 s.h.
109 Introduction to Modern Art 3 s.h.
110 Introduction to Medieval Art 3 s.h.
111 Art and Architecture of the Renaissance 3 s.h.
112 Art and Architecture of the Renaissance 3 s.h.
113 Art and Architecture of the Renaissance 3 s.h.
114 Art and Architecture of the Renaissance 3 s.h.
115 Art and Architecture of the Renaissance 3 s.h.
116 Art and Architecture of the Renaissance 3 s.h.
117 Art and Architecture of the Renaissance 3 s.h.
118 Art and Architecture of the Renaissance 3 s.h.
119 Art and Architecture of the Renaissance 3 s.h.
120 Art and Architecture of the Renaissance 3 s.h.
121 Art and Architecture of the Renaissance 3 s.h.
The Program in Asian Studies

This program is designed to introduce students to East and South Asian cultures, both modern and traditional, and to contemporary political and social problems in Asia. Courses are taught by Asian specialists in many departments. Students are encouraged to take courses in a number of disciplines and in more than one area of Asia.

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

32:10-11 Second Year Chinese 12 s.h.
or
32:10-11 Second Year Japanese 12 s.h.
or
32:20-24 Second Year Sanskrit 8 s.h.

At least one course on the history of the area whose language they are studying, chosen from:
32:133 History of Ancient and Traditional India 3 s.h.
32:154 Imperialism and Modern India 3 s.h.
32:153 Traditional China 3 s.h.
32:164 China: Opium War to Mao 3 s.h.
32:152 Premodern Japan 3 s.h.
32:154 Modern Japan 3 s.h.
32:193 Ancient and Modern China 3 s.h.

Other courses on Asia 100-level or above:
for those taking Chinese or
for those taking Sanskrit 18 s.h.

Many students find a Program in Asian Studies major is conveniently combined with a major in history, political science, art, religion, business, anthropology, or another discipline.

Students completing the major will satisfy the general education requirements in foreign civilization and culture, foreign language, and 3 semester hours of the requirement in historical perspectives.

Chinese, Japanese, or Sanskrit

This program is intended for students who wish to achieve an ability to speak, understand, read, and write Chinese or Japanese, or to "read" Sanskrit; and to gain knowledge of the literature of China, Japan, or South Asia.

Majors are required to complete advanced courses distributed as follows:

For students of Chinese:
32:10-11 Second Year Chinese 12 s.h.
32:105-106 Third Year Chinese 12 s.h.
32:141-142 Chinese Literature: Poetry and Prose 6 s.h.

For students of Japanese:
32:105-106 Third Year Japanese 12 s.h.
32:141-142 Japanese Poetry 3 s.h.
32:142 Japanese Fiction 3 s.h.

For students of Sanskrit:
32:23-24 Second Year Sanskrit 8 s.h.
32:186-187 Third Year Sanskrit 8 s.h.
32:186-187 Indian Literature 6 s.h.
32:183 Indian Religious Texts 5 s.h.

With the approval of the departmental advisor, students may substitute two of the following courses for Third Year Sanskrit:
32:123 History of Ancient and Traditional India 3 s.h.
32:154 Imperialism and Modern India 3 s.h.
32:168 Painting of India 3 s.h.
32:181 Art of India I 3 s.h.

Students are strongly urged to fulfill the general education requirement in historical perspectives by completing 11:50-56 Civilizations of Asia.

Students completing the major will satisfy the general education requirements in foreign civilizations and culture, foreign language, and 3 semester hours of the requirement in humanities.

Honors

Students with junior status who maintain a 3.5 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 32:191 Honors Tutorial and complete an acceptable thesis based on original research in an appropriate area of Asian studies.

Master of Asian Studies

Graduate study in Asian civilization is designed to prepare students for careers in high school teaching, government service, or commerce, in which a knowledge of an Asian language and culture would be helpful, as well as provide 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 must 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 completion of fourth-year modern and first-year dialectal 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 the completion 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 26 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 education 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 3.7 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, senior paper, or graduation thesis—to the Department of Asian Languages and Literature.

All applications for graduate awards for the following academic year are due March 15. Applications for admission without support will be accepted until July 15. For additional information contact the Graduate Admissions, Graduate College, 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 1960 the university library has increased the number of books on Asian languages, culture, and civilization. The library collection in the Chinese and Japanese languages is more than adequate for basic research; it includes approximately 38,000 books, periodicals, and microfilms. 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 a number of journals in Chinese and English.
Courses Undergraduate Language

35.115 Beginning Chinese for Graduate Students 4 h.
Introduction to Chinese for graduate students. Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.120 Chinese II 4 h.
Further oral and written Chinese. Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.2 First-Year Chinese 4 h.
Second section of Marburger's text with more emphasis on written language. Prerequisite: 35.2. Open to freshmen. Offered fall semester.

35.3 First-Year Chinese 4 h.
Third section of Marburger's text with more emphasis on written language. Prerequisite: 35.2. Open to freshmen. Offered spring semester.

35.5 Second-Year Chinese 4 h.
Concentrates on the modern spoken language for comprehension, with emphasis on vocabulary for reading and for written Chinese. Prerequisite: 35.2 or 35.3. Open to freshmen. Offered fall semester.

35.6 Second-Year Chinese 4 h.
Concentrates on the modern spoken language for comprehension, with emphasis on vocabulary for reading and for written Chinese. Prerequisite: 35.2 or 35.3. Open to freshmen. Offered spring semester.

35.7 Third-Year Chinese 4 h.
Prerequisite: 35.5 or 35.6. Open to freshmen.

35.8 Japanese I 4 h.
Introduction to the modern spoken language for comprehension, with emphasis on vocabulary for reading and for written Chinese. Prerequisite: 35.2 or 35.3. Open to freshmen. Offered fall semester.

35.9 Japanese II 4 h.
Continuation of 35.8 with more emphasis on written Chinese. Prerequisite: 35.9. Open to freshmen.

35.10 First-Year Japanese 4 h.
Introduction to the modern spoken language for comprehension, with emphasis on vocabulary for reading and for written Chinese. Prerequisite: 35.2 or 35.3. Open to freshmen. Offered fall semester.

35.11 First-Year Japanese 4 h.
Introduction to the modern spoken language for comprehension, with emphasis on vocabulary for reading and for written Chinese. Prerequisite: 35.2 or 35.3. Open to freshmen. Offered spring semester.

35.12 Second-Year Japanese 4 h.
Prerequisite: 35.10 or 35.11. Open to freshmen.

35.13 Beginning Japanese for Graduate Students 4 h.
Introduction to Japanese for graduate students. Prerequisite: 35.10 or 35.11. Open to freshmen. Offered fall semester.

35.14 Beginning Japanese for Graduate Students 4 h.
Introduction to Japanese for graduate students. Prerequisite: 35.10 or 35.11. Open to freshmen. Offered spring semester.

35.15 Advanced Japanese for Graduate Students 4 h.
Prerequisite: 35.10 or 35.11. Open to freshmen.

35.16 Basic Chinese 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.17 Beginning Japanese for Graduate Students 4 h.
Introduction to Japanese for graduate students. Prerequisite: 35.10 or 35.11. Open to freshmen. Offered fall semester.

35.18 Beginning Japanese for Graduate Students 4 h.
Introduction to Japanese for graduate students. Prerequisite: 35.10 or 35.11. Open to freshmen. Offered spring semester.

35.19 Chinese I 4 h.
Introduction to Chinese for graduate students. Prerequisite: 35.10 or 35.11. Open to freshmen. Offered fall semester.

35.20 Chinese II 4 h.
Introduction to Chinese for graduate students. Prerequisite: 35.10 or 35.11. Open to freshmen. Offered spring semester.

35.21 Chinese III 4 h.
Introduction to Chinese for graduate students. Prerequisite: 35.10 or 35.11. Open to freshmen.

35.22 Chinese IV 4 h.
Prerequisite: 35.12. Open to freshmen. Offered fall semester.

35.23 Comparative Study of American and Chinese Literature 2 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered fall semester.

35.24 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.25 Chinese II 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered fall semester.

35.26 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.27 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.28 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.29 Chinese III 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered fall semester.

35.30 Chinese IV 4 h.
Prerequisite: 35.12. Open to freshmen. Offered spring semester.

35.31 Comparative Study of American and Chinese Literature 2 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered fall semester.

35.32 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.33 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.34 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.35 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.36 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.37 Chinese III 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered fall semester.

35.38 Chinese IV 4 h.
Prerequisite: 35.12. Open to freshmen. Offered spring semester.

35.39 Comparative Study of American and Chinese Literature 2 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered fall semester.

35.40 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.41 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.42 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.43 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.44 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.45 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.46 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.47 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.48 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.49 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.50 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.51 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.52 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.53 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.54 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.55 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.56 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.57 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.

35.58 Chinese I 4 h.
Prerequisite: 35.119. Open to freshmen. Offered fall semester.

35.59 Chinese II 4 h.
Prerequisite: 35.119. Open to freshmen. Offered spring semester.

35.60 Advanced Chinese 4 h.
Prerequisite: 35.119 or 35.120. Open to freshmen. Offered spring semester.
Biochemistry

Bachelor of Science in Biochemistry

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:

- 32 units of biochemistry

Other biological area:
- 4 units of Chemistry I
- 4 units of Chemistry II
- 4 units of Chemistry Lab I
- 4 units of Chemistry Lab II
- 4 units of Chemistry Laboratory

Bachelor of Arts in Biochemistry

In addition to the College of Liberal Arts general education requirements, the Bachelor of Arts degree in biochemistry requires:

- 32 units of biochemistry

Other biological area:
- 4 units of Chemistry I
- 4 units of Chemistry II
- 4 units of Chemistry Lab I
- 4 units of Chemistry Laboratory

Other Combined Programs

It is possible, especially in the B.A. program, to include special courses in various disciplines, such as pre-law, pre-medical, or pre-journalism, permitting individualization of the curriculum as preparation for one of the growing number of vocations in which biochemistry is having an impact.

Graduate Programs

Biochemistry graduate programs and facilities, courses, and the faculty roster and course offerings are described in the Catalog for the description of the department's graduate programs and facilities, and for the faculty roster and course offerings.
Biology

Coordinator: Eugene Special
Degrees Offered: B.A., B.S.
The major in biology is designed to further students' understanding and appreciation of living organisms, and to prepare students for careers in which a detailed understanding of aspects of organisms is essential.

These careers include teaching, laboratory and field research, clinical work, counseling, and administration in agricultural, environmental, and health sciences as well as numerous specialized and interdisciplinary 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 requires certification). It also prepares the student for entry into graduate or professional school in areas of biological science, medicine and other health professions, agriculture, environmental 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.

Undergraduate Program

The biology major is jointly administered and taught by the departments of Botany and Zoology.

The basic courses emphasize processes which are or are common to living systems, at molecular, cellular, organic, and population levels.

Later, through appropriate selection of elective courses, students may follow their own interests in controlling in such areas as genetics, development, physiology, ecology, microbial biology, or courses which emphasize plant or animal systems.

Students interested primarily in field biology have ample opportunity for this emphasis through the program in ecology and evolutionary biology, and the program use of the Madrille Field Campus.

Also, a variety of courses is offered during the summer at the Lake Lab in Lake Okoboji.

The science requirements are identical for the major and Bachelor of Science degree with a major in biology. They total 34 semester hours, as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:1 Introduction to Botany</td>
<td>4 h.</td>
</tr>
<tr>
<td>37:3 Principles of Animal Biology</td>
<td>3 h.</td>
</tr>
<tr>
<td>2:128 Fundamental Genetics</td>
<td>3 h.</td>
</tr>
<tr>
<td>37:128 Fundamental Genetics</td>
<td>3 h.</td>
</tr>
<tr>
<td>2:128 Fundamental Genetics Laboratory</td>
<td>2 h.</td>
</tr>
<tr>
<td>37:129 Fundamental Genetics Laboratory</td>
<td>2 h.</td>
</tr>
<tr>
<td>2:131 Evolution</td>
<td>4 h.</td>
</tr>
<tr>
<td>37:131 Evolution</td>
<td>4 h.</td>
</tr>
<tr>
<td>37:100 Cell Physiology</td>
<td>4 h.</td>
</tr>
<tr>
<td>37:125 A Plant in Crisis</td>
<td>3 h.</td>
</tr>
<tr>
<td>37:144 Microbiology</td>
<td>3 h.</td>
</tr>
<tr>
<td>37:195 Introduction to Research</td>
<td>3 h.</td>
</tr>
</tbody>
</table>

The twelve elective hours must be in courses numbered 100 or above, excluding 37:125 A Plant in Crisis, 37:144 Microbiology, and 37:195 Introduction to Research. Students may substitute up to 4 semester hours of advanced courses in physical sciences (physics, chemistry, or geology) courses numbered 100 or above that carry elementary course prerequisites and are directed at science students or in mathematics (any course that requires first-semester calculus as a prerequisite). Such substitutions may not include any of the "requirements in other disciplines" listed below.

Requirements for the major in biology also include these courses in other disciplines:

4:15-14 Principles of Chemistry I 6 h.
4:18 Principles of Chemistry I 6 h.
4:121 Organic Chemistry I 3 h.
96:120 The Chemistry of Biological Materials 3 h.
28:11-12 College Physics or Physics I 8 h.
28:17-18 Introductory Physics I 8 h.
22:35:26 Calculus I 4 h.
22:35:26 Calculus I 4 h.
22:35:26 Calculus I 4 h.
5W:10 Expository Writing 3 h.

Biology students planning to apply for admission to the University of Iowa College of Medicine must take a chemistry course in organic chemistry, with laboratory. This requirement may be satisfied by taking 4:121 Organic Chemistry I and 4:123 Organic Chemistry II plus 4:141 Intermediate Chemistry Laboratory I or by taking 4:151 and 96:120 The Chemistry of Biological Materials plus 96:140 Intermediate Biochemistry.

Biology students planning to teach in high schools should consult with advisors in the College of Education concerning psychology, education, and American government 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, and/or geology (paleontology) courses taken at The University of Iowa and including at least 12 semester hours in 100-level courses, excluding those designated primarily for non-science 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

The Honors Program in biology gives the superior student membership in a small, active group of undergraduates with common interests, and association with one of the departments' research groups. It introduces the student to the pursuits of practicing scientists— research, discussions of current research, work on specialized topics, attendance at research lectures.

Students in the College of Liberal Arts Honors Program may earn an honors degree in biology by completing at least 6 semester hours of work in the departments of Botany and/or Zoology, including at least 2 semester hours in 2:195 Honors Laboratory Research or 37:195 Honors Laboratory Research at least 2 semester hours in 2:197 Honors Readings in Botany or 37:197 Honors Readings in Zoology, and at least 1 semester hour in 37:50 Honors Topics in Zoology or a graduate-level seminar. An honors aridamist in biology must have at least a 3.2 grade-point average overall and at least a 3.3 average in the biological sciences. The research approved by the research supervisor is required.

Graduate Programs

The departments of Botany and Zoology offer a Master of Science degree program in biology; for descriptions, see "Botany" and "Zoology" in this section of the Catalog.
Botany

Department Chair: Jeff T. Schellens

Botany is a science contributing to our understanding of plants, their significance in the earth's biosphere, their structure, function, reproduction, diversity, evolution, ecology, 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:

211 Introduction to Botany 4 s.h.
273 Principles of Animal Biology 5 s.h.
2128 Fundamental Genetics 3 s.h.
A maximum of one course from each of the following five areas (17-20 s.h.):

Structural Botany
2113 Animal and Plant Anatomy 4 s.h.

Physiology and Cell Biology
2109 Plant Physiology 4 s.h.
2110 Plant Physiology 4 s.h.
2114 Cellular Plant Physiology 3 s.h.
2126 Phytochemistry 3 s.h.
2160 Plant Physiology 4 s.h.
2175 Plant Physiology 4 s.h.

Vascular Plant Diversity
2111 Plant Diversity 4 s.h.
2123 Biology of Local Flora 4 s.h.
2151 Plant Taxonomy 4 s.h.
2151 Field Botany 3 s.h.
2120 Paleobotany 4 s.h.
2120 Plant Taxonomy 5 s.h.

Ecology and Evolution
2111 Plant Ecology 4 s.h.
2116 Field Ecology 4 s.h.
2151 Evolution 4 s.h.
2152 Ecology 4 s.h.

Biological of Non-Vascular Plants
2106 Physiology 4 s.h.
2106 Bryology 4 s.h.
2107 Mycology 4 s.h.

One level course in Botany or a related science.

Chemistry
413 Principles of Chemistry I 3 s.h.
414 Principles of Chemistry II 3 s.h.
418 Principles of Chemistry Lab I 2 s.h.
4121 Organic Chemistry I 3 s.h.
4122 Organic Chemistry II or 59120 Chemistry of Biological Materials 3 s.h.

Mathematics
22M-2 Mathematics
Techniques II 3 s.h.
22M-15 Mathematics for the Biological Sciences 3 s.h.
22M-20 Fundamental Functions 3 s.h.
22M-15 Calculus I 4 s.h.

Students preparing to teach in secondary schools should consult the "College of Education" section in the Catalog regarding requirements for teacher certification.

Honors
An undergraduate program leading to graduation with honors provides opportunities for participation in independent research projects guided by professional staff members. In addition to the regular requirements for the B.A. degree, honors students must complete at least 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 may now have this alternative available to them. See "Biology" in this section of the Catalog.

Graduate Programs

An advanced degree enhances career opportunities in botany. The department offers advanced degree work in many subdisciplines. Graduate training frequently involves interdisciplinary study, and in some fields, such as genetics and ecology, it requires some coursework in cognate departments. Each graduate student is therefore assigned a faculty guidance committee to help him or her set educational goals and plan the course requirements necessary to meet them.

Master of Science in Botany

The department offers the degree with emphasis in anatomy, bryology, cell biology, ecology, genetics, development and morphogenesis, mycology, paleobotany, physiology, physiology, plant biochemistry, or taxonomy. The degree requires at least 30 semester hours of graduate study, including 6 semester hours in 22M-20 Research in Botany. Preparation of a thesis is optional.

Each student must:

Submit a program of study to be approved by a graduate committee composed of members of the graduate faculty of the department from which the student may be recommended for the degree of master of science in biology.

No more than six semester hours of 22M-25 Research Botany and 22M-25 Theses Botany may be included. Achieve a grade-point average of 3.0 on all courses—other than Research—attempted up to the time of the final examination.

Take a written examination during the term in which he or she is to graduate. This is followed within a week by an oral examination. These examinations cover the courses and research experience the student has had up to this point.

Master of Science in Biology

A student who has been regularly admitted to the College of Arts and Sciences, 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 36 semester hours of graduate study without thesis, or 30 semester hours of thesis. Candidacy for the degree without thesis must earn 4-5 semester hours of credit in research. Candidates for the degree with thesis must complete at least 6 semester hours of credit in research. Students can earn research credit only during the fall and spring semesters. The program must include at least 8 semester hours of graduate courses in each of the two departments, exclusive of research, and may include 6-15 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 in 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 same as those 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 graduate committee;

Take a qualifying comprehensive examination, at a time agreed to with the graduate committee, testing the student’s progress in understanding concepts and ideas in various divisions of botany, with some concentration 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 Council. Applicants should submit (Graduate Record Examination) GRE Aptitude Test scores with their applications.

If the evening 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. Such courses prescribed by the student’s guidance committee should be made up during the first year of graduate study; 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:

Scores on the GRE verbal and quantitative tests adding up to at least 1100;

A transcript of undergraduate record showing a grade-point average of at least 3.0 on all courses attempted equal to S.O. and Letters of recommendation from at least three of their professors.

Students entering with an M.S. degree should:

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 of academic achievement coupled with a GRE composition score of 350 may be adequate for a Ph.D. student who demonstrates a commitment to the study of a particular area of research.

Special Facilities and Activities

There is an excellent departmental library in the Chemistry-Botany Building. The Botany Department is a major user of the building.

Students conducting research projects requiring the cultivation of plants have access to greenhouses and special plant culture rooms. The departmental greenhouse is located on the campus in the north area of the university. A number of research laboratories are equipped with standard and modern equipment for research in the biological sciences.

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requirements in chemistry. These are the major requirements for the B.A.
degree.

4.15-14 Principles of Chemistry 1 & 2
4.15 Principles of Chemistry Lab 1 & 2
4.17 Basic Measurement
4.20 Organic Chemistry 1 & 2
4.111-12 Analytical Chemistry 1 & 2
4.121-12 Analytical Chemistry Lab 1 & 2
4.141 Intermediate Chemistry Laboratory
4.142 Advanced Chemistry Laboratory I

Interdisciplinary Programs

The Department of Chemistry offers 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.

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 3.5. Most of the graduate students who are admitted receive financial support, and application forms may be obtained by writing to the Department of Chemistry. Most departments will make offers and accept applications for the following academic year as early as February 1, but there are occasional openings at the beginning of the next academic year.

Facilities

The department is housed in a five-story building containing two auditoriums, 8 lecture rooms, 15 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 a large number of current scientific journals.

Courses

Primarily for Undergraduates

Students planning to take more than one year of chemistry should take 1.13, 4.14, and 4.15. Students requiring only one year of chemistry may take 4.7, 4.8, and 4.9.

4.000 Cooperative Education Internship

4.7 General Chemistry

Introduction to basic concepts of chemistry for students who do not plan to take more than one year of chemistry.

4.8 General Chemistry

Introduction to basic concepts of chemistry for students who do not plan to take more advanced courses in chemistry. Prerequisite: 4.7 in high school chemistry.

4.9 General Chemistry Laboratory

Introduction to laboratory techniques for students taking 4.8. Prerequisite: or corequisite: 4.8.

4.12 Principles of Chemistry

Introduction to basic principles of chemical bonding and chemical reactions. Prerequisite: 4.9 in high school chemistry.

4.13 Principles of Chemistry Lab

Introduction to laboratory techniques for students taking 4.12. Prerequisite: 4.12.

4.17 Inorganic Chemistry

An introduction to inorganic chemistry and methods of inorganic analysis. Prerequisites: 4.12 and 4.18.

4.20 Organic Chemistry


4.31 Physical Chemistry 1

An introduction to physical chemistry and methods of physical analysis. Prerequisite: 4.12 and 4.18.

4.32 Physical Chemistry 2

An introduction to physical chemistry and methods of physical analysis. Prerequisite: 4.12 and 4.18.

4.33 Physical Chemistry 3

An introduction to physical chemistry and methods of physical analysis. Prerequisite: 4.12 and 4.18.

4.34 Physical Chemistry for Life Sciences

Principles and applications of thermodynamics, transport phenomena, diffusion, and the chemical properties of enzymes. Prerequisites: 4.12 and one semester of calculus.

4.35 Physical Chemistry for Life Sciences and Medicine

Principles and applications of thermodynamics, transport phenomena, diffusion, and the chemical properties of enzymes. Prerequisites: 4.12 and one semester of calculus.

4.36 Physical Chemistry 1

An introduction to physical chemistry and methods of physical analysis. Prerequisites: 4.12 and 4.18, and one semester of calculus.

4.37 Physical Chemistry 2

An introduction to physical chemistry and methods of physical analysis. Prerequisites: 4.12 and 4.18, and one semester of calculus.

4.38 Introduction to Quantum Chemistry

Quantum mechanics and theoretical chemistry. Prerequisite: 4.39.

4.39 Introduction to Quantum Chemistry

Quantum mechanics and theoretical chemistry. Prerequisite: 4.38.
transmitted the culture of Greece to the
West.
The candidate for a B.A. degree with a major in Latin must earn a minimum of 30 semester hours of major credit, of which at least 24 semester hours must be in Latin language courses. These courses, or their equivalents, are required:
14:21 Etruscan Greek
6 s.h.
14:11-12 Second-Year Greek
6 s.h.
14:20-21 Latin
6 s.h.
14:21-22 Homer and Herodotus
6 s.h.
14:28: Age of Ciceron
3 s.h.
14:27: Age of Augustus
3 s.h.
14:17: Elementary Greek Composition
3 s.h.
20:17: Elementary Latin Composition
3 s.h.
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 20:15 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 both. The candidate must earn a minimum of 30 semester hours of major credit in courses numbered 101 and above. Normally, students in the Latin program who have had no Greek are also expected to include at least elementary Greek in their programs.
Doctor of Philosophy
The department offers the doctoral degree in classics. The candidate must meet these requirements:
Ability to read and write Greek and Latin, as tested in qualifying examinations
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 comprehensive examinations or ancient history, ancient Greek, Latin literature, and a special field or author, together with a one-hour oral final examination
Writing and defending a dissertation embodying original research or interpretation of a classical subject
Required courses are:
14:20-204-205 Rapid Readings in Greek
6 s.h.
20:204-205 Rapid Readings in Latin
6 s.h.
14:172 Advanced Greek Composition
3 s.h.
20:172 Advanced Latin Composition
3 s.h.
Ancient art above 200 level
3 s.h.
20:286 Sartori I
3 s.h.
14:203 Intro-European Philology
3 s.h.
14:208 Greek Paleography
3 s.h.
14:281-282 Greek Seminar
6 s.h.
20:281-282 Latin Seminar
6 s.h.
May be satisfactory by examination. One of the seminars normally is taken after comprehensive examinations.
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 library has a varied 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 fa~sicles from bronze and iron.
The University is a supporting institution of the American School of Classical Studies at Athens, the American Academy in Rome, and the Vergilian Society thereby making their facilities available to its faculty and graduates.
Courses
Greek
For Undergraduates Only
161 Elementary Greek
4 s.h.
Fundamentals of New-Testament Greek and basic concepts of Greek civilization
162 Elementary Greek
4 s.h.
Selections from Greek authors. Continuation of 151, which is prerequisite.
165 New Testament Greek
3 s.h.
Study of the New Testament Greek, practical knowledge of Greek to be expected, in translation with any other foreign languages. Offered summer session.
14.01 New Testament in Greek
Required reading for seniors. Students may be excused with the permission of the instructor.
14.01 First Year Greek
Reading of selected texts of Greek prose and poetry.
14.01 Second Year Greek
Combination of 14.01, which is prerequisite.

For Undergraduates and Graduates
14.021 Hier and Needell
For third-year Greek students; selections from Homer's Iliad and Odyssey and from Herodotus' Histories. Placement by interview. Grades are S, N, or CR/D.
14.022 Hier and Needell
Continuation of 14.021, which is prerequisite.
14.031 Classical Literature
Study of Greek and Roman literature from an historical point of view. No prerequisites.
14.033 Latin Literature
Survey of Latin literature, from its beginnings to the time of Paul the Apostle. No prerequisites.
14.035 Latin Grammar
Study of Latin grammar. No prerequisites.
14.036 Latin Literature
Continuation of 14.035, which is prerequisite.
14.037 Latin Grammar
Study of Latin grammar. No prerequisites.
14.038 Latin Literature
Continuation of 14.037, which is prerequisite.

For Latin
14.039 Latin Literature
Introduction to Latin literature and syntax; readings in Latin. No prerequisites.
14.233 Latin Grammar
Study of Latin grammar. No prerequisites.
14.235 Latin Literature
For students who have had high school Latin, no further course requirements to enter the major in Latin; placement by interview. Grades are S, N, or CR/D.
14.237 Latin Grammar
Study of Latin grammar. No prerequisites.
14.238 Latin Literature
Continuation of 14.237, which is prerequisite.
14.239 Latin Literature
Continuation of 14.238, which is prerequisite. Must be in Latin.
14.241 Latin Literature
Readings in Latin prose and poetry. Prerequisites: 14.232 or 14.235, or two years of high school Latin.
14.243 Latin Literature
Preparation for 20.01 or equivalent. Must be in Latin.
14.245 Latin Literature
Preparation for 20.11 or equivalent. Must be in Latin.
14.247 Latin Literature
Preparation for 20.12 or equivalent. Must be in Latin.
14.249 Latin Literature
Preparation for 20.13 or equivalent. Must be in Latin.
14.250 Latin Literature
Preparation for 20.13 or equivalent. Must be in Latin.

For Graduates and \n14.251 Latin Literature
Preparation for 20.14 or equivalent. Must be in Latin.
14.253 Latin Literature
Preparation for 20.14 or equivalent. Must be in Latin.
14.255 Latin Literature
Preparation for 20.15 or equivalent. Must be in Latin.

For Latin
14.257 Latin Literature
Readings in Latin prose and poetry. Prerequisites: 14.241 or 14.243, or high school Latin.
14.259 Latin Literature
Readings in Latin prose and poetry. Prerequisites: 14.241 or 14.243, or high school Latin.
14.242 Latin Literature
Readings in Latin literature and syntax; readings in Latin. No prerequisites.
14.244 Latin Grammar
Study of Latin grammar. No prerequisites.
14.246 Latin Literature
Study of Greek and Roman literature from an historical point of view. No prerequisites.
14.248 Latin Literature
Study of Greek and Roman literature from an historical point of view. No prerequisites.
14.249 Latin Literature
Readings and critical study emphasizing Herodotus' intellectual background and the aims of his history.
14.250 Herodotus Poetry
Study of Herodotus' intellectual background and the aims of his history.
14.251 Herodotus Poetry
Study of Herodotus' intellectual background and the aims of his history.
14.252 Herodotus Poetry
Study of Herodotus' intellectual background and the aims of his history.

For Classics in English
All readings for these courses are in English.

14.31 Classical World
Study of ancient civilizations, from the Neolithic to the fall of Rome. Must be in Latin. Prerequisites: 14.035 and 14.105, or 14.035 and 14.102, or 14.037 and 14.102.
14.32 Classical World
14.33 Classical World
14.34 Classical World
14.35 Classical World
Continuation of 14.34. Prerequisites: 14.035 and 14.105, or 14.035 and 14.102, or 14.037 and 14.102.
14.36 Classical World
14.37 Classical World
14.38 Classical World
14.39 Classical World
14.40 Classical World
Communication and Theatre Arts

Department chair: John W. Sowers
Faculty professors: J. Daniel Cokely, Samuel L. Berens, Jon W. Sowers, Coma Colaitis, Lewis Giff, Bruce C. Grobak, Robert Hallet, Robert D. MeCCoo, Franklin Miller, Donna J. Ochse, David Steele, David Tower

professors emeriti: Donald G. Bryan, Hugh C. Ondler, Arnold Olness, R. Day Keilharung, Odoll Hishida, Hugh P. Beatty, John Wilcox

associate professors: Charles P. Kramer, Nancy L. Cooper, George Higbee, John Luchs, Michael Cedric Siciliano, Judith Milibao.

professors: Robert Neely, Wendell Pepper, Douglas Young.

assistant professors: John Burke, Ann Chancellor, Robert Hay, Samuel Latm, Charlotte Macfie, Howard Mark, Ellen Meehan, Paul Tradl

instructor: Kari Sundahl

Adjunct Faculty: Jennifer Martin, James Wunderman

Degrees offered: B.A., M.A., M.F.A., S.G.S., M.A.T., Ph.D.

The Department of Communication and Theatre Arts is concerned with communication as a means of personal expression and development, with communication as the major means by which people adjust themselves to their society and their society to themselves; with communication as the essential process for the operation of any society, especially the highly technological society; and with artistic as well as functional communication. These concerns with communication are manifested in two ways: faculty attempts and attempts of the department's students to better understand communication processes, and to improve abilities to communicate effectively, whether as actors or directors, community leaders, supervisors, participants in a group, filmmakers, broadcasters, designers, playwrights, teachers, spouses, or parents.

The department has six major divisions, whose emphases and distinctive courses are developed under the headings "Communication," "Communication Education," "Theatre Arts," "Rhetorical Studies," "Communication Research," and "Broadcasting and Film."

General Departmental Degree Requirements

Bachelor of Arts

Regardess 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 two courses outside the division of concentration;

A minimum of eight semester hours of production/performance courses; and

A minimum of eight semester hours of nonproduction/research/conference 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.

Departmental requirements for the Master of Arts degree are:

A minimum of 30 semester hours, including 360 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; and

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 session is February 1 preceding, for maximum probability of admission. The minimum cumulative undergraduate grade-point average required for admission in good standing is 2.8.

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 360 introduction to Research; a course in the teaching of communication as approved seminar; and at least 19 semester hours completed in the College of Education beyond the basic education 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 gained upon the student and his or her graduate committee; and

Successful completion of such additional work as may be specified by the departmental division in which the student's work is concentrated.
Courses

3C/3C3 Principles of Speech Communication 2.5 h.
Socrates speech topics of College of Liberal Arts prepare material interest. Studies in various students who have heard or are taking 10-19-123, 10-3, 3C/3C3, or equivalent.

3C/3C Communication in Public 2 h.
Interpersonal courses in public speaking, presenting previous course work 10-19-123, 10-2, 3C/3C3, or equivalents or exercise in public processes. Students in various public groups and publics develop speaking, analyzing, and evaluating speaking habits and strategies for public speech and criticism. Focus on the public role in business and the professions.

3C/3C Communication 2.5 h.
Principles and practice of group problem-solving techniques; leadership and group participation; public role in social media and action.

3C/3C3 Interpersonal Communication 2 h.
Readings, exercises, and projects in small and class groups. Emphasis on critical thinking and application of personal perception, interpersonal interactions, messages, messages, feedback, and situations.

3C/3C Communication in Business 1.5 h.
Studies in the theory of interorganizational debate.

3C/3C3 Science and Technology 1.5 h.
Practice in innovative and persuasive speaking, based on current public issues.

3C/3C Business and Professional Speaking 2 h.
Techniques and strategies for public communication in business, education, and other professions; theory and guided practice.

3C/3C Elements of Debate 2 h.
Practices with those in interest in debate and debate procedures and those who teach a debater unit or discussion this interorganizational debate.

3C/3C Communication Theory in Everyday Life 2 h.
Examination of several noteworthy communication theories and applications of these theories in the social world and political problems. Same as 10-19-123.

3C/3C Relevance to Persuasion 2 h.
Examination of persuasion as manipulative communication, utilized in radio, television, newspapers, magazines, and in direct communication for commercials.

3C/3C Communication and Ethics 1.5 h.
Roles of order for members of committees, states, and other organizations in the improvement of political and debating moves from fear and in providing over political reasoning.

3C/3C Organizational Leadership 3.5 h.
Focus on leadership functions in various organizations: focus on communication methods, manipulation, and administration of committees. Leadership and administrative policies in contemporary organizations.

3C/3C Communication and Contemporary Culture 3 h.
Review of the social cultural issues which govern contemporary communication practices; methods for evaluating settings of discourse; communication media in contemporary general, government, and political media, and content. Same as 10-19-123.

3C/3C Native and Political 2 h.
An analysis of the methods of political communication, emphasis on political communication and representation of the media. Introduction to media research in political campaigns.

3C/3C Interpersonal Communication 2 h.
Application of communication skills and knowledge in an assignment related to the student's academic and career interest. May be for or in the department. Student must complete an Individual Course registration with 100-19-123.

3C/3C Themes of News Communication 3 h.
Simplicity and rhetoric in approaches to the study of symbolic interaction as an extension of such topics as Plato, Aristotle, Augustine, Hobbes, Locke, Hobbes, and other theorists. In the case of news communication and the professions.

3C/3C Interpersonal Communication 2 h.
Introduction to relationships among culture-based values, axioms, and theories. Comparison of theories which overlap with theory and practice. Same as 42111.

3C/3C Theory and Practice of Persuasion 2 h.
Analysis of public argument as practiced in law, social sciences, politics, and other public arenas, and instruction in the prescientific and oral arguments. Recommended for prospective business, law, public, political, advertising, and other interested in communication.

3C/3C Theories of Propaganda 2 h.
Theories of propaganda, techniques, and practice of influencing public opinions in business, education, and the professions.

3C/3C Community and Conflict 2 h.
Conflict in communication and resolving. Conflict in society and the professions. Conflict in communication and solving.

3C/3C Communication Theory and Practice of Organizational 3 h.
Theories and practice of communication in business, education, and other organizations. Theories of organized and large groups.

3C/3C Communication and Law 2 h.
Analysis of communication and legal processes. Communication techniques and processes, media, and ethical issues in political, legal, and social systems. Application of methods for reasoning.

3C/3C Communication and Ethics 1.5 h.
Roles of order for members of committees, states, and other organizations in the improvement of political and debating moves from fear and in providing over political reasoning.

3C/3C3 Research Communication 2.5 h.
Analysis of communication and legal processes. Communication techniques and processes, media, and ethical issues in political, legal, and social systems. Application of methods for reasoning.

3C/3C Communication and Law 2 h.
Analysis of communication and legal processes. Communication techniques and processes, media, and ethical issues in political, legal, and social systems. Application of methods for reasoning.

Communication Research

Degrees 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 for and experience in research on interpersonal communication, group communication, and/or the mass media. Candidates are expected to take 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, doctoral students in this program must complete the statistics sequence in the Department of Psychology or in the College of Education, and take 26:2025 Philosophy of the Human Sciences in the Department of Philosophy. Work in advanced statistics and computer sciences may be used to fulfill the research tool requirements of this department.

Opportunities for varied research in areas related to that required for dissertation projects are available. Several original studies in preparation for dissertation and later research are expected of doctoral candidates.

Courses

3C/3C Contemporary Communication Theory 2 h.
Processes open twentieth-century theories and studies of thought, emphasizing emotional processes, and interpersonal relationships. Same as 42121.

3C/3C Group Communication I 2 h.
Basic group research and theory. Same as 42121.

3C/3C Research Methods in Communication 2 h.
Principles of research design and designing experimental research in communication. Same as 42121.

3C/3C Communication and Social 2 h.
Research and analysis of communication research. Same as 42121.

3C/3C Communication and Social 2 h.
Research and analysis of communication research. Same as 42121.

Doctor of Philosophy

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 the 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. Many Ph.D. candidates also do extensive work in "Communication Research" and "Broadcasting and Film" to improve their range of teaching opportunities and their research skills.

For basic requirements, see the initial sections of this department's description. Teaching and research assistantships are available; evaluation of these applications begins February 15 each year.

Courses

391:314 Greek and Roman Public Address
391:414 Historical and critical study of public and written communication from the fifth century B.C. to the early Christian era; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:315 British Public Address
391:415 Historical and critical study of public and written communication from the fourth century A.D. to the Middle Ages; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:316 Renaissance Public Address
391:416 Historical and critical study of public and written communication from the early sixteenth to the late eighteenth centuries; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:317 Romantic and Victorian Public Address
391:417 Historical and critical study of public and written communication from the early nineteenth to the late nineteenth centuries; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:318 Modern and Contemporary Public Address
391:418 Historical and critical study of public and written communication from the early twentieth to the late twentieth centuries; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:319 Contemporary Public Address
391:419 Historical and critical study of public and written communication from the early twenty-first century to the present; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.

Rhetorical Studies

Professor in charge: Bruce S. Brannon
Degrees offered: M.A., Ph.D.

The program in rhetorical studies leads either to the M.A. or the Ph.D. degree. It is built upon foundation courses in the history of rhetorical practices, the criticism of rhetorical discourse, and the relationships between rhetorical activities and other dimensions of society. Some foundation courses in History and criticism are offered in the Classics department and are listed under "Communication" (above); the others begin in the 500-level. More specialized courses (500-level and seminar) (900-level) allow students to develop particular expertise in various approaches to rhetoric and communication.

Master of Arts

The stress of the M.A. program in rhetorical studies is upon basic knowledge of rhetorical history, criticism, and theory. That goal normally is met in the following foundation courses and in other parts of the department and the 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:

300:100 Introduction to Rhetoric
At least 12 hours in courses in rhetorical studies, including a seminar; At least 8 hours of courses in other departments of the school and in the College of Liberal Arts; and A comprehensive examination across three areas of study determined by students and their committees.

391:314 Greek and Roman Public Address
391:414 Historical and critical study of public and written communication from the fifth century B.C. to the early Christian era; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:315 British Public Address
391:415 Historical and critical study of public and written communication from the fourth century A.D. to the Middle Ages; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:316 Renaissance Public Address
391:416 Historical and critical study of public and written communication from the early sixteenth to the late eighteenth centuries; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:317 Romantic and Victorian Public Address
391:417 Historical and critical study of public and written communication from the early nineteenth to the late nineteenth centuries; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:318 Modern and Contemporary Public Address
391:418 Historical and critical study of public and written communication from the early twentieth to the late twentieth centuries; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.
391:319 Contemporary Public Address
391:419 Historical and critical study of public and written communication from the early twenty-first century to the present; study of oratory, rhetoric, and social consequences in the development of ideas and social life; the influence of oratory on modern political rhetoric.

Broadcasting and Film

Professor in charge: Duane Andrew, Frank J. Miller, Robert Pepper
Degrees offered: B.A., M.A., Ph.D.

Bachelor of Arts

This program is intended for students interested in mass communications as the focus of a general liberal arts education or in broadcasting or film careers. The program requires that anyone pursuing a career in film or broadcasting 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 media totally apart from the experience and knowledge of students choosing this field.

Students emphasizing production will learn how to write, plan, shoot or record, edit, and present film, radio, and television programs. In addition, they will obtain a background in the history of the media so that they understand the relationship of the industry's present state. A grounding in media theory and criticism teaches the student to differentiate between good and mediocre programming, to appreciate what goes into both successful and unsuccessful 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 aesthetics, sociology, 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.

Required for a major in the division include 390:25 Introduction to Broadcasting and Film Production, a minimum of 61 semester hours of advanced production, a minimum of 9 semester hours of core-production courses (of which at least 8 must be 100-level courses or above), and two
courses from other divisions of the department. A total of 24 hours is required.

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 concentrate 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.

Facilities

The broadcasting and film division is housed in the University’s Television Center. The center houses fine broadcasting and film production facilities devoted exclusively to instruction. A large television studio and sound stage is equipped with modern television equipment, including color cameras. Students have the opportunity to use a variety of types and video and audio recording equipment in both studio and on-studio production settings, along with video as well as audio editing facilities.

The University’s two radio stations, WSUI (AM) and KUIU (FM), offer facilities for radio production classes and independent study. A large pool of film equipment is also available for students in broadcasting and film courses. Film students can gain experience with a variety of cameras, sound and lighting equipment, editing equipment (including editing editing machines), and all film courses except the specialty ones are taught with 16mm equipment.

The University Library contains an extensive collection of film and broadcasting materials.

Courses

300-393 Main Media and Mass Society 3 h.
Introduction to the history and theory of the mass media of communication, with emphasis on radio, television, and the motion picture. Same as 310 and 410.

300-111 Introduction to Film and Broadcasting for Students with the 3 h.
purpose of experience, the course is project oriented. Students will work in short films, and audio production classes.

300-112 Broadcast & Electronic Media 3 h.
Principles and effectiveness of communication, broadcast and electronic media. Same as 608.

300-113 Introduction to Film Analysis 3 h.
Screen analysis and aesthetic criteria of films, with emphasis on “classic” narratives works from the American and European traditions, method studied include shot-by-shot breakdown, narrative segmentation, author and genre. Same as 609.

300-114 American Broadcasting 3 h.
History, audiences, regulation, economics, and programming of the electronic media in the United States.

300-115 Survey of Film 3 h.
Introduction to major picture history, theory, and criticism, including study of relationships to other arts and the screen industries.

300-421 Film and Society 3 h.
The role of the motion picture in contemporary society, consideration of issues of ownership and control of visual culture.

300-116 Relationship of sports and broadcasting, spring 3 h.
Production and exhibition, financial status of both and national levels.

300-117 Special seminar on 300-35 for graduate students. The need for the arts.

300-118 Survey of Film 3 h.
Special seminar on 300-41 for graduate students. The role of the media in shaping social, cultural, and political values, with special reference to the screen industries.

300-119 Radio Production 3 h.
Principles and practices of contemporary radio production and programming. Same as 508.

300-120 Radio Workshop 3 h.
Independent creative work of students who have completed the specialized radio content in 300-120. Prerequisite: Consent of instructor.

300-121 American Broadcasting 3 h.
Preparation and practice of instruction in the art and science of radio.

300-122 Television Production: Basic Techniques 3 h.
Emphasis on the studio as a live production facility. Production techniques for television as an independent medium.

300-123 Communications and Media Studies 3 h.
Design of selected media on shows, courses, and reception of messages. Media scratches; media selection strategies; strategies used in public service announcements and educational programs. Same as 708.

300-124 Television Production: Studio Techniques 3 h.
Emphasis on the studio as a live production facility. Production techniques for television as an independent medium.

300-125 Television Production: Special Topics 3 h.
Television production: a specialty course chosen from the following: television production, the commercial television: the longer-form documentary film, the national and international television: the independent documentary film.

300-126 Television Production: Specific Formats 3 h.
Directing the single- and multiple-episode dramatic production.

300-127 Broadcasting and Special Topics 3 h.
Special seminar on 300-120 for graduate students. The need for the arts.

300-128 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-129 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-130 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-131 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-132 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-133 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-134 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-135 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-136 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-137 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-138 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-139 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-140 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-141 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-142 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-143 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-144 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-145 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-146 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-147 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-148 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-149 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-150 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-151 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-152 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-153 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.

300-154 Film Production: Film and Media 3 h.
Occasionally to fulfill program requirements. Emphasis on visual art, commercial production, and basic film production. Same as 508.
Communication and Theatre Arts/LIBERAL ARTS

Communication

300:111 Fundamentals of Public Speaking 3 s.h.
Study of public speaking in general, including planning, organization, delivery, and evaluation.

300:131 Laboratory Methods in Communication Research 3 s.h.
Practical experience in the design and conduct of experiments.

300:151 Film Theory 3 s.h.
Introduction to film theory, including narrative analysis, formal analysis, and historical analysis.

300:154 Mass Communication 3 s.h.
An introduction to the study of mass communication, including its history, functions, and impact on society.

300:211 Mass Communication and Society 3 s.h.
Examination of the relationship between the mass media and society, including issues of ownership, regulation, and public policy.

300:251 Mass Communication and Public Opinion 3 s.h.
Study of the role of mass media in shaping public opinion and political attitudes.

300:335 Critical Thinking and Mass Communication 3 s.h.
Critical examination of the role of mass media in shaping public opinion and political attitudes.

Communication and Theatre Arts

Theatre Arts

301:101 Introductory Theatre 3 s.h.
Basic principles of theatre, including history, production, and performance.

301:102 Theatre and Society 3 s.h.
Study of theatre as a reflection of and commentary on society.

301:201 Directing and Stagecraft 3 s.h.
Introduction to directing and stagecraft, including production techniques, acting techniques, and stage management.

301:202 Acting for the Camera 3 s.h.
Study of acting techniques for film and television.

301:301 Shakespeare and the Theatre 3 s.h.
Study of the works of William Shakespeare and their impact on theatre.

301:311 Advanced Acting 3 s.h.
Advanced study of acting techniques, including character development and physical theatre.

Bachelor of Arts

Undergraduate Program in Theatre Arts

The major in theatre arts provides a liberal arts education and preparation for professional or educational work in the theatre. The Bachelor of Arts degree provides a strong background in theatre art and dramatic literature with an emphasis in the major interest areas of acting, design, directing, playwriting, and theatre history.

Advising

Initial advising for theatre arts majors is handled by the undergraduate program chair. If a student has selected an area of interest, the undergraduate program chair will assign the student a faculty advisor in that area. Although an advisor is necessary for enrollment, no student is required to accept any advisor, and may request a change at any time by contacting the professor in charge of theatre arts. Faculty advisors also have the right to decline a student.

Pre-enrollment in many theatre arts courses requires special permission.
programs are required, and students must regularly for admission each year. Substantial creative work of high quality is expected of all candidates.

**Facilities**

The division's commitment to an extensive and varied production program is reflected in its use of four quite different theater spaces: a large flexible, fixed-seat stage; a smaller, fixed-seat stage; a convex box; and a proscenium arch stage. Each space is equipped with the latest in lighting, sound, and projection equipment.

The division also stages productions in the Hussey Auditorium, the Studio Theatre, and the Studio Theatre, which offers seating for up to 150 patrons.

The division also produces numerous professional touring shows which perform in Iowa City, and also offers the latest and most sophisticated stage machinery available.

To support its comprehensive production and to provide its students with an appropriate range of experiences, the division maintains several shops for the building, maintenance, and storage of its sets, scenery, costumes, and properties. These shops can work to collaborate in a variety of ways, such as in the design, construction, and integration of the various elements of a production.

**Master of Fine Arts**

Students who demonstrate exceptional ability in acting, directing, playwriting, design, technical direction, costume design, stage management, or arts management, may apply for admission to the program of study and production leading to the M.F.A. Admission is based upon interview, audition, and/or a portfolio of relevant artistic work. Admission to the graduate program is determined on the basis of originality, creativity, and demonstrated commitment to the pursuit of a career as a professional artist. The graduate program is designed to provide students with the necessary training and resources to succeed in their chosen field.

**Courses**

**For Undergraduates**

307:10 Theater History

An introduction to the historical and cultural context of theater. A study of the development of stages, costumes, props, and set design. Focus on the evolution of theatrical techniques over time. 3 s.h.

307:15 Theatre Studies

Focus on the discovery of production techniques in various theatrical traditions throughout the world. Emphasis on the study of Shakespearean, classical, and modern productions. 3 s.h.

307:20 Drama and Society

Historical portrayal of the relationship between the theater and society from the Renaissance through the Victorian era. The study of the role of the playwright in society. 3 s.h.

307:25 Studio Theatre

Focus on the development of production techniques in various theatrical traditions throughout the world. Emphasis on the study of Shakespearean, classical, and modern productions. 3 s.h.

307:30 Shakespeare

Same as 3/2. 3 s.h.

307:35 Acting

Same as 3/3. 3 s.h.

307:40 Directing

Same as 3/4. 3 s.h.

307:45 Set Design

Same as 3/5. 3 s.h.

307:50 Lighting Design

Same as 3/6. 3 s.h.

307:55 Costume Design

Same as 3/7. 3 s.h.

315:35 Theatre Studies

Focus on the development of production techniques in various theatrical traditions throughout the world. Emphasis on the study of Shakespearean, classical, and modern productions. 3 s.h.

315:40 Drama and Society

Historical portrayal of the relationship between the theater and society from the Renaissance through the Victorian era. The study of the role of the playwright in society. 3 s.h.

315:45 Studio Theatre

Focus on the development of production techniques in various theatrical traditions throughout the world. Emphasis on the study of Shakespearean, classical, and modern productions. 3 s.h.

315:50 Shakespeare

Same as 3/2. 3 s.h.

315:55 Acting

Same as 3/3. 3 s.h.

316:40 Directing

Same as 3/4. 3 s.h.
307.100 Senior Seminar 1.5 a.
A faculty-arranged project in the student's area of interest.

Courses for Undergraduates and Graduates

307.101 Aphra Behn 3 a.
Organization and operation of the American theater from its beginning (c. 1700), emphasizing developments from 1660 to present.

307.103 Drama of the Twentieth Century 3 a.
An examination of the drama, theatre, and society in two decades of the twentieth century, chosen to provide a context for plays produced in the University theatres' seasons.

307.114 Contemporary Theatre 3 a.
Study of and discussion of recent plays.

307.125 View for the Actor 1.5 a.
Introduction to basic skills for the actor: relaxation, breath support, voice, and movement. Prerequisite: Consent of instructor.

307.120 Movement for the Actor 1.5 a.
Identification of physical movement problems, development of physical facility, movement exploration through structural and improvisational exercises. Prerequisite: Consent of instructor or corequisite: 307.125.

307.127 Actor's Technique 1.5 a.
Techniques in specific acting styles: classical, American, contemporary. An analysis of acting styles and areas covered over four semesters. Why be an actor? Consent of instructor.

307.130 Advanced Acting I 1.5 a.
Study of the annual training program for actors.

307.132 Advanced Acting II 1.5 a.
Prerequisite: Consent of instructor.

307.133 Advanced Acting III 1.5 a.
Prerequisite: Consent of instructor.

307.140 Acting Ensembles 1.5 a.
Prerequisite: Consent of instructor.

307.150 Preprofessional Training in Scene-Rhyme Playwriting 1.5 a.
Emphasis on radio drama. Prerequisite: Consent of instructor.

307.160 Advanced Acting 1.5 a.
Prerequisite: Consent of instructor.

307.165 Advanced Acting 2.0 a.
Prerequisite: Consent of instructor.

307.170 Advanced Acting 3.0 a.
Prerequisite: Consent of instructor.

307.175 Acting Techniques 1.5 a.
Prerequisite: Consent of instructor.

307.180 Acting Techniques 1.5 a.
Prerequisite: Consent of instructor.

307.195 Basic Acting 1.5 a.
Prerequisite: Consent of instructor.

307.200 Advanced Acting 1.5 a.
Prerequisite: Consent of instructor.

307.205 Advanced Acting 2.0 a.
Prerequisite: Consent of instructor.

Prerequisite: Consent of instructor.

307.220 Advanced Acting 4.0 a.
Prerequisite: Consent of instructor.

307.230 Directing I 1.5 a.
Prerequisite: Consent of instructor.

307.235 Directing II 1.5 a.
Prerequisite: Consent of instructor.

307.240 Directing III 1.5 a.
Prerequisite: Consent of instructor.

307.250 Directing IV 1.5 a.
Prerequisite: Consent of instructor.

307.260 Directing V 1.5 a.
Prerequisite: Consent of instructor.

307.270 Directing VI 1.5 a.
Prerequisite: Consent of instructor.

307.280 Directing VII 1.5 a.
Prerequisite: Consent of instructor.

307.290 Directing VIII 1.5 a.
Prerequisite: Consent of instructor.

307.300 Directing IX 1.5 a.
Prerequisite: Consent of instructor.

307.310 Directing X 1.5 a.
Prerequisite: Consent of instructor.

307.320 Directing XI 1.5 a.
Prerequisite: Consent of instructor.

307.330 Directing XII 1.5 a.
Prerequisite: Consent of instructor.

307.340 Directing XIII 1.5 a.
Prerequisite: Consent of instructor.

307.350 Directing XIV 1.5 a.
Prerequisite: Consent of instructor.

307.360 Directing XV 1.5 a.
Prerequisite: Consent of instructor.

307.370 Directing XVI 1.5 a.
Prerequisite: Consent of instructor.

307.380 Directing XVII 1.5 a.
Prerequisite: Consent of instructor.

307.390 Directing XVIII 1.5 a.
Prerequisite: Consent of instructor.

307.400 Directing XIX 1.5 a.
Prerequisite: Consent of instructor.

307.410 Directing XX 1.5 a.
Prerequisite: Consent of instructor.

307.420 Directing XXI 1.5 a.
Prerequisite: Consent of instructor.

307.430 Directing XXII 1.5 a.
Prerequisite: Consent of instructor.

307.440 Directing XXIII 1.5 a.
Prerequisite: Consent of instructor.

307.450 Directing XXIV 1.5 a.
Prerequisite: Consent of instructor.

307.460 Directing XXV 1.5 a.
Prerequisite: Consent of instructor.

307.470 Directing XXVI 1.5 a.
Prerequisite: Consent of instructor.

307.480 Directing XXVII 1.5 a.
Prerequisite: Consent of instructor.

307.490 Directing XXVIII 1.5 a.
Prerequisite: Consent of instructor.

307.500 Directing XXIX 1.5 a.
Prerequisite: Consent of instructor.

307.510 Directing XXX 1.5 a.
Prerequisite: Consent of instructor.

307.520 Directing XXXI 1.5 a.
Prerequisite: Consent of instructor.

307.530 Directing XXXII 1.5 a.
Prerequisite: Consent of instructor.

307.540 Directing XXXIII 1.5 a.
Prerequisite: Consent of instructor.

307.550 Directing XXXIV 1.5 a.
Prerequisite: Consent of instructor.

307.560 Directing XXXV 1.5 a.
Prerequisite: Consent of instructor.

307.570 Directing XXXVI 1.5 a.
Prerequisite: Consent of instructor.

307.580 Directing XXXVII 1.5 a.
Prerequisite: Consent of instructor.

307.590 Directing XXXVIII 1.5 a.
Prerequisite: Consent of instructor.

307.600 Directing XXXIX 1.5 a.
Prerequisite: Consent of instructor.

307.610 Directing XL 1.5 a.
Prerequisite: Consent of instructor.

307.620 Directing XLI 1.5 a.
Prerequisite: Consent of instructor.

307.630 Directing XLII 1.5 a.
Prerequisite: Consent of instructor.

307.640 Directing XLIII 1.5 a.
Prerequisite: Consent of instructor.

307.650 Directing XLIV 1.5 a.
Prerequisite: Consent of instructor.

307.660 Directing XLV 1.5 a.
Prerequisite: Consent of instructor.

307.670 Directing XLVI 1.5 a.
Prerequisite: Consent of instructor.

307.680 Directing XLVII 1.5 a.
Prerequisite: Consent of instructor.

307.690 Directing XLVIII 1.5 a.
Prerequisite: Consent of instructor.

307.700 Directing XLIX 1.5 a.
Prerequisite: Consent of instructor.

307.710 Directing L 1.5 a.
Prerequisite: Consent of instructor.

307.720 Directing LI 1.5 a.
Prerequisite: Consent of instructor.

307.730 Directing LII 1.5 a.
Prerequisite: Consent of instructor.

307.740 Directing LIII 1.5 a.
Prerequisite: Consent of instructor.

307.750 Directing LIV 1.5 a.
Prerequisite: Consent of instructor.

307.760 Directing LV 1.5 a.
Prerequisite: Consent of instructor.

307.770 Directing LX 1.5 a.
Prerequisite: Consent of instructor.

307.780 Directing LXI 1.5 a.
Prerequisite: Consent of instructor.

307.790 Directing LII 1.5 a.
Prerequisite: Consent of instructor.

307.800 Directing LIII 1.5 a.
Prerequisite: Consent of instructor.

307.810 Directing LIV 1.5 a.
Prerequisite: Consent of instructor.

307.820 Directing LV 1.5 a.
Prerequisite: Consent of instructor.

307.830 Directing LX 1.5 a.
Prerequisite: Consent of instructor.

307.840 Directing LXXI 1.5 a.
Prerequisite: Consent of instructor.

307.850 Directing LXXII 1.5 a.
Prerequisite: Consent of instructor.

307.860 Directing LXXIII 1.5 a.
Prerequisite: Consent of instructor.

307.870 Directing LXXIV 1.5 a.
Prerequisite: Consent of instructor.

307.880 Directing LXXV 1.5 a.
Prerequisite: Consent of instructor.

307.890 Directing LXXVI 1.5 a.
Prerequisite: Consent of instructor.

307.900 Directing LXXVII 1.5 a.
Prerequisite: Consent of instructor.

307.910 Directing LXXVIII 1.5 a.
Prerequisite: Consent of instructor.

307.920 Directing LXXIX 1.5 a.
Prerequisite: Consent of instructor.

307.930 Directing XXX 1.5 a.
Prerequisite: Consent of instructor.

307.940 Directing XXXI 1.5 a.
Prerequisite: Consent of instructor.

307.950 Directing XXXII 1.5 a.
Prerequisite: Consent of instructor.

307.960 Directing XXXIII 1.5 a.
Prerequisite: Consent of instructor.

307.970 Directing XXXIV 1.5 a.
Prerequisite: Consent of instructor.

307.980 Directing XXXV 1.5 a.
Prerequisite: Consent of instructor.

307.990 Directing XXXVI 1.5 a.
Prerequisite: Consent of instructor.

Communication and Theatre Arts/LIBERAL ARTS 83
incomprehensible
Economics

Department chair: Donald N. McClure

Economics is concerned primarily with the analysis of incomes, and corrective action to reduce the number of businesses that are not efficient in their use of resources.

The Department of Economics teaches students how to cope with economic systems and to understand the way in which economics can be applied to a broad range of economic problems. The department offers a wide range of courses for students to meet the needs of the nonmajor as well as the major.

Undergraduate Programs

The baccalaureate programs in economics provide a coherent background for a variety of positions in business and government. Graduates are prepared for employment in banking, financial institutions, industrial firms, and trade organizations, and in state, county, and local government agencies dealing with economic policy, regulations, and economics. A major in economics is also considered excellent preparation for law school.

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 majors, but the college requirements differ. The 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 to prepare the student for graduate work in economics or related business and technical fields. The B.A. 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:

220:502 Elementary Statistics and
220:7 Quantitative Methods
4 s.h.

220:502 Quantitative Methods II
4 s.h.

Twenty semester hours of credit in 100- level economics courses, including Economics 101 Microeconomics and Economics 102 Macroeconomics.

Most 100-level courses in economics have prerequisites, including


Economics 101 and 102 clarify the general education requirements in social sciences.

Credit gained in 100-level linear programming is not 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:

220:25-26 Calculus II
8 s.h.

220:120 Probability and Statistics
3 s.h.

220:132 Statistical Methods in
Econometrics
3 s.h.

Two 100-level courses in 100-level economics courses, including Economics 101 Microeconomics and Economics 102 Macroeconomics, and Economics 103 Quantitative Economics. Credit earned in 100-level Programming, and Employment and Protection Theory cannot be counted toward the 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 18 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 EIE-103 and EE-105, before the senior year. They must also register for EE-107 Senior Thesis in Economics for three hours of credit both semesters of the senior year, complete a thesis under direction of an economics faculty member of professional standing, 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.

Course Work for Nonmajors
Departmental course EE-1:2 Principles of Economics satisfies the College of Liberal Arts general education requirement in social sciences, and provides an introduction to specialized topics of upper-division courses. Students with limited study in economics may examine the economics behind current issues in 6E-7 Contemporary Economic Problems and Policy.

Course work in economics can be related to majors in many other fields—for example, environmental studies majors might take 6E-133 Economic Growth and the Natural Environment and EE-125 Microeconomics; political science majors might take EIE-119 Economics of the Government Sector and EE-141 Economics of American Industries.

A number of students combine related interests by pursuing double majors in economics and in fields such as computer science, geography, history, mathematics, political science, sociology, or statistics.

Graduate Programs
The department offers Master of Arts and Doctor of Philosophy degree programs. Each program has a separate thesis and quantitative core enhanced by a set of field courses. The M.A. degree program is designed to provide you with a broad background in economics, without the requirement 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, mathematical economics, 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

Primary for Undergraduates
Notes: EE-1 and EE-2 may be taken in either order or concurrently to be taken simultaneously; they satisfy the general education requirement in social sciences.

6E-100 Cooperative Economics Training Internship 0.5 ch.
6E-1 Principles of Economics 4.0 ch.
Organization and functions of modern economic systems, role of money, prices, and markets. How economic systems allocate resources, make economic decisions. Introduction to microeconomics, international trade. Prerequisite: satisfactory completion of University Writing Requirement.
6E-2 Principles of Economics 4.0 ch.
National income, employment, output, prices and economic growth; monetary and fiscal policy; growth and development; international finance. Prerequisite: satisfactory completion of University Writing Requirement.
6E-7 Contemporary Economic Problems and Policy 3.0 ch.
Emphasis on interpretation and analysis of current economic events, problems, and policy issues. Not open to students who have taken EE-1 or EE-2.
6E-101 Labor Economics 3.0 ch.
Introduction to labor economics; labor force, labor markets, discrimination, and the role of race and gender in the labor market. Prerequisites: EE-1 and EE-2, or senior standing.
6E-102 Microeconomics 3.0 ch.
Economic theory of consumer behavior, producer behavior, and role of markets in coordinating economic decision; conditions for efficient resource allocation by the market mechanism. Prerequisite: satisfactory completion of University Writing Requirement.
6E-103 Macroeconomics 3.0 ch.
Measurement of national product, employment, and inflation; monetary and fiscal policy; the price level; studies of the use of stabilization policy; explanation of the dynamics of inflation and the problem of deflation. Prerequisites: EE-1 and EE-2, or senior standing.
6E-111 Labor Economics 3.0 ch.
Introduction to labor market analysis of labor and non-labor institutions; labor supply decisions made by workers; labor demand decisions made by firms; and resulting patterns of employment and wages; economic pressure of unions; causes of unemployment. Prerequisite: satisfactory completion of instruction.
6E-113 Health Economics 3.0 ch.
Structure of America's medical care industry and applications of economic analysis to it, with emphasis on the financial organization of medical care delivery systems, economic consequences of the uninsured, and the role of physician and governmental policies. Prerequisites: EE-1 and EE-2, or consent of instructor.
6E-117 Money and Banking 3.0 ch.
Monetary institutions, theory, practice, and policy with respect to the role of money in the determination of income, employment, and prices in domestic and world economies. Prerequisites: EE-1 and EE-2, or senior standing.
6E-125 Economics of the Government Sector 3.0 ch.
Economic functions of government in open economy; economic analysis of major government activities and policies; measurement of the costs and benefits of government activities measured in both market and non-market terms. Prerequisites: EE-1 and EE-2, or senior standing.
6E-126 Political Economy of the Military-Industrial Complex 3.0 ch.
Recent literature on the theory of the "military-industrial complex," contrasts these views with those of the intellectual activists on national security issues. Examination of the economic, political, moral, and social implications of the military-industrial complex. Prerequisites: EE-1 and EE-2, or senior standing.
6E-127 Natural Resources in the World Economy and Conflict 3.0 ch.
Issues related to the "green revolution" and the international trade in nontraditional trade goods; international trade in international trade in natural resources; resource scarcity, international trade, and international conflict. Prerequisites: EE-1 and EE-2.
6E-128 Economic Development: Developing World 3.0 ch.
Aims 1. Take of undergraduates in Third World countries; examination of theories and policies of economic growth and development.
6E-129 Food and Agricultural Policy 3.0 ch.
Examination of major elements in the food policy arena and the role of international organizations. Analysis of the role of the Food and Agriculture Organization, World Bank, and other internationals in agricultural development. Prerequisites: EE-1 and EE-2.
6E-130 Economic Growth and Environmental Decay 3.0 ch.
Issues and observations of economic growth in developed countries; proximate-resource and energy limitations or economic growth; measurement of environmental quality in developed countries; and analysis of environmental and economic multi-problem policies for environmental quality and economic growth. Prerequisites: EE-1 and EE-2, or senior standing, or consent of instructor.
6E-131 Theory and Policy of Economic Development 3.0 ch.
Theory of static and regional development; factors influencing international trade, foreign investment, and international trade policies and measurement and...
change in regional economic activity; public policy toward integration and other developments. Prerequisite: ECON 311 or 312, or senior standing.

ECON 312 Problems in Urban Economics 3.0 h.
Application of economic analysis to urban problems; a historical perspective on urbanization and the planning of urban development; selected issues, special problems, and public policy of urban development. Prerequisite: ECON 311 or 312, or senior standing.

ECON 314 Economic Analysis of Agriculture 2.0 h.
Structural evolution of American agriculture; regional specialization and resource allocation; development of agriculture as an economic factor; selected policy issues. Prerequisite: ECON 311 or 312, or senior standing.

ECON 315 Urban Economics 3.0 h.
Topics in eight centuries of British history viewed as economic; urban forms, institutions, the labor market, property rights, and public policy. Prerequisite: ECON 311 or 312, or senior standing. Same as ECON 316.

ECON 316 Urban Economics 3.0 h.

ECON 317 Economic Theory 3.0 h.
Economic concepts and doctrine examined with attention to the role of individual and social utility, price, demand, supply, and market equilibrium. Prerequisites: ECON 311 or 312, or senior standing.

ECON 318 Problems and Methods in Economics 3.0 h.

ECON 319 Principles of Microeconomic Theory 3.0 h.

ECON 320 Microeconomics 3.0 h.

ECON 321 Microeconomics 3.0 h.

ECON 322 Microeconomics 3.0 h.

ECON 323 Microeconomics 3.0 h.

ECON 324 Microeconomics 3.0 h.

ECON 325 Microeconomics 3.0 h.

ECON 326 Microeconomics 3.0 h.

ECON 327 Microeconomics 3.0 h.

ECON 328 Microeconomics 3.0 h.

ECON 329 Microeconomics 3.0 h.

ECON 330 Mathematical Foundations of the Social Sciences 3.0 h.

ECON 331 Mathematical Foundations of the Social Sciences 3.0 h.

ECON 332 Mathematical Foundations of the Social Sciences 3.0 h.

ECON 333 Mathematical Foundations of the Social Sciences 3.0 h.

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ECON 383 Mathematical Foundations of the Social Sciences 3.0 h.

ECON 384 Mathematical Foundations of the Social Sciences 3.0 h.

ECON 385 Mathematical Foundations of the Social Sciences 3.0 h.

ECON 386 Mathematical Foundations of the Social Sciences 3.0 h.
In conference with their academic advisors, students work out programs of study designed to satisfy their major interests and secure their more distant goals. Normally they begin with courses emphasizing close reading of poetry, fiction, drama, and argumentative prose. Later they study particular literary forms and the literature and culture of selected historical periods.

English majors take courses in such diverse subjects as folklore, literature and film, or printing and book-design. They may also study the history and evolution 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 hortests their understanding of literature, English majors are encouraged to choose elective courses from such fields as history, classical or modern foreasts, 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 students decide to undertake an English major, they should consult the director of undergraduate study in the English department office, who will help them find an advisor experienced in the English major, and other printed material on the major, programs, courses, and special events.

Minor

A minor in English requires 16 semester hours of courses in Department of English courses. Twelve of these hours should be in advanced courses (311) and at least four of these hours should be at the 300 level or above. The general education requirements do not contribute toward the minor in English.

Honors

The English major with honors is designed to encourage talented students to explore a wide range of literary experience and to achieve mastery of its tools. During the junior year, an honors student takes a special examination that tests his or her knowledge of modern and classic poetry, foreign literature, the English language, and literary criticism. The examination qualifies the student to continue in the program, but the student uses the first semester of his or her senior year to compose an honors paper, either creative or critical, which is advised by any faculty member and evaluated by the honors committee. Honors study is planned in consultation with the student's honors advisor and members of the honors committee. The sequence of courses is designed to adapt to the student's needs, but students interested in earning honors in English are urged to consult the chair of honors as soon as possible.

Creative Writing

Many undergraduates come to The University of Iowa because of the influence 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 231-232 Creative Writing, 251 Fiction Writing, and 252 Poetry Writing.

Admission to the undergraduate workshops in fiction and poetry (885, 886, 251, 252 Undergraduate Writers Workshop: Fiction and 251, 252 Undergraduate Writers Workshop: Poetry) is only by invitation 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 secondary schools should select courses which fulfill the state guidelines for teachers of English. It is advised that students plan their course of study at least seven years before they wish to take part in the English department. Students may plan their course of study that will help them in their first teaching experiences should remain in the areas in which they will have to work with their students.

They will need advanced training in writing—fiction, poetry, and fiction are all important—because 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 language 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 simple and mechanical reading through the advanced stages when a reader comes increasingly to understand and respond to details of meaning and number 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, as they should plan a program which will permit graduate study at a later time.

English majors seeking teacher certification must plan their course of study to make certain that courses in English, in addition, they must devote one semester of the senior year to professional training apart from any other coursework.

The department also participates in a joint major in English and elementary education. 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 choosing to teach literature 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, linguistics, Shakespeare, American literature before the nineteenth or twentieth centuries.

In addition, a 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 recommends that one desiring to teach English should have considerably more training in the field.

Graduate Programs

Master of Arts (Literary Studies)

This program offers an introduction to the professional study of literature. It provides a general knowledge of the periods, movements, and major works of English and American literary history, as well as a broadened sensitivity to artful language as a medium of expression. Each student, in consultation with an
Doctor of Philosophy

The Ph.D. program is designed as preparation for the teaching, publishing, and research required of college and university faculty members. The doctorate requires 72 semester hours of graduate credit, of which at least 30 must be earned in residence at The University of Iowa.

Concentrations are possible in areas of literary history, literary criticism, writing, rhetorical theory and stylistics, folklore, bibliography, pedagogy, comparative literature, and linguistics.

Requirements for the Ph.D. include:
- Formal addition to candidacy by a vote of the department.
- Demonstration of a high level of competence in two foreign languages or mastery of a single foreign language and its literature.
- Distributed course work in specified historical areas, two seminars.
- A partial-wit, partial-oral comprehensive examination in three areas, one of which must be a historical period of English and American literature.
- A dissertation, which may be either a scholarly work or a piece of imaginative writing; and
- A final examination in defense of the dissertation.

All doctoral candidates are required to gain a substantial working knowledge of the rhetoric and literature core programs of the College of Liberal Arts.

Interested students should write to the department's director of financial aid and personal admissions for more detailed explanations.

Financial Aid

Aid is available to graduate students in the form of graduate assistantships, fellowships, and teaching and research assistantships. It is awarded on a competitive basis, since sources are limited, normally less than half the new doctoral students receive aid. Most, but not all, advanced doctoral students are supported.

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 materials must be submitted by February 15 of the following academic year. Forms are available from the department and the University Office of Admissions.

Admission

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.

Master of Arts in Expository Writing

This program emphasizes the theory, analysis, practice, and pedagogy of expository writing for students wishing to become better expository writers or critics of expository writing, or professional writers in such areas as the humanities, business and technical fields, or trade work. Normally, the program takes from three to four semesters to complete.

Financial aid

Aid is available to graduate students in the form of graduate assistantships, fellowships, and teaching and research assistantships. It is awarded on a competitive basis, since sources are limited, normally less than half the new doctoral students receive aid. Most, but not all, advanced doctoral students are supported.

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 materials must be submitted by February 15 of the following academic year. Forms are available from the department and the University Office of Admissions.

Admission

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.
Major Authors
The following are limited-enrollment discussion courses. Each author is represented by several major works. Combinations of authors are changed regularly. With permission of the instructor, a student may repeat registration for some course number if authors have been changed.

371 Chaucer 3 a.h.
372 Shakespeare 3 a.h.
375 Selected American Authors 3 a.h.
376 To Print or Persona 3 a.h.
377 Selected Modern Authors 3 a.h.
378 Selected Authors 3 a.h.

Seminars for Undergraduate Majors

450 Language, Literatures, and Law 3 a.h.
455 Western Indigenous 3 a.h.
Prerequisite: English major or consent of instructor.
459 Undergraduate Seminar 3 a.h.
Prerequisite: English major or consent of instructor.

For Undergraduate and Graduate Students

Literature and Culture

Primarily 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 major.

430 Introduction to Critical Problems 3 a.h.
431 Literature and Cultures of the Middle Ages 3 a.h.
432 Literature and the Cultures of the Renaissance 3 a.h.
433 Literature and the Cultures of the Enlightenment 3 a.h.
434 Literature and the Cultures of the Romantic Period 3 a.h.
435 Literature and the Cultures of the Nineteenth Century 3 a.h.
436 Literature and the Cultures of the Twentieth Century 3 a.h.

200 American Literature and Culture 3 a.h.
205 American Literature and Culture 3 a.h.
206 American Literature of the Nineteenth Century 3 a.h.
207 American Literature of the Twentieth Century 3 a.h.
211 American Folk Literature 3 a.h.
212 American Western Writers 3 a.h.
Special Interest
These courses are designed to serve the special interests and needs of advanced undergraduates and graduates in particular academic and professional areas of the University. They offer practice in specialized forms of writing for specialized purposes and audiences.

EN 118 Writing for the Housewife 2 s.h.
EN 122 Writing for the Businessman 2 s.h.
EN 123 Writing for Business and Industry 2 s.h.
EN 124 Exchange of Ideas: New Journalistic Writing 2 s.h.
EN 125 Forum Writing 1 s.h.
EN 126 Four-Lecture Writing 2 s.h.
EN 127 Forum-Style Writing Workshop 1 s.h.
EN 129 Critical Writing 2 s.h.
EN 290 Short Story Writing Workshop 2 s.h.

Theory and Practice
These courses are designed to serve the interests and needs of advanced undergraduates and graduates who aim to become creative practitioners, but also to serve teachers of expository writing. They combine theory and analysis of expository writing with practical experimentation in writing.

EN 282 The Art of the Essay 3 s.h.
EN 284 Approaches to the Teaching of High School Writing 3 s.h.
EN 285 Writing Workshop for Teachers 1 s.h.
EN 286 Short Story Writing 1 s.h.
EN 287 Themes in Style 2 s.h.
EN 288 Rhetoric in Traditional 2 s.h.
EN 289 Philosophy of Language and the Audience in Writing 2 s.h.
EN 290 Statistical Theory, Analysis, and Application 2 s.h.
EN 291 Research of Writing 2 s.h.
EN 292 Approaches to Teaching College Writing 3 s.h.
EN 293 Methods in Teaching Freshman Composition 3 s.h.
EN 294 College Writing in Teaching of Writing 2 s.h.
EN 295 Supportive Theories of Writing 2 s.h.
EN 296 Seminar: Problems in Rhetoric 2 s.h.
EN 297 and Bond: Project in Expository Writing 2 s.h.
EN 298 Special Project in Teaching of Writing 2 s.h.

Creative Writing
General Interest
These courses are designed to serve the general interests and needs of undergraduates and graduate students in all areas of the University. They offer practice in various aspects of form and creative writing.

EN 322 Creative Writing 3 s.h.
EN 325 History and Theory of Translation 3 s.h.
EN 326 Fiction Writing 3 s.h.
EN 327 Poetry Writing 3 s.h.
EN 328 Basic Report Writing 3 s.h.
EN 329 Advanced Report Writing 3 s.h.
EN 330 Advanced Fiction Writing 3 s.h.

Professional Workshop
These courses are designed to serve special needs and interests of undergraduate and graduate students who have substantial background and experience in a specific area of creative writing. They are open only to students who have received permission of the instructor or who have been admitted to work in the Writers Workshop.

EN 331 Undergraduate Workshop in Poetry 3 s.h.
EN 332 Undergraduate Workshop in Fiction 3 s.h.
EN 333 Undergraduate Workshop in Essay Writing 3 s.h.

EN 334 Fiction Workshop 3 s.h.
EN 335 Poetry Workshop 3 s.h.
EN 336 Report Workshop 3 s.h.
EN 337 Problems in Fiction Writing 3 s.h.
EN 338 Problems in Poetry Writing 3 s.h.

Independent Study
Same as EN 282. Same as EN 284.
EN 339 Forum on Fiction 3 s.h.
EN 340 Forum on Poetry 3 s.h.
EN 341 Seminar: Problems in Expository Writing 3 s.h.
EN 342 English Language and Literature 3 s.h.

French and Italian

Department Chair: Jean L. Horsey
Full-time professors: Victor J. Barreca, Florentino V. Cardone, Jordan L. Lott, John T. Nauth, Nino Scire, associate professor Charles F. Alman, James G. O'Regan, Bruce DeSoto, Margaret Sargent, Steve Unger
Former professor: Wendy DeLamar, Geoffrey Mays
Department officers: B.A. (French in England, M.A. (French, Ph.D. (French)

Undergraduate Programs
The department's purpose is to introduce students to the culture of France and Italy, provide an understanding of three countries' historical and contemporary importance, facilitate development of proficiency in the French or Italian language, and foster critical appreciation of French and Italian literature and civilization.

The department offers a variety of major programs in French and Italian, electives for upper-classmen with preoccupied linguistic skills, and flexible minors to meet the formal language requirements of the College of Liberal Arts to satisfy individual needs and interests.

Students studying in French or Italian may consult their studies with courses in education for the "College of Education" section of the Catalogue to prepare for jobs in high school teaching. They may also plan graduate study in various areas such as French, comparative literary, 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 communication, where the knowledge of a foreign language is essential.

Bachelor of Arts in French
The undergraduate major in French may be completed with an emphasis in literature, civilization, teaching, or applied French.

Courses taught in English do not count as credit toward the French major; nor is a grade of D in any required French course.

Literature Track
Designated for those students who are interested in French literature or in combining the study of French literature with a major in another field, such as English, comparative literature, cinema, or history. The literature track requires a total of 36 semester hours of credit in French including:

9-27-28 Second-Year Composition and Conversation 8 s.h.
9-11:11-12 Third-Year Composition 8 s.h.
10-12 Advanced Conversation: Third Level 2 s.h.
10-13 French Conversation: Fourth Level 2 s.h.

9-15 Advanced French Pronunciation 2 s.h.

A minimum of four 100-level courses in literature at least two of which must be above the 180 level, plus a filth 100-level course in a discipline of literature, advanced language, or civilization totaling 10 semester hours.

Civilization Track
Designated for students interested in French culture, 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 56 semester hours of credit in French, including:
9:27-28 Second-Year Composition and Conversation 8 s.h.
9:111-112 Third-Year Composition 5 s.h.
9:112 Third-Year Composition 3 s.h.
A minimum of four 100-level courses in civilization and three 100-level courses in literature, totaling 21 semester hours and including at least two courses above the 160 level.

Teaching Track
The teaching track requires 58 semester hours of credit in French, including:
9:27-28 Second-Year Composition and Conversation 8 s.h.
9:111-112 Third-Year Composition 6 s.h.
9:116 Advanced French Pronunciation 2 s.h.
9:128 French Conversation: Third Level 2 s.h.
9:136 French Conversation: Fourth Level 2 s.h.
A minimum of five 100-level courses, of which at least two are in literature and two in civilization, totaling 15 semester hours and including at least one course above the 160 level.

The student who wishes to pursue a secondary teaching certificate must also complete the College of Education requirements for teacher certification.

Applied French Track
Designed for students with an interest in areas such as international business, commerce, or law, and others in which speaking French would be an asset, the applied French program requires 39 semester hours in French, including:
9:27-28 Second-Year Composition and Conversation 8 s.h.
9:111-112 Third-Year Composition 5 s.h.
9:115 Business French 3 s.h.
9:129 French Conversation: Third Level 2 s.h.
9:136 French Conversation: Fourth Level 2 s.h.
9:135 Commercial and Technical Translation 3 s.h.
9:197 Translation Project 3 s.h.
Two courses each in French civilization and Second-language 13 s.h.
Electives recommended as an adjunct are courses in French stylistics and textual analysis, another language, economics, political science, and/or business-related electives.

Bachelor of Arts in Italian
Requirements for the major in Italian include:
19:111-112 Intermediate Italian 8 s.h.
19:111-112 Advanced Composition and Conversation 8 s.h.
19:106-108 Introduction to Italian Literature 6 s.h.
19:119-120 Dante and His Times 8 s.h.
19:101 Literature of the Nineteenth Century 3 s.h.
or
A Course in Twentieth Century Literature 3 s.h.
Total 29 s.h.

Honors
The department participates in the College of Liberal Arts Honors Program. For an honors degree in French, the student must complete:
9:106 Honors Readings 3 s.h.
9:196 Honors Seminar 3 s.h.
An additional course numbered above 180 in French literature, language, or civilization 3 s.h.

Summer Program in France
The department administers a summer program in France for students enrolled in the three lower French 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 Perpignan, the program combines formal classroom language skills and 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 Institutional Cooperation (CIC) is a non-profit organization that provides its members, i.e., the Top 10 universities and the University of Chicago. Attended with the Cours d'ete 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 Maison Francaise in the Foreign Language House at Westtown, 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 and pass a written and oral examination. The program must include 9:175 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 site of the comprehensive examination.

Master of Arts in French Education
This program is intended primarily for prospective secondary school and junior college teachers. Requirements include a total of 30 semester-hours of graduate credit. Of this total, it must be in educational psychology, and at least 9 must be in graduate (200 level) courses in French literature. The following courses are also suggested:
19:161 Stylistics: Analysis and Application 3 s.h.
19:164 Textual Analysis 3 s.h.
19:165 Advanced Grammar and Lexicology 3 s.h.
19:166 Comparative Stylistics 11:3 s.h.
19:113 French Civilization 3 s.h.
19:150 Methods: Foreign Language 3 s.h.
19:161 Language Laboratory Equipment Procedures 3 s.h.
19:175 Contemporary France 3 s.h.
19:176 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 at least one must be spent in residence at the University; the passing of a comprehensive examination; and the advancement of a dissertation.
Specific requirements include 9:251 Introduction to Old French Grammar, and four years 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 6 semester hours of credit (related field, such as another literature, history, philosophy, etc.) and must earn at least 6 semester hours of credit in 9000 level courses.

Students working toward the doctorate are required to spend at least one year teaching as graduate assistants 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 prerequisites 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 will be reviewed annually.

In order to pass the Graduate Record Examination scores required by the Graduate College, the department requires that all applicants for admission to graduate programs in French submit scores from the GRE Advanced Test in French.

Appointments
Teaching and research assistanships and University fellowships and scholarships are available to qualified graduate students. The Graduate College section of the Catalog. The department offers teaching assistantships for the Fall and Spring semesters.

For graduate students interested in teaching, the Research Fellow annually. Inquiries should be addressed to the departmental office.

Exchange assistantships agreements with the French Embassy of Education, the University of Politics, and the University of Picardy provide a limited number of graduate students one year of residence in France.

French Courses
A detailed description of courses offered each semester is available in the department office. All courses are given in French unless otherwise indicated. Courses numbered from 160-199 are intended primarily for advanced undergraduates; a graduate student should consult with his or her advisor before registering for these courses.

Course requirements for the M.A. and Ph.D. programs are 18 hours and 30 hours, respectively.
### Italian Courses

#### Primary for Undergraduates

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1151</td>
<td>Elementary Italian</td>
<td>4 cr.</td>
</tr>
<tr>
<td>1212</td>
<td>Intermediate Italian</td>
<td>4 cr.</td>
</tr>
<tr>
<td>1413</td>
<td>Conversational Italian</td>
<td>4 cr.</td>
</tr>
<tr>
<td>1514</td>
<td>Commercial Italian</td>
<td>4 cr.</td>
</tr>
</tbody>
</table>

#### For Undergraduates and Graduates

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1211</td>
<td>Advanced Italian</td>
<td>4 cr.</td>
</tr>
<tr>
<td>1311</td>
<td>Advanced Italian</td>
<td>4 cr.</td>
</tr>
</tbody>
</table>

### General Science

The program in general science is designed for preprofessional students who need credit in several science disciplines, and for students interested in such variety. 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 is any three College of Liberal Arts science-mathematics areas (biochemistry, botany, chemistry, mathematical sciences, geology, microbiology, physics, astronomy, zoology).

For either degree, the major coursework must include 40 semester hours in one of the science-mathematics areas. A student majoring in general science must earn at least 10 semester hours of graded credit in science courses taken at The University of Iowa.

No credit earned in a designated science general education course or in the CLEP Natural Science General Examination may be applied toward the major 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, chemical technology, dental 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 124-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 toward the 20-hour minimum science 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 unit 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 reaching program may earn a Bachelor of Arts or Bachelor of Science degree by completing one of the approved specializations listed under "Science Education" in this section of the Catalog of the Curriculum for the academic year 56 semester hours.

Students who want to teach in secondary schools must also satisfy certification requirements, which include a 20-semester-hour specialization in education (see "Secondary Education") in the "Bachelor of Science" section of the Catalog of the Curriculum.

Students majoring in general science are urged to take requirements courses 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 at least 12 semester hours in mathematics courses, or an equivalent course, or a higher-level college mathematics course.

225:4 Quantitative Methods 4 s.h.
245:11 Fundamentals of Mathematics 4 s.h.
256:18 Calculus for the Biological Sciences 3 s.h.
256:20 Elementary Functions 3 s.h.
Any 200 course except 225:11

Students majoring in general science are expected to meet the College of Liberal Arts language requirement with German, French, Russian, or Spanish, unless the student's academic adviser gives written approval of another language.

Completion of a minor in general science requires at least 20 semester hours of credit in any of the five areas of science: mathematics, physical science, biological science, cultural studies, and social science. All areas of the minor must be completed with a grade of C or better. Each of the 20 hours of coursework must be included in the 124-hour total.

Students who declare a minor in general science must complete 16 semester hours of coursework in the minor, of which no less than 8 hours must be at the 300- or 400-level.

The minor requirement is designed to give students an understanding of various scientific disciplines without requiring a degree in any specific field.

Students may complete the minor requirements anytime during their undergraduate career, but full minor status must be completed upon graduation.

The minor in general science is intended for students who wish to pursue a multidisciplinary approach to understanding the natural world, to enhance their analytical and critical thinking skills, and to develop a broad appreciation of the scientific enterprise.

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 the 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. Requirements for admission are not rigid. Although almost all students currently working toward the Ph.D. in genetics at The University of Iowa College of Medicine, grade-point averages greater than 3.0 and GRE totals (verbal plus quantitative) exceeding 1250, students with lower grades may be considered, depending on other indicators of academic potential. The program accepts admission applications at any time.

Financial Aid

The Health and Human Services Office, Office of the Dean, College of Medicine, provides information on financial aid for graduate students.

Other students will be supported by full-time teaching or research assistantships, with stipends in excess of $9,000 per year. Students receiving assistantships are not eligible to apply for full or partial tuition scholarships.
Medical Scientist Training Program

Students may continue study toward an M.D. and a Ph.D. in genomics. Further information about this program may 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 the Catalog for further information about these programs.

Courses

The following genetics courses are available to graduate students:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>04:150</td>
<td>Biochemistry of Informational Molecules</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04:225</td>
<td>Topics in Molecular Biology</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>04:233</td>
<td>Cyto genetics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>04:265</td>
<td>Genetics and Biogenesis of Cell Organelles</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>04:275</td>
<td>Genetics Seminar</td>
<td>0-2 s.h.</td>
</tr>
<tr>
<td>04:175</td>
<td>Human Genetics</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>04:170</td>
<td>Microbial Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04:175</td>
<td>Microbial Genetics Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>04:176</td>
<td>Comparative Microbial Genetics and Genomes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04:270</td>
<td>Topics in Medical Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04:175</td>
<td>Population and Evolutionary Genetics</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>04:185</td>
<td>Behavioral Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04:185</td>
<td>Quantitative Genetics</td>
<td>3 s.h.</td>
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<tr>
<td>04:170</td>
<td>Eukaryotic Molecular Biology</td>
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<td>04:172</td>
<td>Molecular Genetics</td>
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<td>04:172</td>
<td>Topics in Evolutionary Genetics</td>
<td>2 s.h.</td>
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<td>04:175</td>
<td>Topics in Eukaryotic Molecular Biology</td>
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<td>04:175</td>
<td>Advanced Genetics</td>
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Geography

Department chair: James B. Lovberg

Degrees offered: B.A., B.S., B.F., Ph.D.

Geography seeks to provide students with an understanding of the complex relationship between the natural environment and human societies. The discipline explores the ways in which human activities shape and are shaped by the physical environment. It examines the distribution and concentration of natural resources, the growth and development of urban areas, the movement of people and goods, and the impact of human activities on the environment.

Students who elect courses in geography may choose to pursue careers in a variety of fields, including urban and regional planning, environmental science, and international relations.

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 they 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 Arts degree. Those who wish to pursue a liberal arts objective are advised to elect the Bachelor of Arts degree.

Requirements

All geography majors must complete a minimum of 26 semester hours of geography courses, with at least 15 of which must be at the 300 level. Many students major in geography; they must complete the requirements outlined above in addition to the minimum requirements for a major of specific academic interest.

All geography majors must complete:

- 44:110 Spatial Organization
- 44:110 Undergraduate Seminar for Geography Majors

and one of the following courses:

- 225:127 Applied Statistical Methods and Experiments
- 225:215 Elements of Statistical Inference
- 225:101 Biostatistics
- 225:112 Introduction to Statistical Methods

In addition, Bachelor of Science students must complete a mathematics requirement covering:

- 226:3 Mathematical Techniques II
- 226:16 Fundamentals of College Mathematics
and 22M:20 Elementary Functions or 22M:16 Calculus for the Biological Sciences or 22M:18 Calculus for the Physical Sciences or 22M:35 Calculus I or 22M:36 Engineering Calculus I and a computer science requirement consisting of:

22C:7 Introduction to Computing with FORTRAN or 22C:18 Introduction to Programming with PASCAL

With the consent of the geography faculty, equivalent courses, which have similar objectives as these, may be accepted in fulfillment of the write-in, mathematical, and computer science requirements.

Recommendations

Students majoring in geography are advised to:

Take both the introductory level courses 44:1 Introduction to Human Geography and 44:2 Introduction to Physical Geography during their freshman or sophomore year.

Take first 44:110 Spatial Organization followed by 44:150 Undergraduate Seminar for Geography Majors during their senior year.

Take the statistical and mathematical requirements as early as possible because many advanced level geography courses assume prior knowledge of the subject.

Students are also strongly recommended to take 22M:25 Calculus I and II in fulfillment of the mathematics requirement. Students equipped with these skills will find themselves with greater flexibility, particularly for upper-level geographic studies and future career opportunities.

Courses for the Nonmajor

Students in the College of Liberal Arts or other schools of the University may find geography courses useful for their own areas of study. The beginning-level courses 44:1 Introduction to Human Geography, 44:2 Introduction to Physical Geography, 44:11 Introduction to Social Geography, 44:19 Contemporary Environmental Issues, and 44:30 Introduction to Economic Geography are available for general education 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 Rural Geography, 44:36 World Cities, 44:15 Local Conflict, 44:125 Drainage Basin: Form and Process, 44:162 The Third World, 44:191 Energy in Contemporary Society. Students in related disciplines may take groups of courses leading to a minor in geography. Bachelor of General Studies students may also take a group of geography courses as part of their degree. The geography courses listed below under the different programs for the major in geography will serve as a guide to course selection. Additional information about a minor in geography is available in the department office.

Environmental Studies

The undergraduate program in environmental studies is designed for students with career expectations or personal interests in resource management or environmental policy, 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 biotic communities. It stresses the interrelationships among those processes and gives the student knowledge necessary to assess the impact of human activities on physical systems. Training in field observation, quantitative analysis, computer methods, and cartographic representation should be included in this concentration.

Students concentrating in environmental studies should take 44:2 Introduction to Physical Geography and 44:19 Contemporary Environmental Issues at the beginning of their program. They are advised to select additional geography courses from the following:

- 44:1 Introduction to Human Geography
- 44:23 Introduction to Economic Geography
- 44:101 Weather and Climate
- 44:115 Locational Conflict
- 44:120 Natural Hazards
- 44:122 Environmental Conservation in the United States
- 44:125 Geography of Natural Resources
- 44:124 Introduction to Global Environmental Change
- 44:125 Experimental Impact Analysis
- 44:126 Drainage Basin: Form and Process
- 44:129 Water Resources Management
- 44:180 Field Studies
- 44:191 Energy in Contemporary Society
- 44:170 Map Making and 44:109 Computer Methods in Geographical Analysis are strongly recommended.

Under the direction of an advisor, students should select courses (at least 21 semester hours) from among one of the following clusters:

- 522:150 Principles of Environmental Engineering

522:181 Irrigation and Drainage
522:186 Hydrology
522:187 Water Resources Systems

Environmental Science

11:22 Ecology and Evolution
11:25 Chemistry and Physics of the Environment
11:25 Technology and Man
2:11 Plant Diversity
2:06 Plants and Human Affairs
2:11 Plant Ecology
2:15 Plant-Animal Interactions
2:118 Field Ecology
2:132 Ecology
37:133 Topics in Ecology
37:136 Quantitative Field Ecology
37:137 Advanced Methods in Ecology

Environmental Management

6E:11 Principles of Economics
6E:2 Principles of Economics
6E:11 Microeconomics
6E:10 Macroeconomics
6E:119 Economics of the Government Sector
6E:127 Natural Resources in the World Economy: Control and Conflict
6E:133 Economic Growth and Environmental Policy
6E:100 Administrative Management
6E:161 Individual Behavior in Organizations
6E:163 Design and Management of Organizations
102:101 Introduction to Planning and Policy Development
102:102 Case Studies in Urban and Regional Planning
122:04 Introduction to Environmental Planning
91:136 Resource Planning
527:102 Technology of Environmental Pollution Control
527:104 Environmental Planning and Management

Urban and Regional Studies

Students with interests in urban and regional analysis will find this concentration relevant, either as background training for graduate work or as a career in entry-level positions in government and private businesses. This concentration focuses on the problems and potentials of towns, cities, and regions and the decision-making processes of individuals and institutions. Dealing with such problems as assessing sites for development potential, locating public facilities, and gauging neighborhood change brings the student inside the dynamic of contemporary cities. Required skills in quantitative analyses, cartography, and computer usage are developed. Opportunities for experience in working with real problems are included.

Students concentrating in urban and regional studies are advised to select at least 21 semester hours from the following:

- 44:1 Introduction to Human Geography
- 44:2 Introduction to Physical Geography
44:11 Introduction to Social Geography
44:15 Introduction to Political Geography
44:30 Introduction to Economic Geography
44:35 World Regions
44:115 Locational Conflict
44:116 Urban Political Geography
44:125 Environmental Impact Analysis
44:130 Location of Services
44:131 Medical Geography: Health Services
44:132 Industrial Location
44:133 Introduction to Transportation
44:134 Urban Transportation
44:135 Urban Geography
44:136 Urban Problems
44:137 Urban and Regional Modeling
44:138 Urban Problems
Also strongly recommended:
44:107 Maps and Mapping
44:108 Computer Methods in Geographical Analysis

Under the direction of their advisors, students should select courses in related disciplines from the following:

113:118 Urban Anthropology
18:187 At-America History 1914-
1918
30:111 Municipal Government and Politics
34:172 Social Dynamics of Urban Life
102:101 Introduction to Planning and Policy Development
102:102 Case Studies: Urban and Regional Planning
102:105 Regional Development Policy

International Development Studies
The concentration in international development studies is designed for students interested in international affairs, to broaden their social, and political development of new and old nations; in the solution or regional problems that have global implications; and in international comparisons. 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.

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
44:2 Introduction to Physical Geography
44:11 Introduction to Social Geography
44:15 Introduction to Political Geography
44:30 Introduction to Economic Geography
44:135 Urban Geography
44:115 Locational Conflict
44:124 Introduction to Global Environment
44:101 African Development
44:152 The Third World
44:165 The Changing World
44:191 Energy in Contemporary Society

Under the direction of an advisor, students should select courses in related disciplines from among the following:

30:90 Introduction to World Politics
30:127 Policy Problems in Industrial Societies
30:150 The Political Economy of the Third World
30:150 International Politics
30:199 Politics of War and Peace
6E:123 Political Economy of the Military-Industrial Complex
6E:129 Economic Development of Developing Areas
18:90 Culture and Politics of Latin America
18:90 Introduction to Modern Latin America
18:170 Modern African History
18:126 China: The Great Wall of Mao
Appropriate foreign language training might also be a part of the student's degree program.

The department participates in the interdisciplinary Global Studies Program.

Individual Programs
Students with more general interests who wish to pursue a Bachelor of Arts degree may design their own individual programs of instruction with the help of their advisors. Such programs must include 26 semester hours of geography, at least 15 of which must be at the 100 level. They must include the following courses:

44:115 Spatial Organization
44:150 Undergraduate Seminar for Geography Majors

and at least 21 semester hours of courses numbered 225-101.

The Cooperative Education Program
The Department of Geography is a participant in the University's Cooperative Education Program, which provides opportunities for both undergraduate and graduate students to secure cooperative training assignments related to their academic programs.

Graduate Program
The goals of the department at the graduate level are to prepare students to carry on creative and productive research in geography involving the use of theory, modeling, and formal verification methods, and to prepare students for positions in research, teaching, or some area of applied geography. The achievement of these goals is demonstrated in large measure by the demand for University of Iowa graduates to fill faculty positions in colleges and universities, in research-oriented institutions, and in business and government.

The Department offers a specialization in the teaching of geography at the college level 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 supervised teaching duties.

Master of Arts
The department offers an M.A. program that emphasizes the acquisition of teaching 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, and 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 students whose ultimate goal is the Ph.D. degree.

As soon as possible during the first year of residence, students, in close consultation with their advisor and other faculty, determine a specific area of interest and begin study for their degree program. This should also include the identification of the student's interests and should identify clearly the general area (or areas) within geography in which the student wishes to concentrate. The program of study must also emphasize relevant 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 at the 400 level or above and 9 semester hours of these must be at the 500 level. Specific requirements for the degree arc:

At least 4 semester hours chosen from among the following courses: 440:101-202 Geographical Analysis I and II
440:202 Quantitative Analysis

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 their program in one full year.

The M.A. degree is available with or without thesis. A minimum 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

The Doctor of Philosophy program is designed to prepare students for positions in college and university teaching and in advanced research. It provides programs of study leading to (1) broad knowledge of a field of geography and its literature as well as (2) a specific field of competence and special expertise. The former might represent the general area in which the Ph.D. holder seeks employment, whereas the latter would represent the area of active research involvement.

Students whose objective is the Ph.D. degree in geography are required to complete 8 semester hours of 44:201-202 Geographical Analysis I & II and 44:203-206 Quantitative Analysis I & II. The eight mini-courses comprising 44:201-202 should be taken within the first two years in residence, and must include mini-courses offered by at least six different faculty members. The four courses 44:203-206 Quantitative Analysis I & II should be taken during the first year in residence. Students may meet these requirements with satisfactory performance in written examinations.

All doctoral students must also complete two research seminars, preferably during the second or third year in residence, under the direction of different faculty members. Unless excused by the faculty, Ph.D. candidates are also required to register for 44:350 Research Seminar: Staff each semester while they are in residence.

The remainder of the Ph.D. program includes appropriate graduate courses, seminars, and independent study in geography; courses in disciplines closely related to geography; objective and interests; and courses which satisfy the language requirement stated above.

Research tool requirements for Ph.D. candidates are the course 44:350 Quantitative Analysis II and another appropriate course, as approved by the faculty at the time the student declares his or her specific area of specialization.

By their fourth semester in residence, doctoral students should submit a written report that includes a plan of study and progress toward the assessment of progress to date, an outline of the area within geography in which they intend to specialize, and a proposed plan of study for the following year.

Preferably during the second year in residence, doctoral students who have been admitted to the graduate program without prior 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, are encouraged to submit this paper earlier. The faculty will pass upon the merits of the research thus demonstrated. Students become Ph.D. candidates when their qualifying papers have been accepted. All doctoral candidates are expected to have supervised experiences as classroom instructors and research assistants before being awarded the Ph.D. degree.

Regional Science

The department offers graduate study in regional science. In addition to the requirements for the M.A. or Ph.D. degree in geography, students selecting regional science as their field of study are required to take courses in location theory and analysis, regional economic development, regional analysis, economic theory, macroeconomic theory, and operations research. Doctoral candidates in the field of regional science also are expected to complete courses in philosophy and epistemology in geography and in economics as well as three courses in a field of specialization such as location theory, regional economic development, environmental systems management, transportation modeling and policy, or population studies. Students may choose to apply to the Department of Economics to earn master's degrees in economics as a part of their master's and doctorate in Geography, because completing the regional science requirements entails satisfying most requirements for the master's in economics.

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 the last 30 grades of junior and senior years; scores on the Graduate Record Examination Aptitude Tests: three letters of recommendation; and an essay in which the applicant states forth the reasons for wanting to study geography at The University of Iowa.

An applicant with an undergraduate grade-point average of 2.10 and 2.76 will be admitted only for the M.A. degree and on the condition that he or she achieve a graduate grade-point average of 3.0 or above in the first 12 semester hours of graduate work, as approved by the department.

Foreign students, and those from under-graduate institutions that evaluate students on a basis other than grade-point average, will be considered according to their relative 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. These graduate appointments should ordinarily be renewed by Feb.-May 15.

Facilities

The department possesses a unique complete graphics hardware system in the NILAC's POS-4 mini-computer that supports a GRAP PEN Off-3 series digitizer. The POS-4 is a 34K system with a CRT for on-line editing and an accompanying software support package. Digit Series, developed locally that allows for a broad range of computer graphic applications. This system is linked to one of four PRIME 750 systems, each supplying 48 terminals and all linked to the IBM 370/195. Complementing these hardware systems are an increasing number of sophisticated software packages that will dramatically improve interactive computing capabilities.

The Map Library contains more than 75,000 maps, a total of 2,050 atlases and reference works, and about 80,000 serial geographic publications. The library is a depository for maps of the National Geographic Society and formerly Army Map Service.

The Geology Library contains approximately 50,000 maps, including both geologic maps and U.S. Geologists' Survey topographic maps. The Department of Geography has its own collection of topographic maps, maps of large urban centers, and aerial photographs for use by students in laboratory exercises.

Courses

Most courses open to undergraduate students may be taken, in any order or simultaneously as recommended, however, 44:41 to 44:50 and 44:10 to 44:20 in that sequence. All courses below the 100 level are for freshmen; 44:1, 44:2, 44:11, 44:19, and 44:20 are available only for the general education requirement in social sciences.

Primarily for Undergraduates

44:000 Cooperative Education Training Assignment 8 h.

461 Introduction to Human Geography 4 h.

483 Application of geometric principles to contemporary problems in environmental planning and growth; problems of the city; affluence of communities, territory, and perception.
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 (invertebrates, vertebrate, paleopythology), 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 1,100 students enroll in 1243 Earth History and Resources and 1124 Man and His Physical Environment, a team-taught, laboratory-teaching course designed to fulfill the College of Liberal Arts general education requirement for natural science studies.

Other offerings for nonmajors include a lecture sequence for person in geology, presented in a general science course, and several advanced courses with fewer 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 standards 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 appropriate courses in economics, geography, and/or anthropology.

Bachelor of Science

The Bachelor of Science professional program in geology is designed specifically as preparation for graduate study and for employment in industry. Required courses in this program:

- 125 Introduction to Geology 4 a.h.
- 126 Evolution of Earth 4 a.h.
- 1241 Mineralogy 4 a.h.
- 1252 Elementary Petrology 4 a.h.
- 1211 Summer Field Course 6 a.h.
- 1211 Principles of Paleontology 3 a.h.
- 1212 Structural Geology I 4 a.h.
- 1212 Structural Geology II 3 a.h.

At least two elective geology courses 8 a.h.

Total At least 36 a.h.

(Note: The student may substitute 1123 Earth History and Resources for 125 Introduction to Geology, but 125 is preferred.)

The geology major requires at least 10 semester hours of college mathematics, including 2240 Calculus II or 2236 Engineering Calculus II. Computer science or statistics courses may be counted toward the ten-hour requirement. Additional mathematics is strongly recommended.

Eight semester hours of physicals, 6 semester hours of chemistry, and a one-semester lab course of college biology 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 course work in education, the B.A. program provides a base for high school or community college teaching. A general background in geology and allied fields is also available in such areas as conservation and environmental problems. Course requirements for the B.A. in geology:

- 125 Introduction to Geology 4 a.h.
- 126 Evolution of the Earth 4 a.h.
- 1241 Mineralogy 4 a.h.
- 1252 Elementary Petrology 4 a.h.
- 1211 Principles of Paleontology 3 a.h.
- 1211 Field Trip (two sections) 4 a.h.
- Geology electives 12 a.h.
- Total 36 a.h.

(Note: The student may substitute 1123 Earth History and Resources or 1124 Man and His Physical Environment for 125 Introduction to Geology, but 125 is preferred for the major.)

The B.A. in geology requires at least 10 semester hours of university-level mathematics, which may include computer science or statistics.

Eight semester hours of chemistry are also required, and advanced courses in other sciences and social sciences appropriate to the student's objectives are recommended.

Joint Programs

Joint programs can be arranged, typically with chemical physics, zoology, and anthropology.

Original Research

A junior or senior who is ready to pursue original research for credit in geology may seek a faculty member or 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's A Bachelor's "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 1210 Geologic Orientation.

Graduate students in geology must perform research, seek, or related authoritative services as part of the degree program.

Prospective graduate students in geology should consult the "Notes and Regulations" in the "Graduate College" section of the Catalog for general admission and graduate study requirements.

Master of Science

The M.S. degree programs are designed to complete the student's broad, fundamental background in geology and the supporting sciences. They prepare the student for a professional career in geology, or for more advanced and specialized studies—although in certain situations and with faculty approval the student may pursue an already specialized program at the master's level.

Entering graduate students are assigned to a general graduate adviser. 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 adviser and two additional faculty members, who turn an advisory committee. The student is responsible for getting the committee's approval of a suitable program of course work, 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 course work, including not more than 12 semester hours of research, 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. Course work taken to satisfy these requirements does not count toward the semester-hour requirements for the degree.

To qualify for admission to the final 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-hour 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-hour minimum required for the degree program.

**Master of Science with Thesis**

Students are encouraged to select thesis topics involving a variety of geological subdisciplines and geological skills. 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 thesis, which requires that the applicant have approximately three months of experience working under the supervision of a professional geologist, or equivalent experience in some other geologic activity.

If possible, the student should receive prior faculty permission to apply the experience toward the degree.

The student must submit a formal report on the activity and on the geological principles involved and value and broader applications and implications. No college credit is given for this activity.

The M.S. degree without thesis requires at least 36 semester hours of graduate course work, of which at least 8 hours must be earned in other departments of the University.

The faculty may also require the student to write a formal scientific report dealing with an appropriate subject or area. Credit may be granted for this report.

The final examination covers course work and work done in lieu of the thesis.

**Master of Arts in Teaching (Earth Science)**

This program enables students to combine certification to teach secondary school with participation in a specialized graduate curriculum. Awarded by the College of Education, the M.A.T. degree requires at least 20 semester hours of graduate study in professional education and at least 16 hours of graduate course work in earth science.

**Doctor of Philosophy**

The Ph.D. degree in geology requires at least 72 semester hours of graduate course work, including at least two full-time semesters of residence beyond the first 24 semester hours of graduate study.

Departmental language and tool requirements for the Ph.D. degree may be met either by achieving competence in two languages or in one language and one tool. By achieving proficiency in one language, 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 languages are 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.

Course work taken to satisfy language and tool requirements may not be applied to credit requirements for the degree.

These are the minimum requirements:

- Satisfaction of course requirements for the M.S. degree in geology at The University of Iowa. Where appropriate, additional work in one area may be approved as satisfying requirements in another.
- An appropriate graduate course in another discipline. Courses crosslisted between geology and other departments are not generally considered to meet this requirement.
- At least 24 semester hours of graduate course work, exclusive of credits for dissertation research and beyond course work applied toward the M.S. degree.
- The comprehensive examination covers, in depth, all subdivisions of one major field and one subdivision in each of the three other major fields. It is also presumed that the doctoral candidate is proficient in the basic elements of general geology, as presented by current elementary textbooks.

These are the major and minor fields:

- Economic Geology
- Petroleum Geology
- Economic Deposits
- Mineral Economics

- Geology
- Lithology
- Sedimentary Geology
- Structural Geology
- Economic Geology
- Structural Analysis
- Remote Sensing
- Geophysics
- Exploration Geophysics
- Gold-Geology
- Rocks
- Petrology
- Stratigraphy
- Physical Stratigraphy
- Biostratigraphy
- Depositional Environments
- Sedimentary Petrology
- Sedimentation
- Sandstone and Carbonate Petrology
- Physical Stratigraphy
- Pleistocene Studies
- Plutonism
- Palaeontology
- Quaternary Palaeontology
- Palaeontology
- Palaeobotany
- Palaeoecology
- Biogeography
- General Geomorphology
- Glacial and Pleistocene Geology
- Environmental Geology
- Hyrogeology
- Remote Sensing
- Engineering Geology
- Other Minor Subjects
- Botany
- Zoology
- Chemistry
- Physics
- Materials Engineering
- Geography
- Hydrology
- Archeology-Arheology
- Science Education
- Other
facility (vertebrate, vertebrate, paleontological including a major repository), photographic lab, geophysics (gravity meter, field and rock core and sample databases, sedimentary units, high-pressure sample handling equipment), located in same building as the department, with sub-reposory of sedimentary rocks, remote sensing lab), network of microsatellite positions and sedimentary records (University's computer center), IBM 370, Prime 7500c, HP 22000 (computers), trailer-mounted soil probe, scanning electron microscope, microprobe, geology library with 33,000 volumes, journals and 70,000 maps.

Cooperative Activities
The department has collaborative work with the Iowa Geologic Survey and 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, and those sponsored by the department are characterized by a lay of field-geology on a largely theoretical basis. Vehicular travel for a hundred miles thick, overlying a Precambrian crystalline basement, Marine and terrestrial fossil assemblages, extensive trails, and unique geologic sites are available within a few hours' drive. All four Precambrian geologic provinces are found in Iowa and each offers distinctive landforms and fossil assemblages.
Spring recess provides time for longer trips available to all geology students. In recent years students have traveled to the Grand Canyon, the Florida Keys, the southern Appalachians, the Big Bend Region of Texas, and the Ozarka. Advanced classes visit Colorado, Ontario, Kansas, Oklahoma, and California.

Courses

Primary for Undergraduates
Introduction to surveying processes which have been surveyed and are currently being surveyed, from the earth to atoms to planetary level, discussed briefly to mineral input requirements, processes of weathering, erosion, rock deformation, subsidence, mountain building, eustatic, porosimetry, and continental drift considered. Open to all students who have not had previous course in geology or earth science.
110:14 Principles of Geologic Survey Lab 1 sh.
Laboratory investigation of the principles and processes which have been surveyed in geology courses, open to all students who have not had previous course in geology or earth science.
110:15 Introduction to Geology 4 sh.
Lectures and laboratories introduce topics include rock and mineral classification, Earth history, geologic processes, glaciation, mountain building, earthquakes, and igneous rocks, several field trips offered. Recommended for science majors and interested nonmajors. Not open to students who have had 112:15, 121:1, or 121:2.
110:16 Evolution of the Earth 4 sh.
Lectures, laboratories, discussions, and field trips treating the observed and interpreted history of the earth is historical perspective. Topics include origin of the earth, early evolution of the earth, the development of the earth, and the role of humans in the earth system. Required for science majors and interested nonmajors. Not open to students who have had 112:16 or 121:1.
110:17 History of Geology 4 sh.
Lectures, library, and field investigation of the sequence of events in geologic history responsible for the present surface environments and geological record. Required for science majors and interested nonmajors. Not open to students who have had 112:17.
110:18 Geology of Iowa 4 sh.
Lectures, library, and field investigation of the sequence of events in geologic history responsible for the present surface environments and geological record. Required for science majors and interested nonmajors. Not open to students who have had 112:18 or 121:1.
110:19 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
110:20 Sedimentary Geology 4 sh.
Weekly student reports and discussions of research on selected topics in sedimentary geology, principles, and an introduction to electronic imaging. May be repeated. Offered spring semester. Prerequisite: 110:15 or 110:17 and consent of instructor.
110:21 Field Trip 4 sh.
Seven to ten days during spring recess in areas of special interest, including deserts and mountains of the American Southwest, northern Arizona, Big Bend, Texas, region, southern Arizona, and the Sonoran Desert. Offered in the spring semester. May be repeated. Prerequisite: consent of instructor.
110:22 Field Geology 4 sh.
Introduction study of minerals, identifying procedures, traversing, and using to field and laboratory equipment. Required for science majors and interested nonmajors. Not open to students who have had 112:22 or 121:1.
110:23 Stratigraphy 4 sh.
Lectures and laboratory dealing with principles of sedimentology, and stratigraphy, and examining for descriptive techniques in stratigraphy. Required for science majors and interested nonmajors. Not open to students who have had 112:23 or 121:1.

For Undergraduates and Graduates
110:25 Field Geology 4 sh.
Introduction course focusing on processes which have been observed and are currently being observed, from the earth to atoms to planetary level, discussed briefly to mineral input requirements, processes of weathering, erosion, rock deformation, subsidence, mountain building, eustatic, porosimetry, and continental drift considered. Open to all students who have not had previous course in geology or earth science.
110:26 Historical Geology 4 sh.

110:28 The Way the Earth Works 3 sh.
How the "new geology" has formed the basis of our ideas of geology. Topics selected to illustrate the ways in which the principles of geology are applied to current issues of concern (e.g., earth's age, continental drift and sea-floor spreading) including environmental science, engineering, medicine, and the future.
110:29 Foundations of Geology 3 sh.
Prerequisite: graduate status or consent of instructor.
110:32 Introduction to Geomorphology 4 sh.
Survey of those surface processes by which physical, vegetation, and geologic aspects of the world are shaped. Field work with loads of principles of geomorphology, biologic, and earth science is desirable.
110:33 Introduction to Geology 4 sh.
Lectures, library, and field investigation of the sequence of events in geologic history responsible for the present surface environments and geological record. Required for science majors and interested nonmajors. Not open to students who have had 112:33.
110:34 Introduction to Geology Field Seminar 4 sh.
Remote sensing of the earth as surface and features, the earth's history as a framework for the present environment, an introduction to remote-sensing systems, and the basic analysis of remotely sensed images. Offered in the summer session. Prerequisite: consent of instructor.
Lectures, library, and laboratory dealing with principles of geology, and underlying principles of engineering for the earth sciences. Required for science majors and interested nonmajors. Not open to students who have had 112:35.
110:36 Geology of Iowa 4 sh.
Lectures, library, and field investigation of the sequence of events in geologic history responsible for the present surface environments and geological record. Required for science majors and interested nonmajors. Not open to students who have had 112:36 or 121:1.

110:37 Principles of Geologic Engineering

110:38 Principles of Geologic Engineering

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121:01 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:02 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:03 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:04 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:05 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:06 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:07 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:08 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:09 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:10 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:11 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
121:12 Field Study in Geology 4 sh.
Prerequisite: consent of the department.
Basic Program
13.11 First-semester German 4 a.h.
13.12 Second-semester German 4 a.h.
13.21 Third-semester German 4 a.h.
13.22 Fourth-semester German: Reading/Listening 3 a.h.
13.23 Fourth-semester German: Elementary Composition and Conversation 3 a.h.

Humanities Track
13.31 Introduction to Modern German Literature 3 a.h.
13.32 Introduction to Modern German Literature II 3 a.h.
13.53 Intermediate Composition and Conversation 3 a.h.
13.94 Intermediate Composition and Conversation 3 a.h.

Fourth Year
13.101 Advanced Composition and Conversation 3 a.h.
13.108 German Cultural History 3 a.h.
13.111 Survey of German Literature 3 a.h.
13.112 Survey of German Literature 3 a.h.

Students who intend to go on for an advanced degree are encouraged to enroll in 13.103 German Phonology (three semester hours) to the above.

Applied German Track
Third Year
13.24 intermediate Composition and Conversation 3 a.h.
13.24 Intermediate Composition and Conversation 3 a.h.
13.94 Intermediate Composition and Conversation 3 a.h.
13.107 Translation: Projects and Colloquium 2-4 a.h.
13.114 Business German 3 a.h.
13.115 contemporary German Civilization 3 a.h.

Fourth Year
13.101 Advanced Composition and Conversation 3 a.h.
13.114 Business German 3 a.h.
13.115 contemporary German Civilization 3 a.h.

The student in applied German must also complete at least one additional German literature or culture course.

German majors, graduate as well as undergraduates, are urged to supplement their degree programs with relevant courses in German history, philosophy, business, etc.

A student with native proficiency in German should 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 could conflict with the sequential requirements of the major in German, it is imperative that the student consult with the undergraduate advisor to help secure the successful completion of the certification program. In addition to the basic program requirements for the first and second year, a student must take the following courses or their equivalents for teacher certification in German:
12:31 Introduction to Modern German Literature I 3 s.h.
12:32 Introduction to Modern German Literature II 3 s.h.
12:33 Intermediate Composition and Conversation 3 s.h.
12:34 Intermediate Composition and Conversation 3 s.h.
12:101 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 (ifaussab) 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 Regents 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 Castle, Austria. All instruction in both language and culture is provided on appropriate levels. 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 independent travel period is scheduled during 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, but they must be familiar with 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 36 semester hours, or equivalent, of graded level work, 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.
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 subject areas 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 literary or literary, and is subject to the approval of the faculty.
Before the M.A. exam can be administered—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 or four years of high school study, with a grade of B or higher.

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 course work and is considered a terminal degree.
The same course requirements outlined for the M.A., with thesis apply to candidates for the M.A., without thesis; 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 in 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 or English, and a reading knowledge of which his or her advisor is pertinent to the student's research interests. For doctoral candidates in German, a reading knowledge of French or Russian and of a modern language other than Dutch is required. Competence in these languages may be demonstrated by two years of college study for 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 assistanships, research assistantships, graduate fellowships, and tuition scholarships are available for qualified graduate students. The department awards the Wilson and the Funk prizes to students of distinction.

Courses
Primarily for Undergraduates
102:1 First Semester Dutch 4 s.h.
102:2 Second Semester Dutch 4 s.h.
112:1 First Semester German 4 s.h.
112:2 Second Semester German 4 s.h.

102:2 Advanced German 4 s.h.
103:1 Advanced German 4 s.h.
104:1 Advanced German 4 s.h.
106:1 Advanced German 4 s.h.
121:1 Introduction to Germanic Linguistics 3 s.h.
121:2 Reading and Writing in German 3 s.h.
122:1 Reading and Writing in German 3 s.h.
122:2 Reading and Writing in German 3 s.h.
122:3 Reading and Writing in German 3 s.h.
124:1 Reading and Writing in German 3 s.h.
124:2 Reading and Writing in German 3 s.h.
126:1 Reading and Writing in German 3 s.h.
126:2 Reading and Writing in German 3 s.h.
126:3 Reading and Writing in German 3 s.h.
128:1 Reading and Writing in German 3 s.h.
128:2 Reading and Writing in German 3 s.h.
128:3 Reading and Writing in German 3 s.h.
131:1 Reading and Writing in German 3 s.h.
131:2 Reading and Writing in German 3 s.h.
131:3 Reading and Writing in German 3 s.h.
134:1 Reading and Writing in German 3 s.h.
134:2 Reading and Writing in German 3 s.h.
134:3 Reading and Writing in German 3 s.h.
136:1 Reading and Writing in German 3 s.h.
136:2 Reading and Writing in German 3 s.h.
136:3 Reading and Writing in German 3 s.h.
138:1 Reading and Writing in German 3 s.h.
138:2 Reading and Writing in German 3 s.h.
138:3 Reading and Writing in German 3 s.h.
141:1 Reading and Writing in German 3 s.h.
141:2 Reading and Writing in German 3 s.h.
141:3 Reading and Writing in German 3 s.h.
144:1 Reading and Writing in German 3 s.h.
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146:1 Reading and Writing in German 3 s.h.
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148:1 Reading and Writing in German 3 s.h.
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148:3 Reading and Writing in German 3 s.h.
151:1 Reading and Writing in German 3 s.h.
151:2 Reading and Writing in German 3 s.h.
151:3 Reading and Writing in German 3 s.h.
154:1 Reading and Writing in German 3 s.h.
154:2 Reading and Writing in German 3 s.h.
154:3 Reading and Writing in German 3 s.h.
156:1 Reading and Writing in German 3 s.h.
Global Studies

Global Studies Program

The Global Studies Program at The University of Iowa is designed to provide undergraduate students multidisciplinary study of major contemporary, interconnected global problems concerned with war, peace, and security; development; environmental concerns; and global resources, and cross-cultural understanding.

For undergraduates majoring in any department, in any college, are eligible to enroll in the program. In each case, a student will complete all requirements for a departmental major and, in addition, the requirements of the Global Studies Program. Students completing the requirements of the program are awarded a certificate of Global Studies at the time they receive their bachelor's degree. Students pursuing the certificate is Global Studies may also apply specifically Global Studies as their minor.

Candidates for the Bachelor of General Studies degree may also be admitted to the program. However, because B.G.S. candidates have no departmental concentration, they will 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 receive 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, 47:1 Global Interdependence and Human Survival, in the freshman or sophomore year. It is designed to provide an introduction to the four basic problem areas of the Global Studies Program, basic information relevant to each of the problems, clarification of their inter-connectedness, and identification of some current efforts to deal with them.

Multidisciplinary Senior Seminar

This course, 47:100 Global Studies Seminar, is offered only once a year and is required of all students in the program. Normally in their senior year it is designed to provide an in-depth exploration of a particular global problem or geographic area. Course content will vary from year to year, but in any case the course will be multidisciplinary and will feature distinguished speakers from on and off campus.

Global Studies Courses

Two special courses offered by the Global Studies Program are 47:7 Contemporary Africa, a multidisciplinary survey of the political, economic, and cultural life in sub-Saharan Africa, and 47:100 Problems in Global Studies. The subject of the latter course may change from year to year.

Other courses are once regularly offered by University departments, organized for Global Studies program purposes under four major headings. The student usually elects one course (1 seminar hour) under each major heading, and two additional courses (6 seminar semester) under one of the headings, for a total of six courses (18 seminar semester).

The four major program headings and the courses offered under these headings are indicated below.

I. War, Peace, and Security

This component of the Global Studies Program deals with the use of armed force for purposes of political ends on a continuum ranging from potential global nuclear 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:

30:154 Military Affairs or
16:146 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
65:123 Political Economy of the Military-Industrial Complex

And one from this group:

30:148 The Politics of Southern Africa
30:161 The United Nations
30:154 Military Affairs
30:166 Politics of War and Peace
30:167 Arms Races and Arms Control
30:127 Introduction to International Law
65:99 Historical Background of Contemporary Issues

(When the course deals with issues of particular relevance to global studies students)

16:146 War and Society
16:170 United States in World Affairs, 1800-1975
16:186 U.S.A. in a World at War, 1931-1945
8:162 Literature of Peace and War
8:123 Political Economy of the Military-Industrial Complex

II. 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 is the ways in which developed and developing countries interact, and how these interactions are thought to influence the character of and prospects for the developing countries.

All students must take either:

113:161 Sociology of the Third World (same as 94:151) or
65:128 Economic Development: Underdeveloped Areas

Students who elect to take three courses in this area would, in addition, take any two courses from this list:

30:146 African Development
30:150 The Political Economy of the Third World
65:125 International Economics
65:127 Natural Resources in the World Economy: Control and Conflict
65:128 Economic Development: Underdeveloped Areas
65:168 The Political Economy of Socialism
44:35 World Cities
44:152 The Third World
113:161 Sociology of the Third World (same as 94:151)
34:174 World Peace Problems
77:104 Education in the Third World
II. Environmental Concerns and Global Resources
This component of the Global Studies Program is concerned with the availability, use, and disposal of global resources. Students will learn about the environmental problems arising from the transformation of these resources by humans using modern technology. All students must take either:
44:190 Contemporary Environmental Issues
or
44:104 Introduction to Global Environment
Students who elect to take three courses in this area would, in addition, take any two of the following courses:
44:190 Contemporary Environmental Issues
44:123 Geography of Natural Resources
44:124 Introduction to Global Environment
44:191 Energy in Contemporary Society
37:125 A Planet in Crisis
(same as 12:125)
34:174 World Population Problems

V. Cross-Cultural Understanding
Global issues will require for their analysis and solution persons educated to understand that perceptions, values, and beliefs vary among societies; that these differing values complicate the process of people communicating about and arriving at possible solutions to global problems; and that it is likely to accommodate adequately to the examinaion, the perceptions, values, and interests of any one society. The goals of this program component are 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 competently with most global issues; and to encourage students to clarify their own values, as these bear on the analysis of global problems and proposals for their amelioration.
Two options are available for fulfilling the requirements of this program component:
Option 1: Students electing Option 1 must take either:
32:159 World Order and Conflicting Values
or
116:3 Introduction to the Study of Culture and Society
Students who elect, through Option 1, to take three courses in this program component must also take two additional courses from the following list:
32:158 World Order and Conflicting Values
42:187 World Futures
30:169 Human Rights
90:183 Human Rights in the World Community: Problems of Law and Policy
(emphasis inanteur)
65:158 The Political Economy of Socialism
19:180 Comparative Communications Systems
16:191 Contemporary Asian News Culturization
(same as 120:102)
47:7 Contemporary Africa
115:3 Introduction to the Study of Culture and Society
113:10 Anthropology and Contemporary World Problems
11:14 Language and Human Behavior
113:158 Woman's Role: A Cross-Cultural Perspective
113:172 Language and Culture
113:181 Race, Ethnicity, and International Relations
(same as 15:151)
Option 2: Students electing Option 2 may fulfill the requirements of this program component by taking 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 electing this option to fulfill the program's language requirement through the study of a language of the geographical area.
In addition to supervising its academic program, the Global Studies Committee organizes talks and conferences of interest to the general public as well as students.
Courses
47:1 Global Interactions and Peacekeeping 3 cr.
International Survey of the Peacekeeping Process. This course focuses on the questions of peacekeeping itself, as well as the organized conflict that is expected to linger for years to come.
47:20 World Studies in Global Studies 3 cr.
Current geographic studies and social issues. Emphasis varies.
47:80 Politics in Global Studies 3 cr.
Current political issues and social issues. Emphasis varies.
41:98 Global Studies Seminar 3 cr.
In-depth exploration of a particular global problem or geographical area. Course content will vary from year to year, but in all cases the approach will be interdisciplinary and will encourage students to seek perspectives from on and off campus. May be repeated with the consent of the Global Studies Committee chair.

Greek
See "Classical."
hours must be in non-U.S. History courses. This limitation is imposed to ensure that the student attends at least one other society besides our own.

Three semester hours in 18:51 Colloquium for History Majors. A colloquium consists of a small number of students collectively studying ways in which given task and experience in group discussion, analysis, and criticism. It is taken after the student has finished a number of other history courses.

One of the 24 semester hours of course work in related areas, such as anthropology, economics, fine arts (excluding studio art), mathematics, geography, literature (excluding workshop courses), philosophy, political science, psychology, religion, and sociology, or a second major in one of these areas. Courses taken to satisfy requirements in general education will not be counted toward the related-areas requirement.

Students majoring in history may waive three semester hours of the general education requirement in historical perspectives. They may not receive credit toward this requirement by taking courses that are listed in the above area by the faculty.

11:29-30 Problems in Human History, 11:31-32 Western Civilization, and 11:55-56 Civilizations of Asia (a total of 3 semester hours) but may count such a course toward the general education requirement in historical perspectives. They must complete the professional courses in the College of Education which are required for Teacher Certification (a total of 23 semester hours). They must take 18:51 Colloquium for History Majors.

Statutory majors in history who wish for a teaching certificate must take the following courses in the area:

American History Concentration Courses in U.S. history. 20 s.h.
Courses in related areas 36-44 s.h.

Students must take 12 semester hours of courses in each of the above areas. They must take 15 semester hours of courses in each of the 3 or 4 areas they choose, except psychology, in which they must make 20 semester hours.

Courses in these subjects which have been taken to satisfy the general education requirement in social sciences may be applied to the required hours in related areas, but no more than one such course may be applied to any one related area.

World History Concentration Courses in non-U.S. History 20 s.h.
Courses in the College of Liberal Arts 10 s.h.

Students must select three of the following six areas: economics, geography, American history, political science, psychology, sociology. They must take 23 semester hours in each of the three areas they choose, except psychology, in which they must make 20 semester hours. Courses in these three subjects which have been taken to satisfy the general education requirement in social sciences may be applied to the required hours in related areas, but no more than one course may be applied to any one related area. Three semester hours from general education courses in historical perspectives (11:29-30, 11:31-32, 1:55-56) 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).

Honor

The honors major is for students of superior ability who want a 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 Arts Honors Program by the director of that program, and to the honors program in history by the department. Applicants must be full-time students, have a GPA of 3.5 or above, and have completed a minimum of 30 semester hours. Successful completion of the honors thesis in the Bachelor of Arts degree with honors in History.

A minimum of 24 semester hours is required for the degree of Bachelor of Arts in History. At least 12 semester hours must be in non-U.S. History; minimum of 18 to 19 courses in related courses (See General Major in History); at least 9 semester hours of the departmental honors offerings, which may include up to 6 semester hours of honors essay credit.

Successful defense of an honors essay.

Honors credits may be obtained in honors seminar, honors tutorial, and supervised research for the honors essay. (The honors seminar fulfills the colloquium requirement of the general major.)

The honors essay should be a 30 to 40 page paper based on some research in primary sources. A committee of three faculty members will hear a defense of the essay, usually in one of the student's last semester.

Graduate Programs

The graduate programs in history prepare students to teach in high schools and colleges, and for such occupations as publishing, communications research, and government or other public service. Additional specializations within the Graduate Program will become available to students who wish to pursue advanced study in any area. Students may enter the program leading to degrees in both the 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 the history department. Sixteen of these must be in two seminars or one seminar and one reading in one area. The seminar must be taken within the first two semesters of residence. Twelve semester hours 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 courses. The essay in the major division must be based on a reading in the major division 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 will be completed with 1:50 individual Study. Graduate, in which seminar will be continued under the guidance of the supervisor. In exceptional cases where the essay completed in semester is judged to be of outstanding quality, other courses may be substituted for 18:295.

Students who complete the M.A. under the thesis option may not become candidates for the doctorate in history. The M.A. candidate 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 8 semester hours in each of the two divisions of history. The program must also include at least 8 semester hours in each of the two divisions in history, or 6 hours in one other division in history and 6 hours in a related department. These hours must
assist individuals and families with their needs and problems.

Through study, understanding and use of dietetics, nutrition, 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 systems 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 family development: food and nutrition: home economics education: interior design, textile design, housing: 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, social work, and nutrition.

Is meeting the general requirements for the B.A. or B.S. degree of the College of Liberal Arts, students majoring in home economics need to select courses in another department which also are prerequisites for home economics courses.

All students majoring in home economics complete this core:

**17:10 Nutrition and Family Development and the Family** 3 s.h.

**17:12 Nutrition and Family Development and You** 3 s.h.

**17:50 Design for the Home** 3 s.h.

**17:80 Textiles for Consumers** 3 s.h.

**17:110 Management of Family Resources** 3 s.h.

**17:180 Seminar: Home Economics** 2 s.h.

**Bachelor of Arts**

**Family Development**

This program prepares students for careers with agencies and services concerned with the total family and its functions, including family life education, and for the extension service. The following courses are required:

**17:10 Growth and Development of the Young Child** 3 s.h.

**17:110 Adolescence and the Family** 3 s.h.

**17:108 Basic Aspects of Aging** 3 s.h.

**17:112 Personal Financial Management** 3 s.h.

**17:113 Marriage and Family Interaction** 3 s.h.

**17:114 Parent-Child Relationships** 3 s.h.

**17:115 Parent-Child Relationships in the Exceptional Family** 3 s.h.

**17:116 Directed Studies in Family Development** 3 s.h.

**17:122 Materials and Methods in Family Life Education** 3 s.h.

**31:1 Elementary Psychology** 3 s.h.

**34:1 Introduction to Sociology: Principles** 3 s.h.

**34:19 The Family in Various Societies** 3 s.h.

**24:161 The American Family** 3 s.h.

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:

**17:101 Food Study** 2 s.h.

**17:102 Food Study Laboratory** 2 s.h.

**17:103 Meal Management** 2 s.h.

**17:104 Experimental Food I** 3 s.h.

**17:105 Experimental Food II** 3 s.h.

**17:146 Nutrition Laboratory** 3 s.h.

**17:147 Nutrition** 3 s.h.

**4:13-14 Principles of Chemistry I** 6 s.h.

**4:16 Principles of Chemistry II** 12 s.h.

**4:121 Organic Chemistry I** 4 s.h.

**4:141 Intermediary Metabolism Laboratory** 3 s.h.

**61:10 General Microbiology** 4 s.h.

**22:100 Human Physiology** 4 s.h.

**91:110 Biochemistry** 3 s.h.

Electives should be selected from home economics and the natural sciences.

A concentration in nutrition with emphasis on dietetics requires:

**17:101 Food Study** 2 s.h.

**17:102 Food Study Laboratory** 2 s.h.

**17:103 Meal Management** 2 s.h.

**17:104 Experimental Food I** 3 s.h.

**17:105 Experimental Food II** 3 s.h.

**17:108 Food Service Systems Management** 3 s.h.

**17:146 Nutrition Laboratory** 3 s.h.

**17:147 Nutrition** 3 s.h.

**4:13-14 Principles of Chemistry I** 6 s.h.

**4:16 Principles of Chemistry II** 12 s.h.

**4:181 Organic Chemistry I** 3 s.h.

**32:110 Biochemistry** 9 s.h.

**36:1 Principles of Economics** 3 s.h.

**61:189 Personnel Management** 3 s.h.

**7:170 Educational Psychology and Measurement** 3 s.h.

**7:131 Educational Psychology** 3 s.h.

**34:1 Introduction to Sociology: Principles** 3 s.h.

**31:1 Elementary Psychology** 3 s.h.

**61:187 General Microbiology** 3 s.h.

**7:120 Human Physiology** 3 s.h.

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

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.

This program follows minimal academic requirements of the American Dietetic Association (ADA). All students applying for internships should have their programs centrally screened by the first semester of the senior year.

**Home Economics Education**

This program leads to certification and occupational approval in home economics. Graduates are qualified to teach home economics in vocational and nonvocational secondary schools, to work in home economics extension and other agricultural and 4H-club in nonschool settings. Required courses for this concentration are:

**17:31 Introductory Food Study** 2 s.h.

**17:131-132 Food Study, Food Study Laboratory** 4 s.h.

**17:112 Personal Financial Management** 3 s.h.

**17:113 Marriage and Family** 3 s.h.

**17:114 Parent-Child Relations** 3 s.h.

**17:121 Curriculum: Home Economics** 3 s.h.

**17:128 Evaluation: Home Economics** 2 s.h.

**17:133 Food Management** 2 s.h.

**17:185 House: Planning and Structural Design** 3 s.h.

**17:186 House: Social and Psychological Aspects** 3 s.h.

**17:170 Custom and Contemporary Tailoring** 3 s.h.

**17:171 Fitting Problems and Flat Pattern Design** 3 s.h.

**18:1 Elements of Art** 2-3 s.h.

**18:2 Elements of Art** 2-3 s.h.
Textile Science
This program prepares students for positions in the textile industry and for graduate study. In addition to courses listed for the B.A. degree in textiles technology, the following are required for the B.S. degree:
4/101 Elementary Quantitative Analysis 4 s.h.
4/121-122 Organic Chemistry I- II 8 s.h.
22M/23 Calculus I 4 s.h.
22M/26 Calculus II 4 s.h.
22M/28 Computational Laboratory for Calculus and Linear Algebra 4 s.h.
29 11-12 College Physics 8 s.h.
Elections 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 programs. Majors who are concentrating in family development; home economics education; interior design; textile design; housing; or textiles and clothing, and who meet the department's requirements, may apply to the department's cooperative education committee for participation in this program. Students register for 17.000 Cooperative Education Training Assignment in the fall of their work experience and for 17/195 Home Economics Internship during the subsequent semester.

Honors
To be eligible for honors, the student must have junior standing, 30 semester hours completed by the fall of their senior year, an overall cumulative grade-point average of 3.5 or above, a grade-point average of 3.2 or all home economics courses, and at least 12 semester hours completed in home economics. Honors work is designated by H or Honors Seminar in Home Economics and 17/192 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 Programs
The demand for well-qualified professional home economists for ex- ceeds the number of graduates with advanced degrees. The master's degree graduate may qualify for positions in colleges, secondary schools, business, industry or government.

The graduate program prepares students to obtain jobs through specialization in one of five subject areas: family development; food and nutrition; home economics education; interior design, textile design, housing; and textiles and clothing.

17/213 Theory in Family Development 3 s.h.
17/219 Research Problems in Family Studies 3 s.h.
17/250 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
Food and Nutrition
Graduate work in this program may emphasize food, nutrition, or nutrition education. Graduates qualify for positions in educational institutions, business, industry, government, and the health field. Applicants need background courses in food, nutrition, general and organic chemistry, mathematics, physics, and microbiology.

Courses required for the M.S. degree with specialization in food are:
17/134-135 Experimental Food I-II 8 s.h.
17/233 Seminar: Food 2 s.h.
17/239 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 Biochemistry 3 s.h.
61/167 General Microbiology 4 s.h.
A course in statistics 3 s.h.

Courses required for the M.S. degree with specialization in nutrition are:
17/134 Experimental Food I 3 s.h.
17/135 Experimental Food II 3 s.h.
17/148 Nutrition 3 s.h.
17/149 Nutrition Lab 1 s.h.
17/229 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.
A course in statistics 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 goals)
17/145 Advanced Nutrition 3 s.h.
17/146 Nutrition Laboratory 3 s.h.
17/239 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.
78/131 Educational Psychology 3 s.h.
99/130 Chemistry of Biological Materials 3 s.h.
A course in statistics 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 bachelor's degree. At least two of the courses outside the department shall be those desired by the student and three in the home economics option must be from the same department.

The program's course requirements are:
17:250 Seminar: Readings in Home Economics Education 2 s.h.
17:250 Seminar: Research Problems: Home Economics Education 4 s.h.
17:300 Seminar: Home Economics Research 2 s.h.
A course in statistics 3 s.h.
Another 200-level home economics course 2-5 s.h.

Interior Design, Textile Design, Housing
Graduate study in interior design, textile design, 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 which emphasizes the specialization the student intends to pursue prior to admission.

A variety of career opportunities are available to the M.A. graduate in interior design, textile design, housing. These include design teaching, interior design, textile design, home furnishing and retail, purchasing and positions in business and industry. Required courses (depending upon previous coursework) are:
17:250 Seminar: Design and Housing 2 s.h.
17:250 Seminar: Home Economics Research 2 s.h.
Courses in interior design specialization:
17:153 Interior Design: Principles and Practices 3 s.h.
17:154 Interior Design: Principles and Practices 3 s.h.
17:155 Survey of Historic Interiors 4 s.h.
17:156 Survey of Modern Interiors 2 s.h.
17:250 Seminar: Problems in Interior Design and Housing 2-4 s.h.
One course in art history 3 s.h.
One course in housing 3 s.h.
One course in textile design 3 s.h.
Courses for textile design specialization:
17:156 Survey of Modern Interiors 2 s.h.
or
17:156 Historic Textiles and Apparel 3 s.h.
17:160 Textile Design: Printing and Dyeing 3 s.h.
17:162 Textile Design: Weaving 3 s.h.
17:164 Textile Design: Forms and Fibers 3 s.h.
17:181 Textile Finishing, Dyeing and Dyeing Technology 3 s.h.
17:260 Studio Workshop in Fiber 4 s.h.
17:285 Advanced Textile Studio Problems 3 s.h.
Another course in textile design 3 s.h.
Two studio art courses 6 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 textile and clothing concentration are:
17:270 Research: Problems in Housing 3 s.h.
or
17:288 Research: Problems in Textiles 2 s.h.
17:300 Seminar: Home Economics Research 2 s.h.
A course in statistics 3 s.h.
Additional courses in textiles and clothing are required, based upon the student's educational background, professional needs, and career goals.

Master of Arts in Teaching
The M.A.T. program is designed for students with an undergraduate degree in home economics who have had the following education courses. The program is nonthesis and requires written and oral comprehensive examinations. Graduates obtain a home economics teacher's certificate with vocational approval.
Applicants must have a bachelor's degree in home economics and a 3.0 minimum undergraduate grade-point average, and must be admitted to the M.A.T. program in the College of Education.

The program requires 30 semester hours of graduate coursework in such areas as computer science and communication, education, human development, and special education. For certification, the student must have completed (at the undergraduate level) a course in American politics or American government and two courses in each of the following: housing and interior design, family development, food and nutrition, family economics and home management, and textiles and clothing.

Other courses required for the M.A.T. program are:
17:121 Curriculum: Home Economics 3 s.h.
17:128 Evaluation: Home Economics 3 s.h.
75:131 Educational Psychology 3 s.h.
75:125 Methods: Home Economics 3 s.h.
75:191-192 Observation and Laboratory Practice in the Secondary School 12 s.h.
75:127 History of Western Education 2 s.h.
or
75:117 Philosophy of Education 2 s.h.
75:170 Human Relations for the Classroom Teacher 3 s.h.

Certification-Only Program
Students with the B.A. or B.S. degree in home economics may enroll in the certification program in order to meet requirements for teaching vocational home economics in secondary schools. Courses for this program are selected according to the student's background and personal goals. See the "College of Education" section of the Catalog.

Financial Awards
Severe annual departmental awards recognize undergraduate students for their outstanding qualities and efforts. The Adaline M. Hoffman Writing Award is given to recognize excellent written work completed in home economics courses. The Family Book Award recognizes the sophomore home economics major with the highest grade-point average. The Margaret Foster Holt Award is a full lifetime tuition scholarship given to a student for his or her senior year. Four Hilah M. Chapterman Scholarships are awarded to undergraduate majors with financial need. The Myra Lee Sprangler Memorial Award is given to an outstanding home economics senior. Two awards are for graduate students. The Mary Campbell Tow Scholarship is given to a student beginning graduate study. The other scholarship is provided by the Iowa Home Economics Association. A limited number of scholarships are available to graduate students.

Courses

Primary for Undergraduates

17:400 Cooperative Education Training Assignment 0 s.h.
175 Home Development and the Family 3 s.h.
Introduction to in-home human development, special emphasis placed on care of the family.
181 Nutrition and Food Science ODM 3 s.h.
Study of the physical, cognitive, emotional, and social development of the young child. Emphasis on the relationships between children and families.
10:130 Legal and Ethical Issues in Communication 3 s.h.

Total 12 s.h.

After completing the 12 semester hours of foundation courses, students select one of three sequences outlined for the 30-semester-hour requirement in the final semester, all graduating seniors are required to take 10:185 Contemporary Issues and Problems in Mass Communication, for one semester hour of credit.

News-Editorial Sequence

This sequence is concerned with the gathering, organizing, and effective writing of news and other information from printed, human, and environmental sources. It also involves the processing, packaging, and display of news stories, editorials, and illustrations, for print and broadcast media. Courses provide opportunities for the development of the various technical skills required for work in the student’s choice of media. Career possibilities for students in this sequence include daily or community newspapers, magazines, broadcast journalism, public relations and other professional positions in the news media. The sequence is accredited by the Accrediting Council on Education in Journalism and Mass Communication (ACEJMC). These are the required journalism courses:

Foundation Courses

10:112 News Reporting and Writing 3 s.h.
10:114 News Processing 3 s.h.
10:174 Contemporary Issues and Problems in Mass Communication 1 s.h.
Journalism electives 6 s.h.
Total 30 s.h.

Maximum journalism credits allowed toward graduation: 36 semester hours.

Mass Communication Laboratory by Sequence

This sequence offers students an opportunity to develop proficiency as professional communicators who can identify and analyze problems that need research and develop and media products for solutions. Students in this sequence will complete research and conceptual courses within the context of their intellectual and media interests. Seniors in 10:181 Mass Communication Lab are formed into enterprises with the training and production of independent productions, or projects for clients in need of professional communication services. These projects may include script development, tape presentations, videotape productions, brochures and other publications. Career possibilities for students completing the sequence include working for public relations departments, advertising agencies, public information offices, independent production companies, as well as other print or broadcast journalists.

Foundation courses 12 s.h.
One reporting course, selected from:
10:112 News Reporting and Writing 3 s.h.
10:135 Broadcast Journalism 3 s.h.
10:138 Broadcast Journalism Workshop 3 s.h.
10:150 Photocommunication I 3 s.h.
10:159 Graphic Design and Production 3 s.h.
10:181 Mass Communication Lab 3 s.h.
Total 30 s.h.

Maximum journalism credits allowed toward graduation: 36 s.h.

Mass Communication Inquiry Sequence

This sequence emphasizes the acquisition of knowledge about communication and concentration on the study of communication as a way of comprehending society and human interaction. Students take courses which focus on technical, philosophical, and social cognitive modes of understanding. Career possibilities for students in this sequence include public relations, media research and public opinion polling, or other related careers. Many students will continue with graduate studies in journalism or mass communication or other disciplines. These are the required journalism courses:

Foundation Courses

10:174 Communication Research Methods 3 s.h.
One course, selected from:
10:159 Communication and Public Relations 3 s.h.
10:178 Mass Media and Society 3 s.h.
10:183 Special Topics in Communication 3 s.h.
Journalism electives 6 s.h.
10:185 Contemporary Issues and Problems in Mass Communication 1 s.h.
Total 30 s.h.

Maximum journalism credits allowed toward graduation: 36 s.h.

Two Degree Programs: B.A. and B.S. Degrees

B.A. Requirements

Four semester hours in foreign language; Foundation Courses; Sequence Courses;
10:185 Contemporary Issues and Problems in Mass Communication; Fulfillment of one of the school’s second areas of concentration requirement in one of two ways:

A full B.A. major in another department;
A 24 semester hour concentration beyond the general education level.
This concentration should be approved by the student and the student’s advisor.

B.S. Requirements

Two semesters of a foreign language; Foundation Courses;
Sequence Courses;
10:185 Contemporary Issues and Problems in Mass Communication; Six semester hours of social or natural science methods courses; Fulfillment of the school’s second areas of concentration requirement in one of two ways:

A full B.S. major in a natural or social science;
A 24 semester hour concentration in the natural or social sciences, beyond general education level. This concentration should be approved by the student and the student’s advisor.

Honors

Freshmen and upperclassmen with outstanding academic records may participate in the Honors Program. They are urged to see the departmental Honors Program advisor as soon as possible. After admission to the Honors Program, a student must fulfill these requirements:

Carry out additional work under the guidance of an instructor in the content of one of the advanced conceptual courses in journalism or mass communication;
Earn at least a 189 Honors Colloquium, 3 s.h.
Write an honors thesis under the supervision of a faculty member;
Make a formal presentation of honors work for a committee consisting of a faculty advisor, the coordinator of the Honors Program, and a third faculty member of the student’s choice.

Minor in Journalism

To meet the requirements for a minor in journalism and mass communication, a student must complete at least 15 semester hours in journalism and mass communication, 12 of which must be in the following courses:

10:191 Cultural and Historical Foundations of Communication 3 s.h.
10:193 Social Scientific Foundations of Communication 3 s.h.
10:110 Introduction to Journalism Writing 3 s.h.
10:130 Legal and Ethical Issues in Communication 3 s.h.
Transfer work in introductory courses will be considered toward the minor but must be approved by the School of Journalism and Mass Communication. No
Courses for the minor requirement may be taken pass-fail. A student must have at least a 2.0 grade-point average in the minor courses. At the time they apply for a degree, students must inform the Office of the Registrar of their desire to have a minor listed on their transcript.

Transfer Students
The school's policy is to accept transfer credits from another institution for up to, but not more than, 20 percent of the student's total number of credits toward a major in journalism at low. Other course work taken elsewhere might be applicable toward fulfilling elective and/or second area of non-major requirements. Any transfer credit intended to meet School of Journalism and Mass Communication requirements must be approved by the student's journalism adviser at low.

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 course work, the completion of a major student project, and the successful completion of the final examination. The specific requirements of each emphasis are listed below.

Professional Emphasis
This emphasis is intended for students seeking to improve their technical and analytical skills and broaden their understanding of the role and function of mass communication in contemporary society, but who do not plan to enliven to Ph.D. work.

Program requirements for students with no academic or professional experience in journalism and communication:
- 18020 Master's Seminar 3 s.h.
- 1911b News Reporting and Writing 3 s.h.
- (does not count toward M.A. degree)
- 19240 News Principles and Practice 4 s.h.
- 19245 Specialist: Reporting or Editing 3 s.h.
- 19181 Mass Communication Lab 3 s.h.
- 19181 option intended for students with special interest in public relations or organizational communication
- Electives 16-17 s.h.
- 19251 Master's Research 3 s.h.

Doctor of Philosophy
The Ph.D. program emphasizes interdisciplinary inquiry into mass communication phenomena within cultural and historic perspectives. Such perspectives imply that an understanding of these phenomena cannot arise solely out of narrowly focused analyses of present conditions. Rather, the approach emphasizes philosophical, evaluative, and critical inquiry into relationships between mass media and society across time and culture. The program's substantive nature is defined by the student's interests of its faculty, who tend most frequently to investigate historical, legal, social, and cross-cultural aspects of communication, both verbal and visual, and is organized in a series of courses and specializations.

The Ph.D. program is highly individualized. Drawing on the School of Journalism and Mass Communication and other academic units, each student develops a specific course of study that reflects his or her academic background, experience, professional goals, 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 Facilities
The School of Journalism and Mass Communication is housed in the three-story Communications Center. The center has special laboratories for photography, typographic, sound, lighting, editing, and print production including a printing press. Many students use the newsroom and other facilities of the award-winning University student newspaper, The Daily Iowan, housed in the John W. Davis Center. The school also has its own Research Center/Reading Room and gallery of faculty photography and project displays.

Financial Aid
In addition to teaching assistantships for graduate students, more than $200,000 in scholarships and financial aid is available to both undergraduates and graduate students. To determine eligibility, write for more information.
Laboratory tuition costs. Scholarship applications close April 1.

Registration
Current or former students of The University of Iowa, the University of Northern Iowa, and Iowa State University should ask their registrars for particulars. Students from other institutions must apply for admission to one of the three cooperating universities; each has a provisional admission policy for students who wish to register for summer work only.

Early registration is advisable. All applications should be submitted before May 1 for the following summer session.

Courses
Purification 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 annual Iowa Lakeside Laboratory bulletin); the following are representative.

IOWA LAKESIDE LABORATORY

Major Field Biology
Introduction to fieldwork in natural history of Iowa, emphasizing the ecology of distribution, signages, breeding season, plant-harvesting, and population; field and laboratory work, with research reading and discussion. For students majoring in biology and interested in field experience.

Iowa Aquatic Ecology
An introduction to Iowa's aquatic tribes, analysis of habitats, and characteristics of major aquatic vegetation; principles and methods related to water. The course is not technically demanding. For students with broad knowledge of biology, including some ecology, and some experience in aquatic ecosystems.

Iowa Aquatic Ecology Projects
Individual projects.

Iowa Forest Ecology
Ecological characterization and evolution of Iowa's deciduous forest, Tamarack forest, and tamarack-cypress. Individual study of the vegetation and major aspects of its biology.

Iowa's Aquatic and Terrestrial Ecosystems

Iowa Field Forestry
Structure, site, and soil characteristics; methods of collecting and identifying Iowa trees, general practices in field and laboratory; the ecology of Iowa forests; field identification and measurements; and the use of published and field data. For students interested in accelerated and advanced studies in botany and forestry.

Iowa Field Paleontology
Structure, site, and soil characteristics; methods of collecting and identifying Iowa trees, general practices in field and laboratory; the subfossil evidence of Iowa's natural history. For students with some knowledge of vertebrate anatomy and paleochemistry.

Iowa Field Zoology

Latin
See "Classics."
### Latin American Studies Program

**Coordinator:** Charles Hale

**Faculty:** Ricardo Lejarraga (Economics), Thomas Chapple (Anthropology), Oscar Fandeler (Spanish and Portuguese), Natasha Marshall (Spanish and Portuguese), Walter Rosei (Economics), Michael McDonald (Anthropology), Steve Bowers (Politics), Peter Stone (Political Science)

**Associated Faculty:** Emmanuel Contreras (Spanish and Portuguese), Hans Enghoff (Anthropology), Ruahn Frey (Spanish and Portuguese), Oscar Fandeler (Spanish and Portuguese), Duane Halaby (Anthropology), Ray Ramasa (Economics), Merio Santizo (Spanish and Portuguese)

**Assistant Professors:** Florence Bento (Anthropology/ Women's Studies), Michael Olimir (Anthropology), Thomas Lewis (Spanish and Portuguese), Jane Buckliot (Spanish and Portuguese), Serenon Mon (Political Science), Alfredo Parks (Anthropology), Christopher Roy (Art and Art History), Dona Veen (Spanish and Portuguese), Irene Whari (Spanish and Portuguese)

### Certificate Requirements

#### Primary Courses

To gain both depth and breadth of knowledge about Latin America and breadth in a variety of disciplines that deal with the area, students seeking the Certificate in Latin American Studies must complete at least 18 semester hours of credit in courses selected from the primary courses listed below, including at least 6 semester hours in each of at least two of the four primary 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 of related courses. These courses are listed in the course descriptions and are cross-listed with the related departments of Latin American or other related courses offered by the related departments and/or from other University courses approved by the student's Latin American Studies advisor.

### Senior Seminar

Seniors in the senior seminar course enroll in 113:132 Latin American Studies Seminar (same as 35:159 and 35:159), a 4-semester hour interdisciplinary course built around problems of specific interest to Latin America and taught by two faculty members from the primary departments.

### Overlapping Credits

While the certificate program requires 40 semester hours of course work, 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 6 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 listing in the appropriate departmental sections of the Catalog.

#### Anthropology

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>113:115</td>
<td>Ethnology of South America</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:118</td>
<td>Ethnology of Mesoamerica</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:118</td>
<td>Social Anthropology of the Caribbean</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:131</td>
<td>Latin American Economy and Society</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:132</td>
<td>Latin American Studies Seminar</td>
<td>3-4 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:133</td>
<td>Latin American Civilizations of Mesoamerica</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

#### History

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>18:185</td>
<td>Introduction to Colonial Latin America</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>18:186</td>
<td>Introduction to Modern Latin America</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>18:192</td>
<td>The Mexican Revolution</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

#### Political Science

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>20:144</td>
<td>Latin American Government</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:145</td>
<td>Major States of Latin America</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:153</td>
<td>Inter-American Relations</td>
<td>2-3 s.h.</td>
</tr>
</tbody>
</table>

### Portuguese

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>36:103</td>
<td>Modern Brazilian Fiction: Short Story</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:104</td>
<td>Modern Brazilian Fiction: Eastern Novel</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:105</td>
<td>Brazilian Literature I</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:106</td>
<td>Brazilian Literature II</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:109</td>
<td>Nineteenth-Century Brazilian Novel</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:115</td>
<td>Brazil: People and Culture</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:159</td>
<td>Latin American Studies Seminar</td>
<td>3-4 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

### Spanish

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>36:8</td>
<td>Contemporary Latin American Narrative</td>
<td>3 s.h.</td>
<td>(Same as 11:18, Taught in English)</td>
</tr>
<tr>
<td>36:100</td>
<td>Readings in Hispanic Literature</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:103</td>
<td>Contemporary Spanish American Fiction</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:104</td>
<td>Spanish American Poetry</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:105</td>
<td>Spanish American Drama</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:106</td>
<td>Short Story of Spanish America</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:107</td>
<td>Spanish American Literature of Fantasy</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:110</td>
<td>Survey of Pre-Columbian Spanish Literature</td>
<td>3 s.h.</td>
<td></td>
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<tr>
<td>36:112</td>
<td>Contemporary Latin American Novel and Short Story</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:115</td>
<td>Spanish American Civilization</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>36:159</td>
<td>Latin American Studies Seminar</td>
<td>3-4 s.h.</td>
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### Latin American Studies Related Courses

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>113:113</td>
<td>Africans in the New World</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:119</td>
<td>Urban Anthropology</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:147</td>
<td>Special Topics in Anthropology</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:151</td>
<td>Sociology of the Third World</td>
<td>3 s.h.</td>
<td>(Same as 34:151.)</td>
</tr>
<tr>
<td>113:159</td>
<td>Primitive Art</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:184</td>
<td>Comparative Prehistory</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>113:185</td>
<td>Race, Ethnicity, and International Relations</td>
<td>3 s.h.</td>
<td>(Same as 48:15.)</td>
</tr>
</tbody>
</table>

### Art and Art History

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>19:057</td>
<td>The Art of Tribal Cultures</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>19:105</td>
<td>Art of Pre-Columbian America</td>
<td>3 s.h.</td>
<td></td>
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### Economics

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>66:125</td>
<td>International Economics</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>66:127</td>
<td>Natural Resources in the World Economy</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>66:128</td>
<td>Economic Development: Underdeveloped Areas</td>
<td>3 s.h.</td>
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### Geography

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
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<tbody>
<tr>
<td>44:35</td>
<td>World Cities</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>44:182</td>
<td>The Third World</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>
Political Science
30:80 Introduction to World Politics 3 s.h.
Portuguese
39:120 Black Literature of Portuguese Expression 3 s.h.
(Crosslisted as 45:1150.)
39:118 Modern Portugal 3 s.h.
(Taught in English.)
39:120 Women, Language and Society of the Hispanic World 3 s.h.
Sociology
54:168 Economic and Political Development: Women's Roles 3 s.h.
Spanish
39:114 Spanish Civilization 3 s.h.
39:120 Contemporary Hispanic Arts and Letters 3 s.h.
39:125 Introduction to Bilingualism 3 s.h.
(Taught as 103:102.)
39:127 Chicano Puerto Rican Literature 3 s.h.
(Taught in English.)
39:130 Business Spanish 3 s.h.
39:133 Terminologies and Institutions of Hispanic Law: A Comparative Approach 3 s.h.
39:145 Chicano Language and Culture for Teachers 5 s.h.
(Taught in English and Spanish.)
39:150 Twentieth-Century Spanish Women Writers 3 s.h.

Library Science

Director: Col. Ogger

Associate Director: Martha Varela-Jacobs

Assistant Director: Linda A. Heape

Asst., Associate Professors: Terence Bottomley, Patrick Coyle, James A. Hiles, Patricia L. Kassner, Kathleen Ritterbush, Fred M. Strode

Instructors: Linda Blevins, Lila Bresnahan, Michael G. Devito, George Glick, Thomas Davis, Edward Fesperman

Affiliated Faculty: Dale M. Bennett, K.K. Metzker, Jerry Maynard

Degrees offered: M.A.

The School of Library Science offers a program of professional preparation for careers in all types of libraries and information centers—public, school, academic, and special. It seeks to recruit and prepare librarians and information professionals, to contribute to the advancement of librarianship through research, and to provide public service. The program is accredited by the American Library Association.

Program Goals and Objectives
The goals of the School of Library Science are:
To offer a graduate program of basic professional preparation in library and information science which reflects the variety and growth of information needs felt by society and individuals;
To engage in research that increases understanding of the variety of information needs and of the actions that can be taken to provide for those needs;
To provide public service through continuing education and consulting, and through association and cooperation with other professional organizations so that growth is fostered beyond the student's basic professional program, and that people have the information services they need;

Instructional Objectives
Upon completion of the program the student will be able to:

Demonstrate an understanding of the history and theory of librarianship sufficient to recognize their relationship to the role of the library in today's society, and the library's importance in the communication process;
Articulate a philosophy of librarianship which includes a commitment to intellectual freedom and to 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;
Demonstrate mastery of the techniques and procedures of effective information service (that is, the selection, acquisition, organization, storage, retrieval, and dissemination of information);
Demonstrate an appreciation for the contribution that reading, information, libraries, and lifelong learning can make to the richness of life, and the ability to convey that appreciation to others;
Identify and use bibliographic techniques and sources of information in a broad range of fields and media formats;
Articulate an understanding of management theory sufficient to plan library and information services and perform the professional responsibilities of resolving needs, setting goals, analyzing problems, formulating programs and evaluating results;
Critically evaluate research that helps in the advancement of the profession and critique and evaluate the contributions to librarianship made by related disciplines.

Plan for personal and professional career growth.

Research Objectives
To engage in research on library problems and areas related to library services 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 or which may have specific relevance to library service in the state of Iowa.

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 Iowa and surrounding areas.
To participate in professional organizations at local, state, regional, and national levels in the pursuit of common goals within the profession.

Undergraduate Study

Although there is no undergraduate major in library science, juniors and seniors may enroll in the introductory library science and children's literature courses (300-level) 21:00 credit. Internship is open to all undergraduates.

Master of Arts

Professional preparation for careers in all types of librarianship is provided by the school's Master of Arts program. The school also offers a graduate program for certification in school librarianship, as well as a certification program leading to the master's degree.

Graduate holds positions in public, school, academic, and special libraries, serving in such roles as administrators, bibliographers, catalogers, reference specialists, information scientists, and children's librarians.

The Master of Arts degree in library science requires 33 semester hours of graduate credit with a minimum grade-point average of 3.0. In addition, the student must pass a comprehensive examination.

Basic Plan of Study

The program consists of a core of required courses basic to all areas of librarianship, an additional required course in a type of library, and electives. The student's plan of study should be carefully developed in relationship to career objectives.
Core courses (required of all M.A. candidates) 12 a.h.
21:151 Reference I
21:153 Cataloging and Classification
21:155 Cataloging of Library Materials
21:321 Management of Libraries and Information Centers
Type-of-library course (one required) 3 a.h.
21:230 Special Libraries
21:231 The Public Library
21:232 The College and University Library
21:253 School Media Center Administration
Electives 18 a.h.

It is strongly recommended that the student's electives include a bibliography course and a course in information science.

Elective courses in other departments of the University must be shown to be an integral part of the student's preparation for library and information science. Although many disciplines other cultural and intellectual support to preparation for librarianship, they cannot be shown to warrant displacement of needed courses in a brief one-year program. Electives outside the department must be examined following admission to the School of Library Science, and shall not exceed six semester hours for students having no previous courses in library science, nine hours for those with such previous preparation. Only courses taken for graduate credit may be counted towards the thirty-hour requirement.

The thesis option is not intended to replace courses a student's basic preparation, is available if the student completes the full 33-hour program in addition to the thesis before or concurrently with the thesis. If the student cannot complete the thesis in the time, may elect the research option. The thesis, if elected, is to student to complete an independent study with a student and with independent study with a student's continuing education in library and information science.

The program normally requires two semesters and 12 a.h. of full-time study, or, in the case of students attending part-time, a minimum of four summer sessions. Maximum graduation is four years, 8 credit hours in academic sessions.

Public Library Work
Public library work provides opportunities for students to work in a regional or state-wide cooperative basis. The variety of services, materials, and organizational structures of public libraries make this area of librarianship a challenging one. A major concern of public librarians is to design innovative services programs to reach those segments of the population now unserved, as well as to provide a full range of services to all areas of the community. Management skills are often needed in these situations.

Required Courses
Core courses 12 a.h.
21:231 The Public Library 3 a.h.
Suggested Electives 18 a.h.
21:135 Library Services to Adults
21:323 Multi-Media Concepts in Libraries
21:246 Introduction to Information Science
21:246 Research Methods
21:251 Advanced Reference
21:252 Advanced Cataloging
21:253 Practical in Libraries Bibliography courses

Courses relating to service to children and young adults: 21:153 Literature for Children I
21:154 History of Children's Books
21:156 Literature and Storytelling for Children
21:162 Literature for Adolescents
21:234 Library Services to Children and Young Adults
7E:204 Literature for Children II

College and University Library Work
The academic library, whether in a community college or a university, provides information, education, and research services to students, faculty, and staff. Management or supervisory skill is often required. Special competencies such as a subject or language specialty or an activity specific to information systems are needed.

Required Courses
Core courses 12 a.h.
21:232 The College and University Library 3 a.h.
Suggested Electives 18 a.h.
21:246 Introduction to Information Science
21:248 Research Methods
21:251 Advanced Reference
21:252 Advanced Cataloging
21:255 Government Publications
21:256 Medical Librarianship and Bibliography
21:255 Law Librarianship, Bibliography, and Research Techniques
21:256 Practical in Libraries Bibliography courses
7E:171 The Community College

(required for lows endorsement 75 for work in community colleges)

Work in Special Libraries
Special librarianship includes careers in information centers serving banks, industrial firms, museums, historical societies, and law firms. The ability to design services suitable for the parent organization, and substantial knowledge in the relevant area are characteristics important in such a career. Indexing, abstracting, literature searching and analysis, design of information systems, translation, and current awareness services are more usually found in special library work than in more traditional libraries.

Required Courses
Core courses 12 a.h.
21:230 Special Libraries 3 a.h.
Suggested Electives 18 a.h.
21:232 The College and University Library
21:246 Introduction to Information Science
21:246 Research Methods
21:251 Advanced Reference
21:252 Advanced Cataloging
21:256 Government Publications
21:256 Medical Librarianship and Bibliography
21:265 Law Librarianship, Bibliography, and Research Techniques
21:256 Practical in Libraries Bibliography courses

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 instructional program, producing new materials, offering reading guidance, and providing reference service. Stet certification is required for a career as a librarian in elementary and secondary schools.

Required Courses
Core courses 12 a.h.
21:233 School Media Center Administration
21:232 School Media Center Practicum

Equivalent audiovisual coursework 3 a.h.
21:233 School Media Center Administration
21:232 School Media Center Practicum

Equivalent field experience 3 a.h.
Suggested Electives 12 a.h.
21:153 Literature for Children I
21:124 History of Children's Books
21:126 Literature and Storytelling for Children
Certification in School Librarianship

The school offers approved programs for state certification in these areas: school librarian for kindergartener through grade 12 (low endorsement 34); director of library services for kindergarten through grade 12 (low endorsement 51); and librarian/learning resources specialist in an area vocational school or community college (low endorsement 75).

Students who complete an M.A. degree with the program listed under "School Library Work" and who hold a valid teaching certificate at the elementary or secondary level will qualify for endorsements 34 and 51.

Endorsement 34 may also be earned without the M.A. degree by combining 20 hours of undergraduate and graduate course work approved by an adviser. In order to pursue such a non-degree program, however, a student must have been accepted for admission to the School of Library Science.

Endorsement 75 requires completion of the M.A. degree with the program listed under "College and University Library Work."

Joint Degree Programs

Joint degree programs between the School of Library Science and other units within the University have as their primary goal the integration of the two areas of study and the student's ability to contribute to one discipline the insights and knowledge of the other.

Although there is a mechanism by which departments may approve a joint program, the School of Library Science has established formal programs with the College of Law and the College of Business Administration. The student enrolled in such a joint program will work with an adviser in the School of Library Science to ensure the benefits of integration.

Objectives of a joint program will be consistent with the goals stated above, and as they will vary from student to student, will be a matter of advisement. For instance, a student who seeks a career in a law or business library would require a different sequence of courses than one attempting to study the legal aspects of librarianship or the management of the library as a complex organization. Yet another student may choose to seek the benefits a joint program could offer in records management and management information systems.

To enroll in a joint program the student must apply to and be accepted by the School of Library Science and the other unit chosen. Upon the completion of the M.A. or twelve hours to the J.D.

In no case can a student receive two degrees with fewer than 90 hours of graduate work, and joint programs would usually require substantially more than this.

Facilities and Resources

The School of Library Science is conveniently located in the south wing of the University's Main Library, providing facilities for the varied instructional and research activities of the school.

Media Lab and Darkroom

A media lab contains equipment and space for slide-tape production, videotape programming, super-8mm filmmaking, filmstrip production, 16mm film previewing, and simple film editing. A darkroom includes equipment for film developing, enlarging, and dry-mounting.

Computer Facilities

An online lab includes two CRT terminals, one printing terminal, and one portable terminal. They provide access to the University's Weeg Computing Center Prime system, to national bibliographic databases, and to OCLC, a national online library utility. Students, when taught, is various courses, to write programs on the Prime system, to conduct online information searching of databases, and to catalog, recall, and manipulate bibliographic records in the OCLC database.

Statewide Reference Service

The school serves as one unit of a state network of academic and public libraries. Students provide back-up reference service to libraries throughout the state, using learned skills to perform bibliographic verification and to answer reference questions. The service helps students reinforce and integrate classroom instruction and provides reference experience.

Departmental Library

The library science library, one of 12 departmental branches of the Main Library, is located on the school's quarter. The collection contains approximately ten thousand volumes and two hundred periodical titles related to the study or practice of library and information science. A portable computer terminal circulates, and carrels contain AV equipment for viewing library materials. Tables, carrels, and easy chairs allow a change of study format, and the atmosphere is casual and friendly.

University Libraries

All of the resources of the University Libraries are available to students and faculty of the school. The system contains more than two hundred million volumes in the main library and 12 departmental branches. An average of 90,000 volumes are acquired annually. The serials collection is extensive, with more than 22,000 current subscriptions. The third floor of the Main Library includes the government publications, map, and social sciences collections, as well as all bound periodicals. The location of the School of Library Science on this floor allows quick access to these frequently-used collections.

Other Libraries

Students have access to a variety of libraries through field trips, practicum experience, and personal use. The State Historical Society Library in Iowa City; the Iowa City and Cedar Rapids public and school libraries; the Coe, Cornell, and Grinnell college libraries; and the Herbert Hoover Presidential Library in West Branch. The Iowa City Public Library, located only four blocks from the Main Library, was one of the first public libraries to achieve full computerized cataloging, its service philosophy and contemporary management practices provide students with an innovative public library model.

Other Resources

Located across the street is the Student Library, houses the Learning Resources Center of the College of Education and the Weeg Computing Center. The reference center consists of the Video Lab, Computer Resources Lab, Audiovisual Production Lab, and Curriculum Resources Lab. The Curriculum Resources Lab contains an extensive collection of books and sound instructional materials for children in preschool through twelfth grade and is especially valuable for library science students interested in school or public library work.

Weeg Computing Center provides instructional and research computing facilities and services for the University community. All University students, staff, and faculty may use the Center's computers for University-related research, thesis preparation, and coursework. Each graduate student is provided with a small funded account by the Graduate College.
Faculty Advising
The School of Library Science has a low student-faculty ratio, a faculty advising system, and an atmosphere of friendly student-faculty interaction. Advising assignments are made when students enter the program, and students are encouraged to discuss career objectives and problems with other faculty members as well. The relatively small number of students in the school allows faculty members to get to know students personally and to take an interest in their professional development.

Student Activities
Students have a variety of activities available to aid in their academic and professional development. Conferences, short courses, workshops, seminars, field trips, and microconferences provide frequent exposure to contemporary developments in library and information science, as well as an opportunity to meet with practicing librarians from across the state and nation.

The Student Advisory Board serves as a liaison between students and faculty, to promote student activities and concerns. A member attends faculty meetings as a student representative. The group also organizes social activities for both students and faculty.

Placement
The school aids in the active placement assistance to its graduates by its means of bulletin board announcements, seminars on placement, and assistance in the placement of students, and personal counseling. The University's Employment Service aids in the placement of students through a weekly listing of job openings and provides a confidential file for graduates. All graduates find positions in all types of libraries. The placement distribution for the past five years was: public libraries 30 percent, school libraries 30 percent, academic libraries 32 percent, and special libraries 8 percent. Job opportunities in all types of libraries include librarianship, job flexibility, and geographic mobility are important factors in obtaining a position.

Admission
Scholastic requirements for admission to the M.A. program include:

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 85 semester hours of study in the liberal arts and sciences;

A combined verbal/quantitative score of 950 on the Graduate Record Examination (GRE) Aptitude Test.

Personal qualifications and aptitude for library work are assessed by means of letters of recommendation and a personal interview with the director of the school or the director's assistant, and another member of the faculty. In the case of extreme difficulty, an alternate interview may be made available to a student who has not already attended a school of professional studies.

Foreign students are encouraged to apply if they attain a score of 550 or higher on the Test of English as a Foreign Language (TOEFL). Persons with a GRE score of 1,050, scores that are considered for conditional admission with the understanding that they receive remedial assistance in English at the University.

Applicants are requested to write to the School of Library 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 by March 1 for the fall-semester consideration, October 1 for the spring semester, or February 1 for the summer session. The selection committee makes the selections two to three weeks after each deadline. Late applications will be considered if places are still available. Financial assistance, however, is often not available for late applicants.

Financial Assistance
The School of Library Science awards partial tuition 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 (4.0 scale) and combined verbal/quantitative scores of 1,050 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 3.0 grade-point average.

Prospective students are urged to apply for these awards before March 1.

Students interested in part-time employment should contact the libraries in the Iowa City area. Positions are usually available in the University Libraries.

Courses
1120 Information Handling 2 s.h.
1130 Information Handling 2 s.h.
1135 Information Handling 2 s.h.
1235 Information Handling 2 s.h.
1315 Information Handling 2 s.h.
1325 Information Handling 2 s.h.
1335 Information Handling 2 s.h.
1345 Information Handling 2 s.h.
1355 Information Handling 2 s.h.
1365 Information Handling 2 s.h.
1375 Information Handling 2 s.h.
1385 Information Handling 2 s.h.
1395 Information Handling 2 s.h.
1405 Information Handling 2 s.h.
1415 Information Handling 2 s.h.
1425 Information Handling 2 s.h.
1435 Information Handling 2 s.h.
1445 Information Handling 2 s.h.
1455 Information Handling 2 s.h.
1465 Information Handling 2 s.h.
1475 Information Handling 2 s.h.
1485 Information Handling 2 s.h.
1495 Information Handling 2 s.h.
1505 Information Handling 2 s.h.
1515 Information Handling 2 s.h.
1525 Information Handling 2 s.h.
1535 Information Handling 2 s.h.
1545 Information Handling 2 s.h.
1555 Information Handling 2 s.h.
1565 Information Handling 2 s.h.
1575 Information Handling 2 s.h.
1585 Information Handling 2 s.h.
1595 Information Handling 2 s.h.
Linguistics/LIBERAL ARTS

Prerequisites: 21:151-153 and 21:201, or consent of instructor.

21396 Library Seminar in Chinese and Young Adult
Adults 3 s.h.
Taught by: practice and theory of library service in a elementary school or public library. Offered alternate terms. Prerequisite: 21:151 or 21:153.

21398 Bibliography of the Humanities 3 s.h.
Special reference sources and evaluation aids in bibliographic, periodical, and other sources. Offered alternate terms. Prerequisite: 21:151 or 21:153.

21399 Bibliography of the Social Sciences 3 s.h.
Topics in bibliographic and research techniques in the social sciences including such areas as anthropology, economics, education, geography, history, political science, psychology, sociology, and related areas. Offered alternate terms. Prerequisite: 21:151.

21490 Bibliography of the Sciences 3 s.h.
Building and assessing collections in science and research techniques in evaluating sources, periodical and other aids; survey of major disciplines and their business. Offered alternate terms. Prerequisite: 21:151.

21499 Introduction to Information Science 3 s.h.
Characteristics and techniques of information science; concepts of information storage and retrieval; mechanization and automation of applications of information to libraries. Offered alternate terms.

25000 Research Methods 3 s.h.
Concepts and techniques of research in library and information sciences; emphasis on conducting and analyzing research projects. Offered alternate terms.

25116 Advanced Reference 3 s.h.
Concepts in reference service; philosophy, communication, bibliographic instruction, evaluation; students staff automated reference service; issues in automated cataloging, business and statistics. Prerequisite: 21:161.

25122 Advanced Cataloging 20 s.h.
Library of Congress classification and subject headings; basic elements of cataloging; special types of material, narcotics, fictional works and other administrative problems. Offered by arrangement for those interested in cataloging.

35000 Government Publications 3 s.h.
Federal and state; and local U.S. government publications, as well as United Nations and foreign publications; special problems of organizations and administration of different types of publications. Offered alternate terms.

35001 School Media Center Practice 3 s.h.
Supervision of a school media center. Observation, evaluation, instruction and student instruction and evaluation in selection and collection development sessions. Offered alternate terms. Prerequisite: 21:151-153 or 21:201, or consent of instructor.

35002 Medical Bibliography and Bibliometrics 3 s.h.
Topics of medical literature; characteristics of medical literature; organization and presentation of this material; evaluation and use of reference and bibliographic tools; current examination, current awareness. Offered spring semester. Prerequisites: 21:151-153 and 21:201, or consent of instructor.

35003 Law Library Bibliography, and Research Techniques 3 s.h.
Types of library literature; characteristics of law literature; selection and organization of materials; research techniques in legal research. Offered alternate terms. Prerequisites: 21:151 or 31001, or consent of instructor.

35004 Current Topics in Bibliometrics 3 s.h.
Investigation and analysis of contemporary issues and problems in library and information services.

35176 Workshops in Library Science 10 s.h.
Directed study of selected topics in library and information science. Prerequisite: 12 semester hours in library science, or consent of instructor.

21399 Individual Instruction in Library Science 1-6 s.h.
Prerequisite: consent of director.

Linguistics

Department chair: Gregory K. versus
Faculty: professors, lecturers, associates, John C. McNalley, Robert E. Woll, Catherine D. Rapp
associate professors, Ellen Bronmark, William A. Degree offered: B.A., M.A., Ph.D.

Linguistics is the science that studies the inner workings of human language.

There are many indicators that such preverbal exist in language. Children naturally learn to use their native language before they enter school, and without much direct instruction. People can speak and understand sentences they have never heard before. All languages have several ways of saying the same thing and all haveambiguities. All languages change through time. Damage to a particular part of the brain may be related to a particular type of linguistic problem, whatever the language. All languages are systems with some unique properties, some universal properties, and some properties shared with other languages which may or may not be historically related.

Linguistics is not attempt to learn many languages. Rather, they consider the languages of the world as data to be analyzed by common principles.

Linguistics is the science with many laboratories. A linguist's laboratory may consist of a library and pencil and tape. Another may consist of acoustical equipment. Others need computers. Some go into sandbox-related 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 relation between language variation and socioeconomic structure, or, of course, those who study language change, spend 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 for bilingual or native speakers. They may help design intelligence and achievement tests that measure or are used to evaluate people with linguistic disabilities.

Graduate Programs

Emphasis in all graduate programs is on theory and research. Students interested in nonuniversity careers may enroll in special courses in applied linguistics and other courses that are prerequisite to doctoral work or an M.A. in the following sequences.

Master of Arts

All students take a required set of core courses followed by comprehensive examinations in phonology and syntax.

Students choosing to write a thesis at least 6 semester hours in elective courses, exclusive of thesis hours, and may choose up to 3 semester hours of thesis credit (for a total of 36 semester hours). Students choosing to take a degree without thesis must complete a focused area (24-36 semester hours of elective courses) and take at least 9 semester hours of thesis credit. The course may either be designed in advance by the student (subject to departmental approval), or be one of a set of

Undergraduate Program

High scores on verbal, analytical, 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 be able to deal with formulas and abstract symbols.

Depending on their vocational goals, prospective linguistics majors should consider either majoring 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 meaning) and phonology (sound patterns). Elective courses in a variety of subdisciplines enable students to tailor the program to their own interests.

The major in linguistics requires 24 semester hours of work in the department. It includes a general introduction and courses in etymology, phonetics, phonology, and language history, as well as elective activity to be worked out in consultation with the undergraduate advisor.
For Undergraduates and Graduates

132/100 Introduction to Linguistics 3 h.
132/110 Language and Society 2–3 h.
132/116 Syntax and Semantics 3 h.
132/119 Introduction to Phonetics 3 h.
132/120 Introduction to Psycholinguistics 3 h.
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132/183 Introduction to Phonetics 3 h.
132/184 Introduction to Phonetics 3 h.
in one of the professions, or in the humanities and social sciences.

Courses In LSA are open to juniors, seniors, and graduate students from any department or college. Freshman and sophomore students may occasionally be admitted by approval of the instructors.

Courses are conducted by round-table discussion, in a small group of students with two or more faculty representing different departments and disciplinary perspectives. The topics of these courses engage the special contributions of particular disciplines while they focus on important problems of value and interest to all times. Reading lists are chosen from outstanding works of past and present.

The following are the specific requirements beyond the general education courses, for the B.A. in Literature, Science, and the Arts.

LSA 12 s.h.
Natural, social sciences 12 s.h.
Philosophy, religion, History 12 s.h.
Literature beyond general education requirements 12 s.h.
Fine arts 3 s.h.
Foreign language: one semester beyond second year (foreign language courses in the original language may also be used to satisfy the requirement in literature) 3 s.h.

Students considering an LSA major should decide on the end of the sophomore year.

Honors

Superior students who undertake a further program of independent study may earn the Bachelor of Arts degree "with honors." To be admitted as candidates for honors, the student must have the endorsement of the chair of the Interdisciplinary Program in Literature, Science, and the Arts. An honors student submits an honors project and takes an examination on a portion of the reading list, during the semester before graduation.

Courses

2151 The Penult of Happiness 3 s.h.
Transcendentalism in eighteenth and nineteenth-century literature, philosophy, science, and popular culture.

2152 Love in the Western World 3 s.h.
Sex and love, including its social, cultural, and historical development.

2153 Myth and Reason 3 s.h.
Myth and reason are social constructs that convey patterns of thought. Reading from Sophocles, Plato, Aristotle, Kant, and Nietzsche.

2154 The Good Society 3 s.h.
A study of the background and the potential of man's life in society, as seen in works by Plato, Nietzsche, Machiavelli, Shakespeare, Locke, Gibbon, Marx, recent fiction and nonfiction.

2155 Values in the Contemporary World 3 s.h.
Modern problems in definition and choice of values, examined within contemporary ethical theories and standards.

2221-168 Artificial Intelligence 4 s.h.

2221-169 Design and Analysis of Algorithms 4 s.h.

2221-170 Theory of Graphs 4 s.h.

2221-172 Introduction to Ordinary Differential Equations 4 s.h.

2221-174 Introduction to Partial Differential Equations 4 s.h.

2221-175 Foundations of Set Theory 4 s.h.

2221-176 Foundations of Logic 4 s.h.

2221-190 Continuum Mathematical Models 4 s.h.

2221-190 Elementary Topology I 4 s.h.

2221-191 Elementary Topology II 4 s.h.

2221-194 Introduction to Analysis I 4 s.h.

2221-198 Introduction to Analysis II 4 s.h.

2221-199 Complex Variables 4 s.h.

2221-201 Abstract Algebra I 4 s.h.

2221-212 Abstract Algebra II 4 s.h.

2221-210 Optimization Techniques 4 s.h.

2221-213 Matrix Theory 4 s.h.

2221-214 Discrete Mathematical Models 4 s.h.

2221-215 Theory of Graphs 4 s.h.

2221-216 Differential Geometry I 4 s.h.

2221-217 Differential Geometry II 4 s.h.

2221-218 Numerical Analysis: Nonlinear Equations and Unification Theory 4 s.h.

2221-220 Numerical Analysis: Applications and Programming Theory 4 s.h.

2221-222 Methods of Solutions of Boundary Value Problems 4 s.h.

2221-230 Introduction to Probability 4 s.h.

2221-244 Introduction to Mathematical Statistics I 4 s.h.

2221-245 Introduction to Mathematical Statistics II 4 s.h.

Division of Mathematical Sciences

Department of B.A., B.B., M.B., Ph.D.

Bachelor of Arts

Students must take at least seven additional approved courses from the division beyond one year of calculus (either 2221-25-26 Calculus I-Calculus II or 2221-35-36 Engineering Calculus I-Calculus II). Each of these seven courses must carry at least 2 semester hours of credit. Except for students electing the applied mathematical sciences option or those seeking a secondary teaching certificate, at least two of these seven courses must be chosen from the following list:

2221-118 Operating Systems and Concurrent Programming

2221-122 Advanced Computer Organization and Architecture

2221-123 Programming Language Foundations

2221-205 Data: Abstractions, Types, and Structures

2221-235 Introduction to Computer Science Theory

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 advisor will work out a program reflecting the student's interests. The requirements are flexible enough to accommodate changes in students' interests.
Suggested Programs

General
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 Computing with PASCAL, 22M:20 Elements of Group Theory, 22M:95 Fundamentals of Spaces and Functions, or 22M:103 Foundations of Set Theory, 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 PASCAL, courses in numerical analysis, applied statistics, and operations research.

Actuarial Science
The student who plans to enter the actuarial profession should be guided in course selection by the program of education and examinations carried on by the principal actuarial organizations.


Additional courses of direct professional interest to actuaries include 22S:183 Demography and Life Table Construction, 22S:184 Risk Theory, and 22S:185 W Henry of Pension Funding. Students are encouraged to take at least one course in computer science and a substantial portion of courses from the College of Business Administration. A student 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:50 Elements of Group Theory, 22M:105 Analysis for Applications, 22M:116 Introduction to Analysis I, 22M:129 Elementary Theory of Numbers, and 22M:150 Matrix 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:163 Introduction to Probability and 22S:164 Introduction to Mathematical Statistics I or 22S:130 Probability and Statistics are appropriate).

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 education majors are required to take the sequence 22M:25-26 Calculus I-II, 22M:37 introduction to Linear Algebra, 22M:50 Elements of Group Theory, 22M:56 Fundamental Properties of Spaces and Functions, and 22M:670 Foundations of Geometry. The student must substitute for any of these courses a 100-level course in the selected area. The student must take 22M:66 before taking 79:137, a course required for teaching certification in mathematics (see the College of Education and the section on Certification and certification requirements).


Pure Mathematics


Probability and Statistics

Students should also select one or two courses in computer science from 22C:7 Introduction to Computing with FORTRAN, 22C:17 Programming with PASCAL, 22C:18 Computer Organization and Assembly Language Programming, and one or two courses in mathematical analysis from 22M:55 Fundamental Properties of Spaces and Functions, 22M:106 Analysis for Applications, and 22M:110 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 list of Statistics numbered 100 and above, excluding 222:102.

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 he or she takes 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 course numbered 101 or above) or 225:103 or above, and
At least three additional quantitative courses from one department outside the division, or, at the advisor’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 advisors.

Transfer Students
Undergraduate transfer students in mathematics must see at least 9 semester hours of credit in Division of Mathematical Sciences courses beyond the first year of calculus or 22C:16 Introduction to Programming with PASCAL.

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:28 Calculus II, 22M:30 Elements of Group Theory and above (excluding 22M:80 Theory of Arithmetic and 22M:81 Geometry for Elementary Teachers), and 225:103 Introduction to the Design of Large 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 advisor 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: Ronald S. Johnson
Faculty: Ronald Johnson (Mathematics), Steven H. Strogatz (Economics), Donald A. Ball (Engineering), Jan A. C rotates (Mathematics), G. Barry Worthington (Mathematics), Victor V. Kac (Physics), Stevan G. Miler (Physics), Donald R. Luedecke (Engineering), Vladimir Osher (Mathematics)
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 applications; 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 industry 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, 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 to enable the student to gain necessary background knowledge in the area of science in which the student will work on his or her thesis research. A comprehensive examination over this course work will be given after approximately two to three years in the program following that, the student will complete a research thesis on a mathematical topic from his or her area of scientific interest.

Fellowships, graduate tuition scholarships, and some research and teaching assistantships are available to qualified applicants. Applications for these appointments should be received before March 1 for the fall semester. Further application forms and further information about the academic year, which is written to the Chairman, Program in Applied Mathematical Sciences, Graduate College, The University of Iowa, Iowa City, Iowa 52242.

Courses

22C:27 Introduction to Applied Mathematical Science

22C:30 Reading and Research

Preparatory course advise:...

Computer Science

Department chair: Theodore S. Galanakis
Faculty: professors David A. Ahl, Daniel L. Eppe, Arthur C. Flash
associate professors Robert J. Beker, Hakobdza V. Shu, Sahil Shabbal, Theodore S. Galanakis
assistant professors Adriana Dodsak, Tony Ford, Douglas W. Jones, Christopher D. Martin, Roger K. Brilli

Degree offered: B.S., B.S. in Computer Science, M.S., Ph.D.

Pre-Computer Science

Entrants desiring who desire to become computer science majors are given the designation of pre-computer science until they have met the requirements of entry into the computer science major.

These requirements are:

An overall grade-point average of 2.25 or better
Completion of the four courses listed below (or their equivalents by transfer) with a grade-point average of 2.0 or better and a minimum of grade of C in each:

22C:16 Introduction to Programming with Pascal

22C:17 Programming with Pascal

22C:18 Computer Organization and Assembly Language Programming

Bachelor of Arts

Undergraduate students majoring in computer science need a strong background in mathematics and in programming languages and computer systems. For the B.A. degree, these computer science core courses are required:

22M:50 Calculus I

22M:50 Calculus II
Bachelor of Science

For the B.S. degree, the student must take two additional courses (each having at least 3 semester hours' credit) in the Division of Mathematical Sciences. The Undergraduate Handbook, available at the Division of Mathematical Sciences office, includes information on elective programs, information concerning credit by examination for the computer science core requirements, and other information.

Minor

For a minor in computer science, a student must complete 18 semester hours in computer science courses, including 12 semester hours taken from among:

- 200-level courses with permission of the advisor

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.

Course requirements for the doctorate include:

- 200-level courses
- Three additional graduate-level courses
- Approved courses outside of computer science

Total 30 s.h.

Outside courses must be selected to support the student's career objectives and must be approved by the student's advisor.
to take certain additional courses to cover the deficiency.

Doctor of Philosophy

Most of the recent graduates of the

Philosophy

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Elementary Topics of General Interest

These courses are not open to graduate students except by special arrangement with the instructor. All courses listed are offered in the spring semester, except where otherwise noted.

Course Number | Title | Prerequisites
--- | --- | ---
238:30 | Elements of Group Theory | Undergraduate: Upper Division
238:25 | Functions of Several Variables | Undergraduate: Upper Division
238:20 | Functions of Several Variables | Undergraduate: Upper Division
238:15 | Functions of Several Variables | Undergraduate: Upper Division
238:10 | Functions of Several Variables | Undergraduate: Upper Division
238:05 | Calculus for Business, Economics, and Social Science | Undergraduate: Upper Division
238:01 | Calculus for Business, Economics, and Social Science | Undergraduate: Upper Division
238:00 | Calculus for Business, Economics, and Social Science | Undergraduate: Upper Division

Undergraduate: Upper Division

238:20 | Introduction to Partial Differential Equations | Partial differential equations, linear algebra, real analysis, and measure theory.
238:15 | Introduction to Partial Differential Equations | Partial differential equations, linear algebra, real analysis, and measure theory.
238:10 | Introduction to Partial Differential Equations | Partial differential equations, linear algebra, real analysis, and measure theory.
238:05 | Introduction to Partial Differential Equations | Partial differential equations, linear algebra, real analysis, and measure theory.
238:00 | Introduction to Partial Differential Equations | Partial differential equations, linear algebra, real analysis, and measure theory.

Mathematics/LIBERAL ARTS 145
22C:3 Introduction to Programming with PASCAL
22M:25-26 Calculus III
22M:27 Introduction to Linear Algebra
22M:28 Calculus IV
225:153 Introduction to Probability
225:154 Introduction to Mathematical Statistics I
225:135 Actuarial Principles of Life Insurance
225:177 Numerical Analysis for Actuarial Students
225:180-182 Actuarial Theory II
225:141-184 Principles of Econometrics
An approved course in operations research
At least 3 from the following:
6A:1 Introduction to Financial Accounting
6F:102 General Insurance
6M:102 Introduction to Marketing
6L:47 Introduction to Law
6L:100 Administrative Management
Suggested additional courses:
225:183 Demography and Life Table Construction
225:184 Risk Theory
225:185 Theory of Pension Funding
6F:121 Property and Liability Insurance
6F:122 Life and Health Insurance

Applied Statistics
This program is designed to prepare the student for a career in applied statistics or for graduate study in applied statistics or another discipline that incorporates statistical tools. The required courses in the program are:
22C:7 Introduction to Computing for Business or 22C:7 Introduction to Programming with PASCAL
22M:35-26 Calculus III
22M:27 Introduction to Linear Algebra
22M:28 Calculus IV
225:153 Introduction to Probability
225:154 Introduction to Mathematical Statistics
225:163 Nonparametric Statistical Methods
225:168 Analysis and Design of Experiments
225:177 Biostatistical Computation and Consulting
and at least two of the following:
225:103 Introduction to the Design of Sample Surveys
225:183 Applied Time Series Analysis
225:181 Application of Multivariate Statistical Techniques
225:183 Nonparametric Statistical Methods
225:187 Introduction to Biochemical Processes
225:188 Analysis and Design of Experiments
Students in this program are expected to take at least two non-introductory courses in each area in which statistics is applied, for example geography, business, or science.

Mathematical Statistics
This program is designed to prepare students for graduate study in statistics. The required courses in the program are:
22M:25-26 Calculus III
22M:27 Introduction to Linear Algebra
22M:28 Calculus IV
22M:36 Fundamental Properties of Spaces and Functions
22M:115 Introduction to Analysis I
225:153 Introduction to Probability
225:154-155 Introduction to Mathematical Statistics I
and at least two from the following:
225:156 Applied Time Series Analysis
225:158 Analysis and Design of Experiments I
225:162 Regression Analysis
225:167 Introduction to Stochastic Processes
Students are encouraged to learn a programming language and to take at least four courses in some area where Statistics is an important tool (Economics, Psychology, ...).

Master of Science
Each M.S. candidate will have a committee of three members, who will have the responsibility of recommending action on the candidate's degree. For nonthesis programs, the committee's recommendation is usually based on two two-hour written exams 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 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
225:181-182 Actuarial Theory I-III
225:177 Numerical Analysis for Actuaries
225:297 Seminar: Actuarial Theory
At least three courses from:
225:183 Demography and Life Table Construction
225:184 Risk Theory
225:185 Theory of Pension Funding
An approved course in operations research
The 225:153-154 requirement will be waived only if the student has passed Part Two of the Examinations of the Society of Actuaries.

Theoretical Statistics and Probability
(with or without thesis)
225:116 Introduction to Analysis I
225:153 Introduction to Probability
225:154 Introduction to Mathematical Statistics I
225:157 Introduction to Stochastic Processes
At least two of these:
225:172 Topics in Statistics
225:230 Introduction to the Theory of Nonparametric Statistics
225:234 Theory of Statistics II
225:255 Linear Models
225:258 Multivariate Analysis
225:284-285 Theory of Probability II

Applied Statistics
(with or without thesis)
225:153 Introduction to Probability
225:154 Introduction to Mathematical Statistics I
225:156 Analysis and Design of Experiments I
225:162 Regression Analysis
225:173 Statistical Computation and Consulting
At least two of these:
225:133 Quality Control, Reliability, and Engineering Statistics
225:136 Bayesian Statistics I
225:181 Application of Multivariate Statistical Techniques
225:186 Analysis and Design of Experiments II
At least two of these:
225:133 Quality Control, Reliability, and Engineering Statistics
225:136 Bayesian Statistics I
225:181 Application of Multivariate Statistical Techniques
225:230 Analysis of Categorical Data
225:234 Introduction to the Theory of Nonparametric Statistics
225:239 Bayesian Statistics II
225:255 Linear Models
225:259 Multivariate Analysis
225:170 Numerical Analysis: Nonlinear Equations and Approximation Theory
The remainder of the program will consist of selections from the above lists or other courses approved by the advisor.
Experience in a computer language (PL/I or FORTRAN) is required. If the student satisfies the requirement by taking a course, that course may not be counted toward the M.S. semester-hour requirement.
The applied statistics program is designed to be flexible, so that a student may concentrate on one or an area of application in addition to the required statistics courses.


Programs oriented towards other applied areas are also possible. For a general program in applied statistics (without area of application), most students should take courses in the Department of Statistics. The student should consult closely with his or her advisor in designing a program of study tailored to the student's specific interests. If the student's interest is in a particular statistical area and it is strong, a program in another department may be more appropriate; for example, educational measurement and statistics (education), operations research (industrial and management engineering), and biostatistics (preparatory medicine and environmental health).

Applied Statistics (with Thesis)

Experience in a computer language (PL/1 or FORTRAN) is required. If the student satisfies the requirement by taking a course, that course may not be counted toward the M.S. semester hour requirement. The typcial 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 statistical method. It generally requires 3 semester hours of 225:191 Individual Study for two semesters.

Doctor of Philosophy
To satisfy the course requirements for a Ph.D. in statistics, a student must successfully complete:
At least two of the following:
At least five of the following:

*It is recommended that students take 225:173, for at least two hours' credit, in two different semesters.

In addition, each semester a graduate student is registered for six or more credit hours, the student's registration must include at least one course of at least two hours' credit offered by the Department of Statistics, other than 225:191 Individual Study, 225:197 Readings in Statistics, and Actuarial Science, or 225:299 Research Reading.

During the graduate program, students may wish to take course work or seminars in other departments for the achievement of certain auxiliary goals of the doctoral degree—in relation to their or her 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 expecting 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, 225:154-156 Introduction to Mathematical Statistics I-II, and 225:182 Regression Analysis. Students taking the examination may only attempt it once. The student requests a comprehensive examination on any portion of the course work in his or her approved plan of study, typically near the end of the third year.

The student must achieve at least a 3.5 grade-point average on completed courses in the plan of study. A program which does not conform to the requirements specified but which is of high excellence may be approved by the department chair.

Special Features
Because statistics are often teamed with other scientists in research projects, it is important that students gain additional related efforts. In several courses, the department tries to provide such experience. In addition, the department houses the Statistical Consulting Center, which offers
Microbiology

Department plan: living in P. Crawford
Degree offered: B.S., B.S., M.D.

Microbiology is concerned with the identification, structure, and activities of bacteria, fungi, viruses, and other microorganisms. It also includes immunology, a discipline dealing with the response of humans and animals to foreign materials.

Microbiology involves the study of the distribution of microorganisms in nature, their relationships to each other and to other living things, their beneficial and harmful effects on humans, animals, and plants, and the physical and chemical changes they produce in the environment.

At branches of the science—general microbiology, food and dairy microbiology, soil microbiology, plant microbiology, water and sewage microbiology, medical and veterinary microbiology, dental microbiology, immunology, pharmacology, marine microbiology, and geomicrobiology—have expanded rapidly in recent years and offer rewarding career opportunities to qualified persons.

For the graduate with a bachelor's degree in microbiology, research positions are available in government, hospital, public health and industrial control laboratories. Students who continue beyond the bachelor's degree have career opportunities in industry, government laboratories, 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 majors, and to guide them into 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 retain a B.S. degree, no more than 14 semester hours of special problems (61:181) taken in Microbiology may count toward this requirement. Students desiring to apply for certification by the National Registry of Microbiologists are required to earn 70 semester hours of credit in biology, 20 semester hours of which must be in microbiology. Certification is required for employment or advancement in some areas. Except under unusual circumstances and with the consent of the advisor, mathematics and science 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:

4-1: Principles of Chemistry I 3 s.h.
4-2: Principles of Chemistry II 3 s.h.
4-16: Principles of 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.
4-141: Intermediate Chemistry Laboratory I 2 s.h.
256:15 Mathematics for the Biological Sciences 4 s.h.
or
256:20 Elementary Functions 3 s.h.

For 1: General Chemistry 4 s.h.
37:5:3 Principles of Animal Biology 5 s.h.
61:157 General Microbiology 4 s.h.
95:120 The Chemistry of Biological Materials 3 s.h.
95:120 Metabolism 3 s.h.

Honors Program

Open to seniors with a grade-point average of at least 3.00 in general and a 3.2 in microbiology courses, the Honors program in microbiology involves taking 20 semester hours of coursework in microbiology, including 8 semester hours in 61:171:172 Honors Microbiology. These courses are designed to provide an introduction to experimental research. At the end of the research, the student presents a written report. A student successfully completing these requirements receives the B.S. degree with honors.

Graduate Study, Faculty Roster, Courses

See "The College of Medicine" section of the Catalog.

Military Science

(Army ROTC)

Department Head: Lieutenant Colonel Michael J. Butters

Faculty: professor Vahid A. Kerimian (Lieutenant Colonel), professor Dale E. Vugel (Major), William R. Section (Captain) with graduate assistants Joseph D. Hines (DPF), Richard A. Chesney (DPF)

The Department of Military Science is the academic unit administering the Army Reserve Officers Training Corps (ROTC) program at The University of Iowa. Participation in the program is voluntary. Courses in the program carry credit applicable toward a degree.
The ROTC Basic Course for freshmen and sophomores provides academic instruction in the fundamentals of leadership and management plus an introduction to the military role of the American society and current military organization and capabilities. Military history is highlighted in tracing the development of military principles and doctrines utilized in modern military operations and organizations.

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. Practical instruction in developing individual leadership skills is emphasized. Between the junior and senior years, students attend a six-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 as an active duty or with the National Guard or U.S. Army Reserve near their home. 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 leadership training program. Both courses may qualify for the advanced course by taking the Commission in the National Guard or Military Organization and Operation.

Credit For Prior Training

Students with prior military training or experience may qualify for Basic Course credit by allowing entrance into the Advanced Course. Prior service personnel are eligible for commission placement within the ROTC program and are eligible for commission within two years.

Although the full Army ROTC program normally requires approximately two years, it can be completed in two, three, or four academic years, with departmental approval.

Graduate School

Students commissioned as lieutenants upon graduation from The University of Iowa may apply for a delay of active duty to attend graduate school. No academic year is required for active duty for such delays. Delays of up to three years are allowed during medical, dental, and law schools are normally granted.

Special Programs

The Black Barons is a traditional organization, engaging in intercollegiate military skills competition. The department also supports a small-bore rifle team that takes part in national competition. Cadets compete for individual spirit and national titles for leadership, academic achievement, athleticism, and military proficiency. The department sponsors military-oriented parades and social activities.

In addition to the above, including the annual military ball, a formal dinner called Cadet Corps Dinner-gala, and an awards ceremony.

Special Facilities

The department uses several areas near Iowa City for practical and fun demanding and military skills training. It uses a variety of equipment, such as helicopters and rifles, in practical leadership exercises and in support of Field Training Exercises.

Leadership and training courses at the Basic Camp, Cadetorang, Rock Island Arsenal, Bishop Lionel Corps of Engineers District, and Camp Dodge, near Des Moines, are given by the Army operations and training programs. Annual leadership and training courses are given by the leadership department and the Leadership Institute.

Financial Aid

Reserve Officers Training Corps scholarships award tuition, books, laboratory fees, and a 100-125-per-month, full-time student base allowance. These opportunities are available to high school seniors and students enrolled in military science courses. Three-, two-, and one-year scholarships are also available. Scholarships are a valuable service obligation of four years.

All cadets in the second-year course receive a 100-per-month, tax-free education allowance. Cadets attending summer camps are paid while there and receive travel allowances. Students are supplied with books for University classes taught by military faculty and uniforms for training exercises. Veterans continue to draw both the ROTC allowance and any GI Bill benefits to which they are entitled.

Non-traditional advanced course students also may participate in the Student Veterans Membership Program (SVM) with the U.S. Army Reserve or National Guard. SVM cadets earn approximately $2,000-2,500 a month and serve as officer trainees in guard and reserve units in the local area while attending the University.

Courses

2301 Introduction to the Military 1-2 hr.

This course provides an overview of the role of the military in American society and its function for American democracy. It includes an examination of the National Guard, organization of the Department of Defense, current doctrine strategy, and an introduction to leadership and management models to be developed further in other courses.

2302 Foundations of Military Government 1 hr.

A systematic approach to military organization with emphasis on the U.S. Army, including logistics and personnel functions. It examines the structure and role of the military in society. Cadets are familiar with the history and organization of the U.S. Army, as well as the role of the Reserve Component, the National Guard, and the components of the management/leadership instruction offered in 2301.

2310 Military Strategy and Tactics 1 hr.

An overview of American military history area World War I with respect to the principles of war as outlined by Clausewitz and Tuchman. Instruction also includes the development of leadership and influence of key military personnel.

2406 Tactical Military Analysis 1 hr.

Introduction to small and tactical military leadership responsibilities, emphasized in individual and team-oriented tactics. Cadets receive instruction in the development, evaluation, and employment of leadership in small groups highlighting.

2410 Fundamentals of Military Organization and Operation 4 hrs.

A detailed course covering the practical aspects of courses 2301, 2302, 2303, and 2304.

13-14 Field Unit Leadership 1 hr.

Introduction to organizational leadership with emphasis on principles and general leadership. The development of leadership in small groups. Instruction includes the development of leadership in small groups.

2301 Leadership and Management of Military Organizations 4 hrs.

Introduction to leadership and management of military organizations. Emphasis is placed on the development of leadership skills and the management of military organizations.

2317 Principles of Military Operations 2 hrs.

Introduction to principles of military planning and preparation of operations. Cadets are introduced to military planning concepts and techniques. Cadets analyze and prepare plans using computer-based software.

13-14 Law and Operations 2 hrs.

Emphasis is placed on management in large-scale military organizations, including instruction in military law and policy, international law, and the use of legal resources. Cadets are introduced to international law, law of armed conflict, and the use of legal resources.

2318 Administrative Management 2 hrs.

Introduction to the development of leadership and management instruction related to the module of leadership and management instruction. Cadets are introduced to the development of leadership and management instruction and the role of leadership in the military and society.

Museum Training

Department chair and curator: George B. Schuppner, Ph.D. Collection manager: George B. Schuppner, Ph.D.

Department chair and curator: George B. Schuppner, Ph.D. Collection manager: George B. Schuppner, Ph.D.

This department offers courses which provide a fundamental background for the historical foundations of science museums, exhibit theory and design, preparation techniques, and general museum operational procedures. Courses have been offered continuously since 1910; 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 field is expanding, and the University of Iowa occupies a position of responsibility as director, curator, and exhibit specialist.
museum throughout the United States and Canada.

A major in one of the natural science disciplines (biology, geology, or botany), anthropology, or general science is recommended for students preparing for museum careers. Collections are offered during the annual spring-summer session as well as during the regular academic year. These evening college courses cost two-thirds the B.A. or B.S. degree.

For graduate work, museum courses may be credited as part of a minor concentration on a master's degree in anthropology or science education, or a Ph.D. degree in science education. Inquiries regarding program details should be directed to the appropriate minor department.

Courses
All registration by consent of instructor.

24:10 Museum Techniques 3 s.h.

Collection, cataloging, exhibiting, including research for museum, classroom teaching, or museum work. May be repeated.

24:15 Museum Conservation 3 s.h.

Conservation of the past but may be taken as independent study. May be repeated.

24:18 Museum Ethics and Law 2 s.h.

Aesthetic study of the ethical and legal responsibilities of museum. Readings and case analysis. May be repeated.

24:19 Museum Education and Design 2 s.h.

Preparation of a course in educational and social studies, and the value of museum in the community.

24:20 Special Reading and Project Science 3 s.h.

Advanced reading in historical development, educational philosophy, and role in modern society of museum in general. Directed-study individuals' museum projects.

24:30 Museum Library 3 s.h.

Preparatory special course for individuals' museum and the conservatorship.

Undergraduate Programs

Music
School director: Martin Donofrio
Assistant director: John D. Hill
Music/LIBERAL ARTS

25:149 Analysis of Music Literature, 1750-1825 3 s.h.
25:155 Analysis of Music Literature, 1825-1900 3 s.h.
25:158 Analysis of Music Literature, 1900-Present 3 s.h.
25:159 Analysis of Music Literature, Special Topics 3 s.h.
25:185 Keyboard Harmony 3 s.h.
25:212 Gregorian Chant 3 s.h.
25:215 2 Fugue 3 s.h.
Four years of applied music

Participation in a major ensemble each semester of residence. During the summer term, students shall be available for ensemble participation as needed. Ensemble assignments are made at the discretion of the major teacher and ensemble director. String majors shall participate in University Orchestras and in Stringsor Chamber Orchestra. Keyboard majors may substitute accompanying in place of major ensemble participation for two semesters during their junior and/or senior years, with the consent of their advisor. Any request for adjustment of this requirement shall be submitted in writing to a review committee consisting of the ensemble directors involved, the adviser, the major teacher, and a representative from the Director’s Office. This committee will meet regularly at the beginning of each academic year.

Major Ensembles
25:156 University Band - Concert Band - University Band, 25:181 University Chorale - University Singers
The student may take advanced electives in performance (including chamber music and private instruction in music, accompanying), theory, composition, music education, music history, and literature, orchestration, and conducting.

Music History Major
In addition to the general requirements for the Bachelor of Arts degree, Music majors must complete 30 semester hours in music history. An upper-division thesis in music history is required. A senior thesis replaces the final required of applied music major and will include a paper that demonstrates the student’s ability to conduct research in music.

Music Education
Areas of concentration in music education are instrumental music, vocal music, music therapy, and music education. In addition to the B.A. or B.M. requirements in music education, coursework is required to teach music in Iowa schools. Requirements for the area of concentration. Requirements in the instrumental and vocal areas are listed below.

String Majors
You are a student who wishes to complete an instrumental or vocal music major. You must complete a paper that demonstrates the student’s ability to conduct research in music.

Music Theory
Admission to the program in music theory is based on demonstrated minimum keyboard skills and successful completion of 25:149 Orientation to Music Theory. The number of students admitted to the program is limited by the number of opportunities available to students. This program is designed to prepare students for graduate study in music theory and composition. The program emphasizes the development of analytical skills and the ability to think critically about music.

Vocal/Keyboard Majors
The ear training component of the Vocal/Keyboard major is designed to develop aural skills and the ability to perform music in a group setting. The program emphasizes the development of analytical skills and the ability to think critically about music.

Music Therapy
Admission to the program in music therapy is based on demonstrated minimum keyboard skills and successful completion of 25:149 Orientation to Music Therapy. The number of students admitted to the program is limited by the number of opportunities available to students. This program is designed to prepare students for graduate study in music therapy and composition. The program emphasizes the development of analytical skills and the ability to think critically about music.
available in the music education office. Course requirements for the major in music therapy are:

25:94 Music Therapy Practicum 1-3 s.h.
25:95 Experimental Music 2 s.h.
25:97 Advanced Theory and Technique 2 s.h.
75:149 Microcomputer Theory 2 s.h.
75:149 Behavioral Research in Music 3 s.h.
25:136 Music Therapy Techniques 3 s.h.
25:138 Music Therapy Techniques: Adult Therapy 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 end of the sophomore year. Upon application for admission to the program, the candidate will be assigned a faculty adviser, in consultation with whom a course of study leading to the degree will be determined. Admission is based on achievement in composition and/or theory.

Keyboard proficiency and recital attendance requirements are those of the B.M. degree; course requirements are those of the B.M. degree plus an additional eight semester hours of theory courses.

The thesis replaces the senior recital required of all music majors, and consists of one or more original compositions, approved by the Composition/Theory faculty and performed on regularly scheduled School of Music recitals, and/or a faculty-approved scholarly paper dealing with theoretical issues.

Until admitted to the Composition/Theory Program, the candidate must take private lessons on his or her major instrument or voice. Following admission, the student undertakes applied music study as recommended by the adviser.

Ensemble participation is required of the B.M. candidate.

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 may qualify for graduation "with honors" by completing satisfactorily from 8 to 16 semester hours in 25:97 Honors in Music. Types of honors projects for which credit is given in 25:97 are honors performances, solo and/or ensemble; honors compositions, orchestrations, arrangements; and honors studies, research papers, editions, translations, etc. A combination of at least two of these types of projects is required. None of the projects may duplicate another 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 course work in music theory, music history, and languages is 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 Admissions 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 or the two days (excluding Sunday) before registration. A leaflet describing the general content of the examination may be obtained from the director's office, School of Music. For general graduate admission, degree, and examination requirements, see the "Graduate College" section of the Catalog.

Theory Minor

Candidates for graduate degrees in music may elect a minor in music theory by completing the following courses:

25:145 Colloquial Music Forms 3 s.h.
25:147 Total Forms (unless exempt by advisory exam) 3 s.h.
25:234 Observation and Practice Teaching in Theory 1.5 s.h.
25:236 Methods and Techniques of Teaching Basic Theory 3 s.h.
plus two courses from the following:
25:148 Analysis of Music Lit 1600-1750
25:149 Analysis of Music Lit 1750-1855
25:150 Analysis of Music Lit 1855-1900
25:151 Analysis of Music Lit 1900-Present
25:152 Analysis of Music Lit Special Topics

Master of Arts

The Master of Arts with thesis is offered in the areas of performance (including conducting), composition, music theory, and musicology. The Master of Arts without thesis is offered in the areas of music education and instrumental or vocal pedagogy (including conducting). 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 curricula must include the requirements listed below.

General

25:232 Introduction to Graduate Study in Music

Music Theory

25:144 Colloquial Forms or 25:147 Total Forms

One elective in analysis of music literature (25:148-163) or equivalent

If exempted from either 25:144 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 take only 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 II or equivalent, or satisfactory advisory examination.

If exempted from 25:301 and/or 25:302 as a result of the advisory examination, the student should select another course from the music history sequence 25:303-314, 25:318-317, 25:333, 25:330-332, and may elect other musicology courses.

Ensemble Participation

Students shall participate in a major ensemble each semester of residence (see previous list of the major ensembles). During the summer term, students shall be available for ensemble participation as needed. Ensemble assignments are made at the discretion of the major teacher and the ensemble director. Keyboard majors may substitute accompaniment for participation in a major ensemble, at their adviser's discretion. Theory, composition, musicology, and music education majors may, with their adviser's permission, substitute other ensembles. Any requests for adjustment of this requirement must be submitted in writing to a reviewing committee consisting of the ensemble directors involved, the adviser, the major teacher, and a representative from the Director's Office. This committee will meet regularly at the end of each early registration period.
Music/LIBERAL ARTS

Admission
Before an applicant will be considered for admission, he or she must have submitted all required materials in his or her indicated area of concentration, as follows:

Composition—representative musical scores
Theory—analyses or research papers
Music education—no materials required
Performance (including conducting)—audition
Musicology—research papers, theses
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 aspiration ability in the areas of composition, instrumental or vocal performance, conducting, and opera theater direction. 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 oral 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 listed under the M.A. degree
- One or more additional electives from the studies analytical sequence 26:149-152 or equivalent
- One or more additional courses in the history of music chosen from those listed in the master's degree requirements 25:280 Music of Sound and Music or equivalent
- Reading proficiency in at least one foreign language (must be completed before comprehensive examination); music education students may substitute the courses in statistics for the requirement; and
- Dissertation

Doctoral students shall be available for participation in a major ensemble during each term of registration unless excused by their advisers (see previous list of major ensembles). During the summer term, students shall be available for ensemble participation as needed, keyboard major students for additional accompaniment in place of a major ensemble, at the discretion of their advisers.

Doctor of Philosophy
Areas of concentration for the Ph.D. include composition, musicology, music education, music theory, and music literature.

The music literature program is designed for students who have already achieved a professional level of musical performance. The student is required to present a thesis in his or her major performance area.

Information about specific admission and curricular requirements for each area is available from the director's office.

Doctor of Musical Arts
Requirements for the D.M.A. degree in performance and pedagogy are the general doctoral requirements of the school, except that the D.M.A. dissertation consists of three full-length recitals or two recitals and a concerto performance with orchestra or other appropriate ensemble. Vociellas may substitute the execution of one or more major works 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 write 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—analyses or research papers
Music education—research papers
Music literature—research papers and autobiography
Performance (including conducting)—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 in the School of Music.

Music for Nonmajors
Courses particularly recommended for students who are not majoring in music but have an academic interest in it include 11:39-40 Masterpieces of Music; 26:158 Late Eighteenth- and Nineteenth-Century Composers; 26:160 Early Eighteenth- and Twentieth-Century Composers; the sequence 26:103-104 World Music I and II for students interested in non-Western music; and 25:0 Fundamentals of Music. 26:154 Beginning Guitar is available for nonmajors who wish to develop elementary performance skills for personal musical growth and enjoyment.

Participation in School of Music ensembles is open to all university students with the ensemble director's approval (see orchestra list of major ensembles).

Nonmajors interested in performance should consult music advisors regarding appropriate courses in applied music.

Special Programs
The Center for New Music provides an environment for innovative composition and a vehicle for the performance of new works. Its repertoire includes the works of little-known young composers and works using electronically produced sounds, as well as compositions by recognized modern composers.

The Center for the New Performing Arts is an interdisciplinary unit linking the University's schools of music and film and its dance, theater, and creative writing areas. The center's basic purpose is to encourage talented young artists to develop their creative skills through opera, multimedia, and new media classes, projects, and performances.

Facilities
The University of Iowa Center for the Arts has one of the nation's finest teaching and practice facilities in music. In addition to class and seminar rooms, the music building includes 55 teaching studios, 73 practice rooms, a large library, two electronic music laboratories, an audio training and listening facilities with 50 teaching posts, four large rehearsal halls, ample solo and ensemble practice facilities, professional recording facilities, a fine arts computer studio with six terminals, eight practice and recital organs, and the 750-seat Capp Auditorium. Herberger Auditorium seats 2,650 people for concerts, 3,400 for opera, and other stage productions.

Library resources include more than 80,000 volumes of books and periodicals, more than 2,100 issues of a microfilm, a microfiche file in approximately 300 titles, nearly 6,000 Lp records, and 175 periodicals in several languages. The music department gives particular attention to a strong reference collection emphasizing resources for musical research and performance. The library's quarters in the Music Building provide 24 study carrels, a microreader room, all floor reading rooms, a new books room, a large reading area, and a separate area for the Golden Key
Library, one of the world’s most famous collections of bad music.

Courses

Primarily for Undergraduates

Theory and Composition

25.1 Literature and Theory
- 3.0h
Lecture, writing, and short skills: codification of music and fundamentals of harmony, Counterpoint 201.

25.2 Literature and Theory II
- 3.0h
Construction of 25.1. Counterpoint 202, 204.

25.3 Art Skills I
- 1.0h

25.4 Art Skills II
- 1.0h

25.5 Literature and Theory III
- 3.0h
Harmonic, contrapuntal, and tonal practices from seventeenth century to present. Prerequisites: 25.2 and 25.4. Counterpoint 203.

25.6 Literature and Theory IV
- 3.0h
Continuation of 25.5. A prerequisite. Counterpoint 206.

25.7 Art Skills III
- 1.0h

25.8 Art Skills IV
- 1.0h

25.16 Fundamentals of Music
- 3.0h
Musical notation: elementary melodic, rhythmic, and harmonic theory; basic aural skills; for students with little or no previous experience. Open to music majors.

25.11 Recent Theory
- 1.0h

25.12 Fundamentals of Music
- 3.0h

25.16 Integrated Composition
- 3.0h
Prerequisite: 25.2.

History and Research

25.15 Historical Music and Art: 1800-World War I
- 3.0h
Prerequisites: for music majors, 25.5 and 25.6 or equivalent; for non-music, consent of instructor.

25.16 History of Music II
- 3.0h
Construction of 25.15, but may be taken as an independent unit. Prerequisite: 25.15 or 25.6.

25.16 Undergraduate Seminar
- 1.0h
Interactive study of how music is experienced, communicating both orally and in written form. Prerequisites: 25.16 or consent of instructor.

25.36 Masterpieces of Vocal Music
- 3.0h

25.37 Basic Music in Jazz
- 1.0h
May be repeated.

25.36c Aspects of American Popular and Folk Art
- 1.0h

25.38 Survey of Opera
- 0.5h

Courses for Undergraduates and Graduates

Music Education

Other music education courses are offered by the divisions of Elementary Education and Secondary Education in the College of Education. See those sections of the Catalog for listings and descriptions. Where such data are indicated, students preparing for music teacher certification should register under the education number.

25.17 Group Instruction in Music
- 1.0h
Beginning instruction for music majors whose individual participation is rated as an orchestra or band-experienced; study includes development of skills in sight reading, technique, harmonization, transcription, improvisation, and simple literature.

25.37 Group Instruction in Music
- 1.0h
Elementary in early intermediate techniques in music minors, whose proficiency performance ratings in an orchestra or band-experienced. Study includes development of skills introduced in 25.17; training of easy solos and ensemble literature. Prerequisites: 25.7 or 25.37 for proficiency examination.

25.39 Group Instruction in Music II
- 1.0h
Interdisciplinary instruction for music majors whose proficient performance rating is in an orchestra or band; instrumental combination of skills introduced in 25.17; study of ensemble solos and ensemble literature. Prerequisites: 25.39 or 25.7 for proficiency examination.

25.34 Basic Theory Primer
- 1.0h

25.35 Basic Theory Primer II
- 1.0h

25.36 Basic Theory Primer III
- 1.0h

25.37 Advanced Conducting
- 3.0h
Prerequisite: elementary conducting skills. Consent of instructor.

25.38 Advanced Conducting II
- 3.0h
Advanced pedagogy for precollegiate instrumental conductors. Open to undergraduates with consent of instructor.

25.39 Recording Techniques
- 3.0h
Prerequisite: consent of instructor.

25.40 Special Topics in Music Theory
- 3.0h
Individual research on special problems in music theory. May be repeated. Prerequisite: consent of instructor.

Theory and Composition

25.15 Literature and Theory
- 3.0h
Writing and analysis. Prerequisites: 25.1, 25.11, or equivalent.

25.16 Literature and Theory
- 3.0h
Prerequisite: 25.1, 25.11, or equivalent.

25.16b Literature and Theory
- 3.0h
Prerequisite: 25.1, 25.11, or equivalent.

25.16b Literature and Theory
- 3.0h
Prerequisite: 25.1, 25.11, or equivalent.

25.16c Literature and Theory
- 3.0h
Prerequisites: 25.1 and 25.11, or equivalent.

25.16f Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16g Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16h Literature and Theory
- 3.0h
Prerequisites: 25.1 and 25.11, or equivalent.

25.16i Literature and Theory
- 3.0h
Prerequisites: 25.1 and 25.11, or equivalent.

25.16j Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16k Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16l Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16m Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16n Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16o Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16p Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16q Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16r Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16s Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16t Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16u Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16v Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16w Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16x Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16y Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16z Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16aa Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16ab Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16ac Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16ad Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16ae Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16af Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16ag Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.

25.16ah Literature and Theory
- 3.0h
Prerequisites: 25.1, 25.11, or equivalent.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
</table>

**Ensembles**

No fee is charged for ensemble courses. Prerequisite: consent of instructor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25:110</td>
<td>Chamber Music</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:120</td>
<td>Symphony Orchestra</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:130</td>
<td>Wind Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:140</td>
<td>Jazz Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:150</td>
<td>Opera Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:160</td>
<td>Musical Theatre</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:170</td>
<td>Dance Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:180</td>
<td>Drama Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:190</td>
<td>Film Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:200</td>
<td>Video Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
<tr>
<td>25:210</td>
<td>Multimedia Ensemble</td>
<td>3</td>
<td>Ensemble for five to eight voices.</td>
</tr>
</tbody>
</table>

**Minor Field (open to nonmajors)**

Students may elect two applied music courses in the same semester and be assessed a $50 fee. All music majors are expected to attend seminars of the applied music courses for which they register.

- **25:110** Choir
- **25:120** Orchestra
- **25:130** Wind Ensemble
- **25:140** Jazz Ensemble
- **25:150** Opera Ensemble
- **25:160** Musical Theatre
- **25:170** Dance Ensemble
- **25:180** Drama Ensemble
- **25:190** Film Ensemble
- **25:200** Video Ensemble
- **25:210** Multimedia Ensemble

Students electing two applied music courses in the same semester are assessed a $50 fee. All music majors are expected to attend seminars of the applied music courses for which they register.

- **25:120** Choir
- **25:130** Orchestra
- **25:140** Wind Ensemble
- **25:150** Opera Ensemble
- **25:160** Musical Theatre
- **25:170** Dance Ensemble
- **25:180** Drama Ensemble
- **25:190** Film Ensemble
- **25:200** Video Ensemble
- **25:210** Multimedia Ensemble
Nuclear Medicine Technology

See "Division of Associated Medical Sciences" in the "College of Medicine" section of the Catalog.

Philosophy

Department chair: Leo Kofske

Faculty: professors Laura Kibler, Mary Driscoll, Pamela Blanken, Philip Catronio, Melba Sears professors associate professors Susan Bergman, Josephine Overholser, Janet Wolfe, Richard Franks associate professors Christopher Leblanc, Phyllis Nussen

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

Undergraduate Program

The undergraduate program in philosophy is designed to impart knowledge of the fundamental issues and the main developments in Western philosophy while strengthening the logical and analytical skills of the student. A major in philosophy is advisable preparation for graduate or professional study in many fields (religion, law, and so forth) and for any position in government, education, or business that require a general education and a capacity for clear and systematic thinking. Advanced degree work is necessary for a college teaching position in psychology.

Bachelor of Arts

The Bachelor of Arts degree requires a minimum of 27 semester hours of credit in philosophy numbered from 26:102 to 26:190, and must include:

26:103 Introduction to Symbolic Logic
26:111 Ancient Philosophy and either
26:115 Seventeenth-Century Philosophy or
26:116 Eighteenth-Century Philosophy

At least the final 12 semester hours of philosophy coursework that are used to complete these experimental requirements must be taken at The University of Iowa. An undergraduate major in philosophy is excused from a semester hour of the Liberal Arts general education requirement in basic-factual perspectives.

Honors

The department administers an honors program for undergraduate students of superior ability. A grade point average of at least 3.50 is required for admission to the program. A student who is interested in the program should consult the advisor for undergraduate majors in philosophy.

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. The student must pass an oral final examination. There is no foreign language requirement.

Doctor of Philosophy

The Doctor of Philosophy degree requires a minimum of 72 semester hours of graduate credit by the time the dissertation is finished. Candidacy for the doctoral program is determined by a formal vote of the entire faculty of the department, after the student has completed three semesters of graduate study in residence.

Requirements include courses in metaphysics and epistemology, history of philosophy, logic and philosophy of science, and ethics. The student must also pass a written comprehensive examination consisting of a dissertation a-rea examination, a special area examination, and a prospectus of the dissertation. The comprehensive examination may be taken only after the student has shown competence in French, German, Greek, or Latin.

Courses

Undergraduate Only

26:111 Ancient Philosophy (3)
26:115 Seventeenth-Century Philosophy (3)
26:116 Eighteenth-Century Philosophy (3)
At least the final 12 semester hours of philosophy coursework that are used to complete these experimental requirements must be taken at The University of Iowa. An undergraduate major in philosophy is excused from a semester hour of the Liberal Arts general education requirement in basic-factual perspectives.

26:120 Introduction to Symbolic Logic (3)
26:111 Ancient Philosophy (3)
26:115 Seventeenth-Century Philosophy (3)
26:116 Eighteenth-Century Philosophy (3)
At least the final 12 semester hours of philosophy coursework that are used to complete these experimental requirements must be taken at The University of Iowa. An undergraduate major in philosophy is excused from a semester hour of the Liberal Arts general education requirement in basic-factual perspectives.
Physical Education—Field House

Department chair: Dana W. Acroy

Chair, Health and Physical Education: Mary E. Proulx

Assistant chairs: Brenda J. Reilly, Robert R. Martin, Diane R. Reardon

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

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, and 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 a.h.

27:11 Introduction to Physical Education 2 a.h.

27:21-22 Teaching of Recreational Sports 4 a.h.

27:31 Teaching of Gymnastics 2 a.h.

27:32-33 Swimming 4 a.h.

27:32-33 Human Anatomy 4 a.h.

27:50 First Aid 2 a.h.

27:51 Introduction to Athletic Coaching 2 a.h.

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27:32-33 Swimming 4 a.h.

27:32-33 Human Anatomy 4 a.h.

27:50 First Aid 2 a.h.

27:51 Introduction to Athletic Coaching 2 a.h.

27:87 Leadership Training 1 a.h.

27:103 Administration of Physical Education and Athletics 3 a.h.

27:105 Adapted Physical Education 2 a.h.

27:107 Biomechanics of Physical Education 3 a.h.

27:108 Teaching Motor Skills 3 a.h.

27:120 Modern Physical Education Programs 4 a.h.

27:141 Elementary Education 2 a.h.

27:147 Knowledge and Performance Tests in Physical Education 2 a.h.

27:120 Human Physiology 4 a.h.

28:143 Contemporary Issues of Health Education 3 a.h.

The program also requires one of these seven coaching courses:

27:32 Coaching of Gymnastics 2 a.h.

27:33 Coaching of Football 2 a.h.

27:34 Coaching of Baseball 2 a.h.

27:30 Coaching of Track and Field Athletics 2 a.h.

27:36 Coaching of Basketball 2 a.h.

27:38 Coaching of Competitive Swimming 2 a.h.

27:39 Coaching of Wrestling 2 a.h.

These courses are required for teaching certification in physical education:

75:71 Growth and Motor Development 1 a.h.

75:73 Methods and Materials in Elementary School Physical Education 2 a.h.

27:27 Teaching of Dance 2 a.h.

75:75 Educational Psychology and Development 3 a.h.

75:91 Pre-Education Practicum 1 a.h.

75:92 Interscholastic School Physical Education 2 a.h.

27:51 Methods in Secondary Physical Education 3 a.h.

75:10 Relationships for the Classroom Teacher 3 a.h.

75:16-C Curriculum and Student Teaching 3 a.h.

75:18 Observation and Laboratory Practice in the Secondary School 4 a.h.

75:19 Laboratory Practice in Elementary Education 4 a.h.

Bachelor of Science in Physical Education (Alternative Career)

The Bachelor of Science degree program in physical education includes courses in business to prepare students for leadership roles in sports clubs, health agencies, YMCA-YWCAs, commercial recreation, and industries in which physical fitness of employees is important. Students are also prepared for private enterprise, such as the active supervision of a sporting goods store.

Program requirements include:

10:21-22 Physical Education Skills 8 a.h.

27:103 Administration of Physical Education and Athletics 3 a.h.

27:105 Adapted Physical Education 2 a.h.

27:107 Biomechanics of Physical Education 3 a.h.

27:108 Teaching Motor Skills 3 a.h.

27:120 Modern Physical Education Programs 4 a.h.

27:141 Elementary Education 2 a.h.

27:147 Knowledge and Performance Tests in Physical Education 2 a.h.

27:120 Human Physiology 4 a.h.

28:143 Contemporary Issues of Health Education 3 a.h.

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27:32 Coaching of Gymnastics 2 a.h.

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27:34 Coaching of Baseball 2 a.h.

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27:36 Coaching of Basketball 2 a.h.

27:38 Coaching of Competitive Swimming 2 a.h.

27:39 Coaching of Wrestling 2 a.h.

These courses are required for teaching certification in physical education:

75:71 Growth and Motor Development 1 a.h.

75:73 Methods and Materials in Elementary School Physical Education 2 a.h.

27:27 Teaching of Dance 2 a.h.

75:75 Educational Psychology and Development 3 a.h.

75:91 Pre-Education Practicum 1 a.h.

75:92 Interscholastic School Physical Education 2 a.h.

27:51 Methods in Secondary Physical Education 3 a.h.

75:10 Relationships for the Classroom Teacher 3 a.h.

75:16-C Curriculum and Student Teaching 3 a.h.

75:18 Observation and Laboratory Practice in the Secondary School 4 a.h.

75:19 Laboratory Practice in Elementary Education 4 a.h.
commercial potential, such as archery, badminton, billiards, bowling, canoeing, cycling, dancing, jogging, new games, physical fitness, racquetball, self-defense, scuba, snow skiing, table tennis, tennis, or weight training, and includes at least one activity that involves a trip and 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 or
27:37 Teaching of Swimming 2 s.h.
27:53 Human Anatomy 2-3 s.h.
27:58 First Aid 0 s.h.
or
Red Cross Standard First Aid Card
Cardiopulmonary Resuscitation Certification
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.
27:108 Teaching Motor Skills 3 s.h.
27:141 Elementary Exercise Physiology 2 s.h.

College of Business Administration
Course work for students wishing to concentrate their studies in business administration. This course work is particularly designed for students planning to enter business school for advanced study.

27:40 Leadership Training I 1 s.h.
27:58 Practicum in Special Physical Education 3 s.h.
27:103 Administration of Physical Education and Athletics 3-5 s.h.
27:147 Knowledge and Performance Tests in Physical Education 2 s.h.
28:142 Contemporary Issues of Health Education 3 s.h.
7C:189 Counseling for Related Professions 2-3 s.h.
17E:71 Growth and Motor Development 2 s.h.
7P:106 Child Development 3 s.h.
7P:193 The Adolescent and Young Adult 10 s.h.
31:19 Psychology in Business and Industry 3 s.h.
31:168 Psychology in Management 3 s.h.
7:130 Drug: Their Nature, Action, and Use 2 s.h.
19:158 Communication and Public Relations 3 s.h.

The department also recommends that the student earn certification as an exercise science teacher at American College of Sports Medicine.

Bachelor of Arts
The precollegiate 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, biochemistry, or evaluation and aesthetics.

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 advance study in the area in which the student is interested.

Because the student need not meet certification requirements for teaching in the public schools, the curriculum offers considerable latitude in the choice of electives to fit individual interests and needs.

Required laboratory courses:
- 41:14 Principles of Chemistry Laboratory I 2 s.h.
- 41:21 Organic Chemistry I 3 s.h.
- Mathematics through Calculus 3-5 s.h.
- 28:112 College Physics 8 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-II 4 s.h.
- 27:53 Human Anatomy - 2-3 s.h.
- 27:97 Leadership Training I 1 s.h.
- 27:105 Adapted Physical Education 2 s.h.
- 27:107 Biomechanics of Physical Education 3 s.h.
- 27:108 Teaching Motor Skills 3 s.h.
- 72:100 Human Physiology 2 s.h.
- 72:502 Exercise Physiology 2 s.h.
- 77:305 Physiology of Exercise Laboratory 2 s.h.
- 90:500 The Chemistry of Biological Materials 3 s.h.
- 99:150 Metabolism 3 s.h.

Minor in Physical Education
The minor requires completion of 18 semester hours from the following courses:
- 27:56 Special Projects 1-3 s.h.
- 27:102 Issues and Trends in Physical Education and Athletics 3 s.h.
- 27:109 Administration of Physical Education and Athletics 2-3 s.h.
- 72:107 Biomechanics of Physical Education 2-3 s.h.
- 27:108 Teaching Motor Skills 5 s.h.

27:137 School Physical Education Programs 2-3 s.h.
27:141 Elementary Exercise Physiology 2 s.h.
27:149 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 level requires satisfactory completion of the following courses:
- 27:53 Human Anatomy 2-3 s.h.
- 27:58 First Aid 0 s.h.
- 27:57 Introduction to Athletic Training 2 s.h.
- 27:59 Coaching of sport of interest

27:133 Administration of Physical Education and Athletics 2-5 s.h.
27:103 Biomechanics of Physical Education 5 s.h.
27:108 Teaching Motor Skills 2 s.h.
27:141 Elementary Exercise Physiology 2 s.h.
155:192 Observation and Laboratory Practice in the Secondary School
**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 athletic trainers at the postsecondary level, that is, the secondary school level as a part of their regular teaching, and for the college and university level. The requirements designed to meet the endorsement certification set by the National Athletic Trainers Association include:
- 17:41 Food, Nutrition, and You 3 s.h.
- 31:1 Elementary Psychology 4 s.h.
- 72:153 Human Anatomy 2 s.h.
- 28:142 Contemporary Issues of Health Education 3 s.h.
- 27:53 Human Anatomy 2-3 s.h.
- 27:58 First Aid (or equivalent) 2 s.h.

Cardiopulmonary Resuscitation Certification
27:37 Introduction to Athletic Training 2 s.h.
27:105 Adapted Physical Education 2 s.h.
27:141 Elementary Exercise Physiology 2 s.h.
27:108 Teaching Motor Skills 3 s.h.
27:107 Administration of Physical Education and Athletics 3 s.h.
Graduate Programs

Master of Arts without Thesis

The program leading to the M.A. degree without thesis is designed as a terminal unit of advanced study for teachers of basic physical education and for athletics coaches. Emphasis is placed on the application of research findings to the organization, teaching, and evaluation of basic physical education programs for all students in schools and colleges, and to the coaching of intercollegiate 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 advancement to M.A. program in physical education:

- Human anatomy 2 s.h.
- Human physiology 3 s.h.
- Paracutaneous injury (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 techniques 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, beginning 27:301 Non-thesis Seminar and at least one course from each of these three groups:

Group I

- 27:105 Adapted Physical Education 2 s.h.

Group II

- 27:245 Supervision of Physical Education 3 s.h.
- 27:257 Public School Curriculum in Physical Education 3 s.h.
- 27:258 Human Perceptual-motor Performance 3-4 s.h.
- 27:148 Psychology of Sport 3 s.h.
- 27:157 Biomechanics of Athletics 3 s.h.
- 27:241 Scientific Principles of Physical Conditioning 3 s.h.

Master of Arts with Thesis

The thesis program leading to the M.A. degree in physical education is designed primarily as a first step in graduate study leading to the doctorate. Its secondary purpose is to provide advanced preparation for people who are teaching or intend to teach in undergraduate physical education programs at four-year colleges, but who do not plan to earn doctorates.

The thesis program for the M.A. degree in physical education puts particular emphasis on techniques of research and on problems relating to physical education and athletics. Students receive an introduction to the nature and extent of research in all areas of physical education, and have an opportunity for some specialization in an area of particular interest to them.

Because the M.A. degree with thesis is considered as the first step toward the Ph.D., in one of nine areas of specialization, the undergraduate course work required for a particular candidate depends in large measure on the area in which the candidate intends to specialize for the Ph.D. Specific courses in mathematics, chemistry, physics, ecology, physiology, or psychology are required for certain areas of specialization. The selection of such courses must be approved by the professor in charge of the area of specialization for the candidate, and by the M.A. adviser.

Candidates who have to terminate their graduate study leading to 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:

- 27:240 Professional Preparation in Physical Education 2 s.h.
- Two courses outside the area of specialization, from the following: 27:153 Advanced Anatomy and Kinesiology 2 s.h.
- 72:200 Exercise Physiology 2 s.h.
- 27:302 Physiology of Exercise Laboratory 2 s.h.

Doctor of Philosophy

A Ph.D. candidate in physical education shall have a general knowledge of all areas of physical education, a working knowledge of the research techniques applicable to problems in physical education and athletics, and knowledge in depth 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, and recreation-administration, curriculum in physical education, exercise physiology, measurement and evaluation in physical education, motor behavior, and therapeutics.

The thesis program for the M.A. degree in 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 area of specialization are offered by degree-granting 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 writes a comprehensive examination prepared and evaluated by faculty members of the Department of Physiology and Biophysics in the College of Medicine. Such candidates graduate with Honors in Physiology.

The Ph.D. core requirements include:

31/405 Thesis: Ph.D. 12 s.h.
7P/242 Selected Applications of Statistical Techniques 3 s.h.
or 7P/243 Interdisciplinary Statistical Methodology 3 s.h.
or 63/183 Design and Analysis of Experiments in Biomedical Sciences 3 s.h.
27/202 Practicum in College Teaching 3 s.h.

The foreign language requirement differs for each area of specialization. All candidates are required to demonstrate proficiency in a foreign language that must be satisfactory in completing the 7P/348 Data Processing or 22C/101 Introduction to Computing with FORTRAN.

The candidate must complete a minimum of 20 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/201 Adapted Physical Education 3 s.h.
7U/202 Research 3 s.h.
7U/205 Adapted Physical Education: Special Topics and Research 3 s.h.
60/100 Human Anatomy and Neurobiology 4 s.h.

Administration and Supervision in Physical Education
7P/242 Supervision of Physical Education 3 s.h.
7P/251 Foundations of School Administration 3 s.h.
7P/252 Research 3 s.h.
7P/257 Advanced Administration of Physical Education 3 s.h.
7P/258 Advanced Administration of Athletics 3 s.h.

Anatomy
60/203 Gross Human Anatomy for Graduate Students 5 s.h.
or 60/108 Human Anatomy 3 s.h.
60/110 Human Anatomy and Neuroanatomy 4 s.h.
37/112 Cell, Tissue, and Organ Biology 5 s.h.
27/153 Advanced Anatomy and Kinesiology 5 s.h.

Biomechanics
57/102 Research in Engineering 3 s.h.
57/104 Principles of Fluids, Transfer Processes, and Deformable Bodies 3 s.h.
69/154 Intermediate Dynamics 3 s.h.
69/154 Advanced Dynamics 3 s.h.
60/108 Human Anatomy 4 s.h.
27/202 Practicum in College Teaching 2 s.h.
27/205 Electrodynamics in Kinesiology and Biomechanics 3 s.h.
27/357 Research Techniques in Biomechanics 4 s.h.
7P/243 Interdisciplinary Statistical Methodology 3 s.h.
7P/161 Introduction to Theories of Learning 3 s.h.
27/201 Research 2 s.h.
27/338 Seminar: Models and Theory in Curriculum 2 s.h.
27/243 Philosophical Bases of Curriculum Construction 3 s.h.

Exercise Physiology
37/112 Cell, Tissue, and Organ Biology 5 s.h.
60/202 General Histology for Graduate Students 5 s.h.
37/152 Endocrinology Laboratory 2 s.h.
7P/1502 Endocrinology for Health Sciences: Medical 5 s.h.
7P/252 Exercise Physiology 2 s.h.
7P/202 Physiology of Exercise Laboratory 2 s.h.
7P/211 Medical Physiology 2 s.h.
7P/243 Advanced Exercise Physiology Laboratory 2 s.h.
7P/243 Advanced Exercise Physiology Laboratory 2 s.h.
90/120 Metabolism 3 s.h.

Measurement and Evaluation
7P/242 Interdisciplinary Statistical Methodology 4 s.h.
or 7P/244 Correlation and Regression 3 s.h.
or 22B/153 Introduction to Probability 3 s.h.
or 250/154 Introduction to Mathematical Statistics 3 s.h.
7P/246 Design of Experiments 4 s.h.
7P/252 Construction and Use of Evaluation Instruments 4 s.h.
7P/257 Educational Measurement and Evaluation 3 s.h.
27/247 Seminar: Research in Measurement and Evaluation in Physical Education 3 s.h.

Motor Behavior and Learning
27/201 Research 3 s.h.
27/312 Selected Issues: Information Processing and Motor Control 3 s.h.
27/314 Seminar in Motor Behavior Research 2 s.h.
7P/245 Design of Experiments 4 s.h.
60/110 Medical Neuroanatomy 3 s.h.
7P/221 Advanced Central Nervous System Physiology 2 s.h.
101/175 Evaluation of Selected Neurological Disorders 3 s.h.
or 101/212 Medical Instrumentation 3 s.h.

Three courses, one a graduate-level Practicum, must be selected from the Department of Psychology in any combination of the following areas: memory, information processing, perception, neurophysiology, mathematical psychology, and child development.

The Practicum:

All Students
101/214 Advanced Seminar in Physical Therapy 3 s.h.
or 101/235 Analysis of Scientific Literature 2 s.h.
or 101/337 Research in Therapeutics 3 s.h.
or 101/280 Teaching Practicum 3 s.h.
or 102/280 Clinical Educational Practicum 3 s.h.
or 101/284 Practicum in Research 3 s.h.
7W/262 Facilitating Learning in Health Science 3 s.h.
or 101/214 Advanced Seminar in Physical Therapy 3 s.h.
or 101/235 Analysis of Scientific Literature 2 s.h.
or 101/337 Research in Therapeutics 3 s.h.
or 101/280 Teaching Practicum 3 s.h.
or 102/280 Clinical Educational Practicum 3 s.h.
or 101/284 Practicum in Research 3 s.h.
7W/262 Facilitating Learning in Health Science 3 s.h.

Cardiovascular Emphasis
7P/223 Exercise Physiology 2 s.h.
or 7P/221 Advanced Exercise Physiology Seminar 2 s.h.
7P/271 Advanced Cardiovascular Pharmacology and Physiology 2 s.h.
or 7P/290 Special Topics 2 s.h.
or 99/120 Metabolism 3 s.h.
or 99/120 The Chemistry of Biological Materials 3 s.h.
or 99/183 Biochemistry for Medical Students 3 s.h.
Musculoskeletal Emphasis
3 s.h.
211131 Physiotherapy
3 s.h.
211132 Advanced Physiotherapy of Muscles
2 s.h.
1011321 Electromyography in Kinesiology and Biomechanics
3 s.h.
603205 General Histology for Graduate Students
5 s.h.
or
6511300 Readings in Material Engineering
5 s.h.
Neurovascular Emphasis
603111 Medical Neurosurgery
3 s.h.
211232 Advanced Central Nervous System Physiology
2 s.h.
101232 Electromyography in Kinesiology and Biomechanics
3 s.h.
or
317180 introduction to Neuroscience
3 s.h.
or
317181 Neurophysiology
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.S. or M.D. degree, and on 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.

For admission to the Ph.D. program in therapeutics, the applicant must be a graduate of an approved professional graduate program, and must demonstrate a high level of research or clinical competence.

Program work is limited to the fall semester. Ordinarily, the program is designed for students who have completed their coursework by January 15 for enrollment in February 1987 for notification by April 1 and May 15 for notification by July 1.

Facilities
The Recreation Building and Field House provide excellent facilities for use in the physical education sciences 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.

Courses

For Undergraduates and Graduates
211111 Exercise Physical Education 0.5 s.h.
211112 Exercise Physical Education 0.6 s.h.
211113 Exercise Physical Education 1.0 s.h.
211114 Exercise Physical Education 1.5 s.h.

Primarily for Undergraduates
211211 Exercise Physical Education 0.5 s.h.
211212 Exercise Physical Education 0.6 s.h.
211213 Exercise Physical Education 1.0 s.h.
211214 Exercise Physical Education 1.5 s.h.

317180 Introduction to Neuroscience
3 s.h.
317181 Neurophysiology
3 s.h.
37:183 Athletic Training-Radiology and Therapeutics
Offered every spring semester. Prerequisite: 37:182. 
37:358 Laboratory Practice in Athletic Training
-required. 

Primarily for Graduates
37:209 Problems
-required. 
37:213 Research
Consult department head before registering. 
37:329 Problems in College Teaching
-required. 
37:338 Graduate Physical Education-Special Topics and Research
30-45 credit hours. Prerequisites: 37:183 and 37:185. 

Physical Education and Dance—Halsey Gym

Cheri N. Piggy Banks
Faculty, professor and chairperson Margaret Q. Fox, M.
Gladdy Scott
associate professor: Judith H. Allen, Alice A. Brown, 
Piggy Banks, Diane C. Gill, Christine H.B. Searl, 
Jeanne L. Backlund, Verna L. Bums, assistant professor: Suess-Blair, Ruth A. Leary, 
Sally Laxer, Jennifer K. Martin, Francesca Marotta, 
Julia Scott
assistant Professor: Catherine Belardi, Kathleen M. 
G Trail, Diane C. Gill, Linda S. Greer, Judith 
A. Davidson, Judy Goldberg, David R. Schneider, 
Peter Kennedy, Judy A. Leidolf, Virginia Pianko, 
Sonja D. Blaine, Carol A. Bowerman, Diane M. 
Thompson
Degrees offered: B.S. (B.S.), M.A., M.F.A., Ph.D., 

The Department of Physical Education and Dance offers bachelor's degree programs with emphases in physical education (teaching and coaching), the coaching of sports, the 
teaching of dance, dance performance, and sport 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 kinesiology, and industry, sports journalism and broadcasting, fitness and health clubs, sport specialist and sports administration, professional dance and theater, and public school teaching and coaching. 

The student acquires theoretical background through anatomy, 

Physical Education Area

28:25 Teaching of Sports (Team and Individual)
28:27 Teaching of Dance
28:31 Officialing
28:37 Advanced First Aid/CPR
28:35 Activity/Recreational Development
28:37 Methods and Materials of Physical Education for the Handicapped
28:37 Advanced Physics of Physical Education
30:18 Contemporary Issues in Health Education
30:18 Intermediate level course; elect iron
basketball, volleyball, field hockey, field sports, softball; students must demonstrate beginning level competency in basketball, softball, and volleyball.

Individual or dual sports 4 s.h.
(1 semester-hour per week for a racquet sport, 1 semester-hour in an intermediate-level course; elect from gymnastics, swimming, track and field, tennis, golf, badminton, dance, bowling, archery; students must demonstrate beginning level competency in swimming, track and field, and tumbling and apparatus.)

Rhythms 2 s.h.
(1 semester-hour at day school, 1 semester-hour of modern dance or jazz)

Dance Education Area

28D:29 Rhythmic Analysis of Dance 2 s.h.
28D:73 Composition I 2 s.h.
28D:74 Composition II 2 s.h.
28D:125 Methods and Materials of Teaching Children’s Dance 3 s.h.

One of the following:
28D:26 Dance Production 3 s.h.
28D:115 Twentieth-Century Dance 3 s.h.
28D:120 Dance in Education 2 s.h.
28D:125 Teaching of Modern Dance 2 s.h.

At least 7 semester-hours of the following:
28D:18 Modern Dance 1-2 s.h.
28D:19 Major Modern Dance I 1-2 s.h.
28D:20 Jazz 1-2 s.h.
28D:11 Major Ballet I 1-2 s.h.
28D:19 Major Ballet II 1-2 s.h.
28D:112 Major Ballet III 1-2 s.h.
28D:107 Major Modern Dance II 1-2 s.h.
28D:108 Major Modern Dance III 1-3 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 (non-teaching)

Physical Education and Dance Core Requirements
28:19 Introduction to Physical Education and Dance 1 s.h.
28:80 Anatomy 3 s.h.
28:11 Kinesiology 3 s.h.
28:107 Physiological Implications for Teaching Physical Education 3 s.h.
28:82 Measurement 2 s.h.
28:118 Methods and Administration of Physical Education 3 s.h.
28:121 History and Philosophy of Physical Education 3 s.h.
28:83 Psycho-Social Dimensions of Sport 3 s.h.

Sport Skills Requirements

Option 1
7 beginning level skills
2 intermediate level skills
1 officiating

Option 2
7 beginning level skills
3 intermediate or advanced level skills

Electives
At least 8 semester-hours from:
28:14 Coaching Women’s 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.
28:182 Sports Analysis 3 s.h.

Recommended
17:142 Nutrition 3 s.h.
6A:1 Introduction to Financial Accounting 3 s.h.
6F:100 Introductory Financial Management 3 s.h.
6M:31 Marketing 3 s.h.
6L:100 Administrative Management 3 s.h.
6E:1-2 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 specialties:

Sports specialist
Health and Physical Education 3 s.h.

Fitness specialist
Health and Physical Education 3 s.h.

Sports administration
Health and Physical Education 3 s.h.

Sports marketing
Health and Physical Education 3 s.h.

Endorsement in Coaching
28:14 Coaching Women’s Sports 2 s.h.
28:210 Advanced Coaching 2 s.h.
28:105 Care of Athletic Injuries 2 s.h.
28:107 Physiological Implications for Teaching Physical Education 3 s.h.
7E:71 Growth and Motor Development 2 s.h.
7P:107 Child Development 3 s.h.
7S:198 Coaching Practicum 1-3 s.h.

Health Education Secondary Approval
This secondary approval area (minimum standards, not a major) for those entering 20 teacher certification requires a minimum of 28 semester-hours of credit, including these required courses:
17:10 Growth and Development of the Young Child 3 s.h.
17:41 Food, Nutrition, and You 3 s.h.

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 provided distinguished service through teaching, coaching, research, administration, and other leadership roles in physical education, dance, and athletics. This department's proud heritage of producing leaders has been affirmed 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 with consideration given to his or her previous education and anticipated future career. Completion of the graduate degree usually leads to teaching, research, coaching, administration, or supervision in the schools or in a university.

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 all opportunities for diversity 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. Work outside the department provides a broader perspective and an opportunity to select specialization of the master's and doctoral candidates.

The most common areas of specialization have been adaptive physical education, administration of athletics and physical education, methods and supervision, coaching, measurement and evaluation, sociology of sport, psychology of sport, and sports communications. Internships are available in many areas, and are strongly encouraged for specialization in administration, supervision, teaching, coaching, and communications.

The graduate student group is cosmopolitan and international in makeup.

A research laboratory is available in Haley Gymnasium. It is equipped primarily for psychosocial measurement, and for motor learning research. Other equipment needs may be met on an interdepartmental and interest basis. Computer terminals are available at Haley Gymnasium, and provide University computer service as needed for research.

The M.A. degree is awarded on completion of at least 30 semester hours of graduate work including thesis, or 35 hours of course work without thesis. The curriculum may lead to teaching, coaching, certification, or preparation for advanced degree work in the chosen area of specialization. The student must demonstrate competency in anatomy, kinesiology, physiology, physical education for the handicapped, measurement, history of physical education or sport, and administration of physical education or athletics, growth and motor development, and psychological dimensions of physical activity. Competency may be demonstrated by completion of a course or satisfactory performance on a written examination.

Required Courses
28:208 Techniques of Research 3-4 s.h.
28:302 Seminar: Perspectives in Human Movement 2 s.h.
28:401 Thesis (For students on thesis option)

Program Options
The M.A. student may elect either a general curriculum or a specialization in adaptive physical education, administration of athletics/physical education, education, coaching, dance, measurement and evaluation, methods and supervision, psychology of sport, sociology of sport, or sport communication. Students desiring either specialization must be recommended by the instructor to submit a course of study to the graduate committee for approval.

Students in both the general curriculum and in an area of specialization work with an advisor in developing their program according to guidelines that have been set by the departmental graduate committee.

Doctor of Philosophy
All doctoral students must complete a minimum of 72 semester hours of graduate work, meeting general 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 programs. 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 a foreign language or computer science. The language requirement may be satisfied by (1) taking two semesters 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 27 semester hours in one or more departments other than physical education. The following specialization areas have been approved: administration of physical education/athletics, measurement and evaluation, psychology of sport, and sociology of sport. 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 advisor set the date of the examination, and it is conducted according to the policies established by the departmental graduate committees. The program of study and dissertation topic must be listed and the tools requirements met prior to taking the comprehensive 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 12 semester hours in residence are required.

Dance

Bachelor of Arts

Required
28:220 Dance Production 3 s.h.
28:297 Research Analysis of Dance 2 s.h.
28:320 Composition I 2 s.h.
28:322 Composition II 2 s.h.
28:500 Anatomy 3 s.h.
28:300 Kinesiology 3 s.h.
28:114 History and Appreciation of Dance 3 s.h.
28:115 Twentieth-Century Dance 3 s.h.
28:173 Composition III 3 s.h.
28:174 Beginning Labanotation 3 s.h.
28:247 Opera/Dance Theatre Production 3 s.h.
Eligibility
Twelve semester hours from the following:
28C:111 Methods and Materials of Teaching Children's Dance 2-3 s.h.
28C:112 Independent Study (arr.) 1-2 s.h.
28C:120 Dance Production Laboratory 1-2 s.h.
28C:121 2nd Ballet Technique 3 s.h.
28C:122 Workshop: Artists-in-Residence 1-4 s.h.
28C:123 Dance Production Laboratory 1-2 s.h.
28C:124 Improvisation 1 s.h.
28C:125 Teaching of Modern Dance 2 s.h.
28C:141 Introduction to Movement, Dynamics and Personality Growth 3 s.h.
28C:142 Introduction to Movement, Dynamics and Personality Growth 3 s.h.
28C:170 Readings in Dance Theory 3 s.h.
28C:170 Criminology of Dance 3 s.h.
28C:170 Intermediate Laboratory 3 s.h.
28C:171 Dance Company Class 0-1 s.h.
28C:190 Independent Choreography 1-4 s.h.

Technique Requirements
Dance majors must take a technique class each semester, with a maximum of 16 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:
28C:102 1st Ballet 3 s.h.
28C:105 Modern Dance I 3-2 s.h.
28C:105 Major Modern Dance I 3-2 s.h.
28C:105 Major Modern Dancing I 3-2 s.h.
28C:105 Major Modern Dancing II 3-2 s.h.
28C:110 Intermediate Ballet II 1-3 s.h.
28C:110 Intermediate Ballet III 1-3 s.h.
28C:144 Intensive Training for the Male Dancer 2 s.h.

Dance Education
See the B.S. in physical education (dance specialization) program.

Master of Arts in Dance (Dance Specialization)
This 18-credit 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
Audition 28E:79/14 Composition I-II 4 s.h.
28E:60 History & Analysis of Dance 3 s.h.
28E:26 Rhythmic Analysis of Dance 2 s.h.
28E:29 Dance Production 3 s.h.
28E:14 History and Appreciation of Dance 3 s.h.

Required Courses
28C:109 Major Ballet IV 1-3 s.h.
28C:110 Major Ballet III 1-3 s.h.
28C:107 Major Modern Dance I 1-3 s.h.
28C:108 Major Modern Dance III 1-3 s.h.
28C:173 Composition II 2 s.h.
28C:174 Composition IV 2 s.h.
28C:177 Beginning Labanotation 3 s.h.
28C:218 Physiological Functioning in Physical Education 3 s.h.
28C:115 Twentieth-Century Dance 3 s.h.
28C:175 Dance Theory 3-0 s.h.
28C:179 Criticism of Dance 3-0 s.h.
28C:304 Seminar: Dance & Society 2 s.h.
28C:302 Seminar: Perspectives in Human Movement 2 s.h.
28C:401 Thesis 3-0 s.h.

Elective courses may be taken in related fields of physical education, music, theater, and/or art, with consent of the advisor.

Faculty
The faculty represents diversified backgrounds and specializations. Abilites 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 area of specializations. Many hold significant leadership positions and are frequently called upon for lectures, speeches, and research presentations.

Facilities
Gymnastics, dance studios, special exercise room, and pool are used in the various programs in Halsey Gymnasium, North Hall, the Field House, the Recreation Building, and the recreation area at the Memorial Union. A field for outdoor sports is near Halsey Gymnasium. The proximity of the river makes canoeing instruction feasible on a regular class schedule. The exotic 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.

Courses

Physical Education

Summer for Undergraduates
28E:101 Basic Aquatics Physical Education 1 s.h.
Physical education majors only. May be repeated.
28E:102 Beginning Skateboard Physical Education 1 s.h.
Eligible, close to those who have completed requirement in physical education skills. May be repeated.
28E:103 Setting Women's Sports 3 s.h.
Introduction to the techniques and psychology of coaching.
28E:104 Safety Life Saving and Water Safety Instructor's Course 1 s.h.
Yearly certification: $15.00. Available for: lifetime cert., and annual recert. $45.00.
28E:105 Certification in Physical Education or Dance 1 s.h.
Study for the professional education in dance and related disciplines. Seminar approach with guest speakers; job alternatives and opportunities discussed.
28E:106 Teambuilding and Individual Sports 2 s.h.
Methods of teambuilding for military and individual events.
28E:107 Teaching of Dance 1 s.h.
Methods course for the teaching of ballet, tap, and square dance; includes observation of classes in progress, lesson planning, exclusive classroom technique, and creative teaching. Does not involve credit. 408.20. Prerequisite: 1 semester of ballet dance or consent of instructor.
28E:108 Basic Dance Movement Analysis Units open to all majors.
28E:109 Officiating 1 s.h.
Officiating techniques for selected sports.
28E:110 Officiating 1 s.h.
May be taken 28E:109 or be taken as independent work.
28E:111 Advanced Field Ath 3 s.h.
Leads to certification for American Red Cross Advanced First Aid and Emergency Care Certificate.
28E:112 Field Ath 1 s.h.
28E:113 Field Ath 1 s.h.
28E:114 Field Ath 1 s.h.
28E:115 Field Ath 1 s.h.
28E:116 Field Ath 1 s.h.
28E:117 Field Ath 1 s.h.
28E:118 Field Ath 1 s.h.
28E:119 Field Ath 1 s.h.
28E:120 Field Ath 1 s.h.
28E:121 Field Ath 1 s.h.
28E:122 Field Ath 1 s.h.
28E:123 Field Ath 1 s.h.
28E:124 Field Ath 1 s.h.
28E:125 Field Ath 1 s.h.
28E:126 Field Ath 1 s.h.
28E:127 Field Ath 1 s.h.
28E:128 Field Ath 1 s.h.
28E:129 Field Ath 1 s.h.
28E:130 Field Ath 1 s.h.
28E:131 Field Ath 1 s.h.
28E:132 Field Ath 1 s.h.
28E:133 Field Ath 1 s.h.
28E:134 Field Ath 1 s.h.
28E:135 Field Ath 1 s.h.
28E:136 Field Ath 1 s.h.
28E:137 Field Ath 1 s.h.
28E:138 Field Ath 1 s.h.
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28E:140 Field Ath 1 s.h.
28E:141 Field Ath 1 s.h.
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28E:145 Field Ath 1 s.h.
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28E:156 Field Ath 1 s.h.
28E:157 Field Ath 1 s.h.
28E:158 Field Ath 1 s.h.
28E:159 Field Ath 1 s.h.
28E:160 Field Ath 1 s.h.
<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>DANCE 101 Primarily for Undergraduates</td>
</tr>
<tr>
<td>10.10 Top</td>
</tr>
<tr>
<td>50.10 Introduction to Dance</td>
</tr>
<tr>
<td>50.10 Major: Modern Dance</td>
</tr>
<tr>
<td>50.10 Major: Jazz</td>
</tr>
<tr>
<td>50.10 Major: Ballet</td>
</tr>
<tr>
<td>50.10 Major: Sale</td>
</tr>
<tr>
<td>50.1 Introduction to Modern American Dance</td>
</tr>
<tr>
<td>50.20 Dance Production</td>
</tr>
<tr>
<td>Operations and procedures of all aspects of dance production.</td>
</tr>
<tr>
<td>50.37 Teaching of Dance</td>
</tr>
<tr>
<td>Techniques of teaching dance.</td>
</tr>
<tr>
<td>50.50 Health and Safety Education</td>
</tr>
<tr>
<td>Anatomy of the human body and its relationship to dance.</td>
</tr>
<tr>
<td>50.40 Art of Dance in Contemporary Society</td>
</tr>
<tr>
<td>50.73 Composition I</td>
</tr>
<tr>
<td>Elementary form of choreography.</td>
</tr>
<tr>
<td>50.74 Composition II</td>
</tr>
<tr>
<td>Continuation of 50.73.</td>
</tr>
<tr>
<td>50.91 Independent Study</td>
</tr>
<tr>
<td>50.92 Independent Study</td>
</tr>
<tr>
<td>For Undergraduates and Graduates</td>
</tr>
<tr>
<td>50.100 Art Therapy - Arts for Handicapped</td>
</tr>
<tr>
<td>50.107 Major: Modern Dance I</td>
</tr>
<tr>
<td>Intermediate modern technique. May be repeated.</td>
</tr>
<tr>
<td>50.108 Major: Modern Dance II</td>
</tr>
<tr>
<td>Advanced modern technique. May be repeated.</td>
</tr>
<tr>
<td>50.109 Major: Ballet</td>
</tr>
<tr>
<td>High-intermediate ballet technique. May be repeated.</td>
</tr>
<tr>
<td>50.111 Methods and Materials of Teaching Children's Dance</td>
</tr>
<tr>
<td>Preparing creative movement experiences to the elementary school child.</td>
</tr>
<tr>
<td>50.113 Ballet Prep</td>
</tr>
<tr>
<td>50.114 Introduction to Intermediate Modern Dance</td>
</tr>
<tr>
<td>50.115 Teaching: Dance and Physical Education</td>
</tr>
<tr>
<td>50.116 Dance Education</td>
</tr>
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<tr>
<td>DANCE 101 Introduction to Dance</td>
</tr>
</tbody>
</table>

**Physical Therapy**

See "Division of Associated Medical Sciences" in the "College of Medicine," section of the Catalog.

**Physician Assistant Program**

See "Division of Associated Medical Sciences" in the "College of Medicine," section of the Catalog.
The Bachelor of Arts program is designed for students who wish to gain a considerable knowledge of physics but who do not plan to research-oriented career in physics. This degree program can be useful to those planning careers in medicine, law, science-related administration, business, technical writing, or secondary school science teaching. The B.A. program requires fewer courses in physics and mathematics than the B.S. program, and thus provides for a wider choice of electives.

Bachelor of Science

The following courses or their equivalents are required for the Bachelor of Science degree with a major in physics:

- 12M-25-26 Calculus I and II 8 s.h.
- 22M-27 Introduction to Linear Algebra 4 s.h.
- 22M-28 Calculus III 4 s.h.
- 22M-35-37 Engineering Calculus I and II 12 s.h.
- 22M-38 Differential Equations for Engineers 4 s.h.
- 29-17-19 Introductory Physics I and II 12 s.h.
- 29-110 Intermediate Mechanics 3 s.h.
- 29-110 Introductory Quantum Mechanics 3 s.h.
- 29-118 Statistical Physics 3 s.h.
- 29-120-120B Electricity and Magnetism 6 s.h.
- 29-132 Intermediate Laboratory (two semesters) 4 s.h.

Two additional courses, one of them at the 100-level, selected from:

- 29-117 Optics 3 s.h.
- 29-128 Electronics 4 s.h.
- 29-122 Intermediate Laboratory (3rd semester) 3 s.h.
- 29-171 Mathematical Methods of Physics 3 s.h.
- 29-181 Atoms Physics 3 s.h.
- 29-192 Nuclei and Physics 3 s.h.
- 29-193 Introductory Solid State Physics 3 s.h.
- 29-194 Plasma Physics 3 s.h.

At least four to five semester hours of introductory coursework work in another science or engineering field.

Undergraduate Major in Astronomy

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 research laboratories.
### Bachelor of Arts

The following courses or their equivalents are required for the Bachelor of Arts degree with a major in astronomy:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>22M:25-26</td>
<td>Calculus I, II and Calculus II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>22M:27</td>
<td>Introduction to Linear Algebra</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>22M:35-37</td>
<td>Engineering Calculus I, II</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>16-17</td>
<td>Introduction to Physics I, II</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>20:11-12</td>
<td>College Physics I and II</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>20:19</td>
<td>Introductory Physics III</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>20:81-82</td>
<td>General Astronomy</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>20:155</td>
<td>Intermediate Mechanics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:117</td>
<td>Optics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:118</td>
<td>Statistical Physics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:119-120</td>
<td>Introduction to Astrophysics</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>20:128</td>
<td>Electronics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:129</td>
<td>Electricity and Magnetism</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:132</td>
<td>Intermediate Laboratory</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>20:137</td>
<td>Astronomical Laboratory</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

### Undergraduate Minor in Astronomy

The 18 s.h. of courses numbered above 100 required by the college must include 8 s.h. selected from the following list of courses:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>20:119-120</td>
<td>Introduction to Astrophysics</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>20:121</td>
<td>Solar System Astrophysics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:131</td>
<td>Radio Astronomy</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Master of Science in Physics

The M.S. degree in physics is offered with a thesis or with a critical essay. Either degree may be an intermediate step toward a Ph.D. degree, or a terminal degree. The final examination is either a thesis examination conducted by a committee of three members of the graduate faculty appointed by the dean of the Graduate College. The program for the M.S. degree with thesis requires 30 semester hours of graduate work and a thesis on original research based on an original experimental or theoretical investigation by the candidate. No more than 6 of the minimal 30 semester hours may be for research (20:291 Research: Physics) or seminar.

The program for the M.S. degree with a critical essay 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 (20:292 Individual Critical Study). Up to one-third of the graduate program may be in related scientific fields other than physics and mathematics, for example, chemistry, astronomy, geology, engineering, etc.

The candidate for either the M.S. degrees must have satisfactorily completed the following courses or their equivalents as an undergraduate or a graduate:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>20:115</td>
<td>Intermediate Mechanics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:116</td>
<td>Introduction to Quantum Mechanics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:117</td>
<td>Optics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:118</td>
<td>Statistical Physics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>20:129-130</td>
<td>Electricity and Magnetism</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>20:133</td>
<td>Advanced Laboratory (two semesters)</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>20:171-172</td>
<td>Mathematical Methods of Physics</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

### Double Major in Physics and Astronomy

It is possible to obtain a double major in physics and astronomy. Students who are interested in such a combination should consult with their adviser. 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 29:99 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 thesis or with a critical essay) and the Doctor of Philosophy, and one in astronomy, the Master of Science (with thesis or with a critical essay). 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 or astronomy.

An M.S. degree is not prerequisite to the Ph.D.

The Department of Physics and Astronomy cooperates in an interdisciplinary doctoral program with the Program in Applied Mathematical Sciences (see the "Graduate College" section of the Catalog).

Each entering graduate student is assigned 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 all full-time graduate students. After a student has selected a research specialty, the appropriate thesis or essay advisor then becomes the candidate's academic adviser and chair of the final examination committee.

### Master of Science in Astronomy

The M.S. degree in astronomy is offered with a thesis or with a critical essay. The general requirements are the same as for the M.S. in physics (see above). Course requirements are:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>20:115</td>
<td>Intermediate Mechanics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
29:116 Introductory Quantum Mechanics 3 s.h.
29:117 Optics 3 s.h.
29:118 Statistical Physics 3 s.h.
29:119-120 Intro to Astrophysics 5 s.h.
29:121 Solar System Astrophysics 3 s.h.
29:120-120 Electricity and Magnetism I 5 s.h.
29:133 Advanced Laboratory 2 s.h.
29:137 Astronomy Laboratory 2 s.h.
29:171-172 Mathematical Methods of Physics 6 s.h.
29:181 Atomic Physics 3 s.h.

A student who intends to continue for a Ph.D. in physics with an astrophysics specialization should take the following courses as early in her/his major as possible:

29:151 Radio Astronomy 3 s.h.
29:232-233 Theoretical Astrophysics 5 s.h.
29:280 Stellar Structure and Evolution 4 s.h.
29:285 Special Topics in Astrophysics 2 s.h.

Doctor of Philosophy in Physics

The program of study for the Ph.D. degree with a major in physics includes:

Thorough course work 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;

presentation and defense of a written dissertation based on this work.

All candidates for the Ph.D. must take at least 27 semester hours of 500-level course work in the following minimum program is recommended as a preparation for the comprehensive examinations:

29:181 Atomic Physics 3 s.h.
29:182 Modern Physics 3 s.h.
29:193 Introductory Solid State Physics 3 s.h.
29:194 Plasma Physics 3 s.h.
29:285 Classical Mechanics 3 s.h.
29:212 Statistical Mechanics I 3 s.h.
29:213-214 Classical Electrodynamics 6 s.h.
29:245-246 Quantum Mechanics 1-2 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 29:171-172 Mathematical Methods of Physics. The selection of less advanced course work will depend on the adequacy of the student's preparation for graduate work; the student's choice of more advanced and specialized course work will depend on the direction in which his or her interests develop. No more than 26 of the minimal 72 semester hours may be in research and seminars.

29:121 Solar System Astrophysics 3 s.h.
29:120-120 Electricity and Magnetism I 5 s.h.
29:133 Advanced Laboratory 2 s.h.
29:137 Astronomy Laboratory 2 s.h.
29:171-172 Mathematical Methods of Physics 6 s.h.
29:181 Atomic Physics 3 s.h.

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29:213-214 Classical Electrodynamics 6 s.h.
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For Undergraduates and Graduates

29.17 Introduction to Physics 4 h.
Mechanics, heat, and sound. Recommended for physics, chemistry, and other sciences and mathematics majors. Previously: Phys 105 in combination with 105b or equivalent. P: Phys 205 or equivalent.

29.18 Introduction to Physical Chemistry 4 h.
Thermodynamics, kinetic theory, and light. Continuation of 29.17.

29.19 Introduction to Physics III 4 h.
Atoms, nuclear, and particle physics. and relativity. Continuation of 29.18.
P: Phys 205 or equivalent.

29.21 Intermediate Electricity 3 h.
General principles of electromagnetism, electric circuits, and statics. Recommended for engineering students. Previously: Phys 106 and 110 or 141b. Corequisite: 29.22.

29.22 Modern Physics 3 h.
Wave mechanics, the hydrogen atom, and molecular structure. nuclear physics and elementary particles. Previously: 29.21.

29.23 Modern Physics Laboratory 1 h.
Consultant head of department before registration.

29.24 Undergraduate Seminar 1 h.
Reading and discussion on a subject of 20th-century physics or astronomy under guidance of an instructor. The topic and instructor will be announced in advance of each meeting. May be repeated.

29.25 Topics in Physics 3 h.
Supervised individual research project leading to a report and oral examination. For seniors and honors candidates majoring in physics or astronomy.

29.17 Introduction to Physics 4 h.
Mechanics, heat, and sound. Recommended for physics, chemistry, and other sciences and mathematics majors. Previously: Phys 105 in combination with 105b or equivalent. P: Phys 205 or equivalent.

29.18 Introduction to Physical Chemistry 4 h.
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29.24 Undergraduate Seminar 1 h.
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29.25 Topics in Physics 3 h.
Supervised individual research project leading to a report and oral examination. For seniors and honors candidates majoring in physics or astronomy.
Undergraduate Programs

Bachelor of Arts

A student speaking 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, or anthropology. Courses used to satisfy the general education requirement may not be used to satisfy the related field requirement. The course work in political science must include:

30:1 Introduction to American Politics or
30:2 Introduction to Politics

It must also include one of these:

30:3 Introduction to Political Thought and
Political Action
30:4 Introduction to Comparative Politics
30:5 Introduction to Political Behavior
30:6 Introduction to World Politics

It must include at least 18 semester hours in political science courses numbered 100 or above. At least 12 of the required 18 hours must be taken in regularly scheduled classroom work.

Transfer students must take at least 9 of the 27 semester hours in political science at The University of Iowa. Students must maintain at least a 2.0 grade point average in all political science courses taken at The University of Iowa, and 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 the B.S. requires that students complete at least 21 semester hours of mathematics or statistics. Courses approved for the mathematics/statistics requirement include:

26 Calculus I
22:510 Introduction to Statistical Methods
22:145 Intermediate Biostatistical Methods

On+ 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 secondary schools 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 11 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).

Honors
The department also has a program leading to a B.A. degree with honors. It is open to a limited number of students with a minimum 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 political science and a general grade point average of at least 3.5. Honors students must take 30:180 Honors Introduction to Political Inquiry, and must complete at least two semesters of work in the advanced 30:182-183 Honors Seminar, with a grade of B or better each semester. Students may substitute one semester of 30:184 Honors Senior Research Project for one of the semesters of the advanced Honors Seminar. Students must check with their advisors before making substitutions. Students interested in seeking a B.A. degree with honors should contact the departmental honors advisor prior to the beginning of the junior year.

Graduate Programs
At the graduate level, the department emphasizes the program leading to the Doctor of Philosophy degree in political science, which is particularly appropriate for students planning a scholarly academic career; and the Master of Arts in public affairs program, designed for students who plan careers in public service or in civic education teaching in secondary schools or junior and community colleges. The general M.A. degree is normally pursued by persons whose ultimate degree objective is the Ph.D.

Master of Arts in Public Affairs
Although all students in the public affairs program must complete the courses indicated in the schedule below, elective opportunities make possible several areas of specialization. Students are encouraged to take graduate courses in a single field (but not necessarily in a single department). Among those available are international relations, personal political behavior, political institutions, public policy analysis, and quantitative methods in management.

Planning the elective program should be undertaken in consultation with the director of the M.A. in public affairs program.
The M.A. in public affairs is a nonthesis program. The student must complete at least 36 hours of course work with at least a 3.0 grade-point average, and must pass a written final examination. Although the schedule suggested below implies completion within 3 years, the program is sufficiently flexible to accommodate students who may require additional time to meet all degree requirements.

Fall Semester
30:221 Public Policy Analysis I 3 s.h.
30:228 Introduction to Administrative Computing 3 s.h.
30:229 Introduction to Social Research Methods 2 s.h.
68:118 Economic Ecology of the Governor's Sector 3 s.h.
Electives 5 s.h.

Spring Semester
30:220 Administrative Theory and Public Policy 3 s.h.
30:221 Urban Administration 3 s.h.
30:223 Public Policy Analysis II 3 s.h.
Electives 6 s.h.

Summer Session
30:381 Internships in Public Policy and Administration 3 s.h.
30:392 Practicum in Public Policy and Administration 3 s.h.
Electives 3 s.h.
Total 15 s.h.

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 terminal 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, writing 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 the thesis and course work.

Master of Arts without Thesis
If a student's first-year evaluation committee finds that he or her course work and research papers provide sufficient evidence of the research and writing skills ordinarily demonstrated in a master's thesis, it 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
All doctoral students must acquire a level of competence in quantitative methods. This will require a thorough grounding in applied multivariate statistics which is demonstrated by taking 30:381 Advanced Research Methods and receiving a grade no lower than B. Any special tools or skills needed for conducting dissertation research—e.g., foreign languages, econometrics, or experimental design—must be acquired before taking comprehensive examinations. Students in doubt about whether they need such skills should discuss it with their faculty advisors in the first two years of Ph.D. training.

Comprehensive Examination
Students must take the comprehensive examination after completing the sixth semester of residence, or in the first examina tion period following their attainment of 45 hours of graduate credit, whichever comes later. Candidates for the Ph.D. must take written examinations in three of these areas: American Politics and Public Policy Comparative Politics International Relations International Politics Political Theory

Before taking the written examinations, candidates must present a written dissertation proposal and defend the proposal in an oral examination, which may also deal with any matter relevant to the written examinations. Each candidate in political science must acquire at least four semesters of special supervised training in teaching and/or research. This instruction is normally given in association with the student's service as a teaching or research assistant.

A comprehensive examination of departmental requirements is set forth in the Guide to Graduate Study in Political Science. For general graduate admission and degree requirements, see
semester of zoology; two semesters of chemistry; two semesters of physics; one semester each of chemistry and physics. B.S. majors also must complete at least one semester of calculus. The student should consult with his or her academic advisor concerning specific courses which will satisfy these requirements.

Minor
A minor in psychology is an option which should be attractive to students from a variety of disciplines. At least 12 of the 16 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 advisors can assist students in identifying sequences of courses for a minor which appropriately complement the student's major.

Area Electives
Animal Learning and Biopsychology
3:1:17 Human and Animal Psychology 3 s.h.
3:1:123 Psychology of Learning 3 s.h.
3:1:128 Psychobiological Psychology and Psychophysiology 3 s.h.
3:1:128 Introduction to Behavioral Pharmacology 3 s.h.
3:1:129 Biological Aspects of Behavior 3 s.h.
3:1:126 Behavior of Skinner 3 s.h.

Child and Developmental Psychology
3:1:14 Introduction to Child Psychology 3 s.h.
3:1:112 Development of Social Behavior 3 s.h.
3:1:114 Cognitive Development of Children 3 s.h.
3:1:116 Psychology of Sex Differences in Children 3 s.h.
3:1:148 Individual Differences in Developmental Psychology 3 s.h.
3:1:153 Psychology of Language II 3 s.h.

Clinical Psychology
3:1:123 Introduction to Clinical Psychology 3 s.h.
3:1:125 Personality 3 s.h.
3:1:181 Schizophrenia 3 s.h.
3:1:183 Abnormal Psychology 3 s.h.
3:1:185 Behavior Disorders in Children 3 s.h.
3:1:170 Behavior Modification 3 s.h.

Human Experimental Psychology
3:1:16 Introduction to Mental Processes 3 s.h.
3:1:102 Psychology as a Science 3 s.h.
3:1:110 Learning and Motivation in Psychology 3 s.h.
3:1:119 Psychophysiology of Language I 3 s.h.
3:1:121 Memory and Cognition 3 s.h.
3:1:122 Motivation 3 s.h.
3:1:123 Perception 3 s.h.

Social Psychology
3:1:16 Introduction to Social Psychology 3 s.h.
3:1:103 Development of Children's Social Behavior 3 s.h.
3:1:106 Attitude Change 3 s.h.
3:1:107 Environmental Stress 3 s.h.
3:1:108 Small Group Processes 3 s.h.

*Only one of these courses can be used to satisfy an area requirement.

Honors
The department has an active honors program open to majors with at least a 3.3 grade-point average in psychology courses and at least 3.2 overall. The program includes research seminars and individual research collaboration with faculty members. Students ordinarily are selected to participate in the department's 3:1:195 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
The graduate program in psychology is designed primarily for students seeking the Ph.D. degree. Except in very special circumstances, applications are considered only for that degree. For students entering without previous graduate work, it is a four-year program; those entering with previous graduate training will require at least two additional years in this department, depending on the nature of the earlier preparation.

The Ph.D. program has a strong emphasis on preparation for research, teaching, and scholarly endeavor, whether in academic settings or in industrial, governmental, or medical institutions. The intent is to produce graduates who are deeply committed to the study of behavior, familiar with fundamental knowledge about behavioral processes, well trained in the methods and techniques for careful investigation of basic and applied problems, and determined to make contributions to the discipline of psychology and to society. Prospective applicants should understand that the number of positions appropriate for graduates of this program is limited and that the competition for available openings is fairly intense.

Graduate training is organized in five broad training areas: animal learning and biopsychology, child and developmental psychology, clinical psychology, human experimental psychology, and social psychology. Each entering student is required to identify one of these areas as primary and to follow a program which develops the understanding of the substantive material and methods of investigation which are central to that subdiscipline. While pursuing specialty training, all students also meet course requirements in statistics and research methods, in learning, and in areas outside the primary one.

The training area programs are sufficiently flexible to permit a student who wishes to do so to develop substantial competence in a second training area. Several broad and general programs have been formulated and others can be developed as student interest dictates. Joint programs involve, in most cases, collaboration between the student, the faculty advisor, and research supervision or co-supervision by faculty members from both areas. The department also is prepared to help students develop additional expertise in any of the following interest areas: human factors, behavioral medicine, aging, organizational and consensual behavior, communications, and neurobehavioral science. Preparation in one of these interest areas will involve some special advanced seminars within the department, selected courses in other departments of the University, and participation in one or more research projects in the interest area.

Doctor of Philosophy
The Ph.D. degree requires satisfactory completion of at least 72 semester hours of graduate work in psychology, including at least 33 semester hours in this department. All students must satisfy, through one of several options, requirements in statistics and research methods, and in learning. A course in the philosophy of psychology is strongly encouraged. Each student also is expected to complete a year of course work outside the primary training area to develop a reasonably broad background in the discipline of psychology as a whole. The student also must meet the general requirements, and their placement within the graduate program varies somewhat among the training areas, and also varies according to individual student's background and interests.

During each of the first three semesters, each graduate student ordinarily takes three courses, some of which are common throughout the Ph.D. curriculum and some of which are courses in the training area, and some of which are outside area electives. The student becomes familiar with the literature, strategies and special techniques in one or more research areas through engagement in individually-sponsored research projects. This participation, which may be with one faculty member or with a different faculty member each semester, is designed to help the student develop by the end of the third semester a reasonably detailed plan for the masters research project.

During the fourth or fifth semester in the program the student is expected to complete the masters project and defend the thesis. A comprehensive examination covering material in the primary training area and in the
secondary area, if any, is given early in the fifth semester. Advancement to Ph.D. candidacy ordinarily occurs at the end of the fifth semester, after a faculty-wide review of the student's progress record of performance on the M.A. project, on the comprehensive examination, in course work, and in teaching, research, and service activities.

During the third year, while continuing selected course work in the training and interest areas, the student develops a competence for the dissertation research. The fourth year is devoted primarily to advanced seminars and to the conduct of the Ph.D. study and the preparation of the dissertation. In the Ph.D. filed examination the student offers an oral defense of the dissertation and exhibits an ability to relate the dissertation work to broader issues in the training and interest areas in which the student has chosen to specialize.

Master of Arts with Thesis

As indicated above, the department does not offer a specific M.A. program. The Master of Arts degree with thesis is a required step for students on the Ph.D. objective. The degree requires satisfactory completion of at least 30 semester hours of graduate course work in psychology with at least 16 semester hours in this department. The course work must include a statistics sequence, a learning course, and at least one course outside the primary area. The student also must complete an acceptable comprehensive examination and conduct a successful oral defense of the thesis.

Master of Arts without Thesis

The Master of Arts degree without thesis is an option available to those students who anticipate their work in this department after four semesters. Awarding of this degree requires satisfactory completion of at least 38 semester hours of graduate credit in psychology, which must include a statistics sequence, a learning course, and at least one course outside the primary area. The student also must perform successfully on a written and/or oral examination covering the area of specialization.

Graduate Training Area

Animal Learning and Biopsychology

The focus of the program in animal learning and biopsychology is on the analysis of learning and motivation in nonhuman subjects, through the application of behavioral and biological principles. Students in this program are expected to learn the most modern analytical and laboratory methods in computer-assisted experimentation, electronic instrumentation, neurophysiological and histological techniques, and biochemical essay procedures. Special faculty strengths are in the fields of classical and operant conditioning, comparative psychology, motivation, neuropharmacology, neuroendocrinology, and neuroanatomy.

Faculty members in the animal learning and biopsychology area interact efficiently with colleagues from a number of basic sciences in the College of Medicine. These collaborative activities provide excellent research and training opportunities for students interested in such emerging interdisciplinary fields as behavior medicine and behavioral science.

Child and Developmental Psychology

Students in the child and developmental program are expected to acquire a broad understanding of children's development in the social, cognitive, and perceptual domains. As the training program proceeds students may choose their preparation in any of these broad areas, or may choose to develop a more particular specialization in such areas as language development, learning and memory, the development of social judgment, anxiety development, and abnormal development. Most of these specializations require substantial preparation in at least one of the other social science majors in the department. The program does not have a specific field focus but instead stresses that faculty members in the department are involved in research in aspects of aging and hence can provide some supervision for students interested in this area. Faculty members have close contacts with faculty members in the Department of Speech Pathology and Audiology, the College of Medicine, and the Department of Pediatrics, and these relationships can be useful to students who wish to gain additional background in developmental aspects of either of these fields or of behavioral medicine.

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 clinical phenomena and acquiring research skills necessary to the systematic investigation of such phenomena. Recognizing that students must become familiar with clinical material and competent in the application of clinical skills, the department closely integrates practice experience in its Master's Clinical Psychology Clinic with course work and with supervised research experience.

Students in the clinical program may develop special competence in each area as psychopharmacology, personality, psychopathology, aggression, schizophrenia, the affective disorders, behavioral and cognitive therapies, sexual dysfunction, and child psychology. Faculty members are collaborating actively with colleagues from departments such as psychiatry, pediatrics, obstetrics and gynecology, and from agencies such as the Health Services Research Center, the Gerontology Program, and from nearby area Education Agencies. Partly as a consequence of such collaboration, behavioral medicine and aging are areas in which a number of clinical faculty members are prepared to offer research supervision. Within the department, joint training programs in clinical-child and developmental, and in clinical-human experimental, have been established, and similar joint programs combining clinical training with work in other training areas can be arranged. Advanced students have opportunities for gaining additional predoctoral experience through placements in clinical facilities maintained by local state, and University agencies. Students ordinarily also complete a one-year internship at an accredited clinical facility, usually after completion of the four-year academic program. The clinical training program is fully approved by the American Psychological Association.

Human Experimental Psychology

Students admitted to the human experimental psychology program complete their preparation in any of these broad subareas of sensory processes, perception, and experimental child psychology. Students specializing in cognitive processes acquire expertise in sensory psychology, development of perception, and decision making, learning and memory, and language behavior. Students with interests in sensation and perception may concentrate on visual perception, auditory processes, or mathematical modeling in experimental psychology. Students in experimental child psychology prepare in areas such as discrimination learning, problem solving, and transfer of training.

Faculty members in the human experimental, area are prepared to help students gain additional expertise in a variety of specialty areas, including human factors, communications, aging, organizational and consumer behavior, and experimental medicine. Collaborative research is underway with faculty members in the Department of Astronaut Training Engineering, the Institute of Industrial Research and Research, the Department of Speech Pathology and Audiology, the Department of Anesthesiology, the Health Sciences Research Center, and the Gerontology Program.
Social Psychology

The social psychology program offers a variety of perspectives on social processes. Students develop some familiarity with all of the approaches but may focus their graduate training in any of her sub-areas: social psychology, dealing with perceptual influences of social and physiological systems; social cognition, dealing with such topics as attitude acquisition and change, cognitive consistency, attribution, and persuasion; social influences on behavior, including social learning, social development, imitation, conformity, etc.; and social psychology of groups, dealing with cooperation and competition, group decision processes, social facilitation, and distortion.

Students in the social psychology area also may acquire additional preparation for research and teaching in interest areas such as organizational and consumer behavior, communications, human factors and behavioral medicine. Such preparation, which ordinarily will involve selected coursework outside the department, e.g., in the College of Business Administration, and participation in special research projects, will broaden the student's employment prospects.

Graduate Admission

The graduate program in psychology is geared primarily to students seeking the Ph.D. degree; all applicants are considered for admission to the M.A. level. Occasionally a qualified applicant interested in advanced work only through the M.A. level may be admitted to pursue a joint graduate program involving psychology and another discipline or profession. An individual interested in such a program, should contact the department chair prior to filing applications.

The deadline for applications is February 15. For all materials to be on file by that date, the Graduate Record Examination must be taken no later than the December date. 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 composite consideration of prior academic performance and potential contribution to the program. Emphasis is placed on the scores in verbal, quantitative, and analytic sections of the Graduate Record Examination, and the applicant's statement of background and purpose. Initial review of admission materials is done by faculty members in the training 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 some knowledge of the natural sciences and in mathematics, is desirable though not required. Students who have not had such a background but who are strongly qualified as potential candidates may be admitted, but will be expected to remedy deficiencies through special coursework or independent study prior to enrolling on the regular graduate program.

A student who has completed substantial graduate work at another institution at the time of admission to this program will be expected to present documents, such as the master's thesis or equivalent, which reflect significant engagement in research and scholarly writing. This material and the record of previous graduate coursework will be reviewed by the faculty members of the appropriate program area as a basis for placement in the graduate program. In no instance will a student be permitted to complete substantial research or writing for a master's degree as 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.

Financial Assistance

All students admitted to the graduate training program in psychology automatically are considered, on the basis of merit, for such financial support as may be available to them in the form of teaching assistantships, research assistantships, travel grants, tuition scholarships, etc. No separate application for financial aid is required.

Faculty

National rankings of graduate psychology programs consistently have shown this department to be among the top in the nation. The widely recognized commitment of the faculty to research and scholarship is manifest in the publication of over 75 articles, books, reviews, and book chapters each year, and in the fact that many of the faculty members are active as editors, associate editors, and regular consulting editors for major psychology journals.

Facilities

The department's facilities for graduate training and research are among the finest in the country. The Rice Hall, Spencer Laboratories of Psychology, and adjoining space in Seashore Hall, include three separate animal facilities, several operating rooms, a histology laboratory, a number of small laboratory computers, automated data acquisition and reduction systems, observation chambers with remote audiovisual control and recording equipment, soundproof chambers, closed-circuit viewing systems, electrophysiological recording rooms, conditioning laboratories, the Carl B.

Seashore Psychology Clinic, and well-equipped electronic, mechanical, and woodworking shops. Specially equipped research trailers are available for use in studies conducted at schools and other locations.

The University's Weig Computing Center has an IBM 370/168 and four Prime 750 computers. Students and faculty have ready access to these systems through terminals in the department and through a satellite computer facility in Seashore Hall. Office space for graduate students and faculty is provided in Seashore Hall, and the psychology branch of the University's Main Library is conveniently located in the west wing of Seashore Hall.

The research and teaching activities of the department are greatly benefited by the facilities and staff of other University and community agencies, including the University's General Children's, and Psychiatric Hospitals, the Veterans Administration Hospital, the University Counseling Center, the Child Development Clinic, the Wendell Jones Speech and Hearing Clinic, the Health Science Research Center, the Institute of Urban and Regional Research, and the Gerontology Project.

Courses

For Undergraduates

Either 31:1 or 31:3 of equiv, is a prerequisite to all other courses in psychology. Only one of these two courses may be taken for credit.

31:13, 31:15, 31:16, 31:17, 31:19, 31:23 and 31:65 are open to freshmen who have completed an introductory psychology course, e.g., 31:1.

31:21 Elementary Psychology

31:23 Research Methods and Statistics

31:24 Social Psychology

31:25 Personality Psychology

31:65 Experimental Psychology
Recreation Education/LIBERAL ARTS 165

31-204 Psychology Special II. 3 ch.
Detailed consideration of the classical and interpretive aspects of psychological research limitations. Emphasis on the measurement of various psychological variables. Prerequisites: 31-203 or permission of instructor. Credit/no credit option. 42, 92, 93, 94.

31-205 Introduction to Social Psychology. 3 ch.
An introduction to social psychology, including historical background, individual differences in social behavior, group behavior, and social perception. Prerequisite: 31-203 or permission of instructor. Credit/no credit option. 42, 92, 93, 94.

31-206 Nature and Treatment of Sexual Disorders. 3 ch.
Basic problems and approaches to the management of sexual dysfunction. Similarities and differences in sexual dysfunction and other problems. Prerequisite: 31-203 or permission of instructor. Credit/no credit option. 42, 92, 93, 94.

31-207 Observational Website in Clinical Assessment. 2 ch.
Introduction to research and assessment in the use of observational methods to determine the validity of assertive communication. Prerequisites: 31-203, 40, 92, 93, 94.

31-208 Clinical Child Psychology. 3 ch.
Developmental, psychological, and diagnostic attributes in relation to behavior, psychosocial, emotional, and pharmacological treatments approaches to various childhood disorders.

31-209 Theory and Techniques of Psychology. 3 ch.
Survey course in modern psychological techniques of behavior change, critical evaluation of theories and techniques. Prerequisite: consent of instructor.

31-210 Clinical Research in Psychology. 3 ch.
Experimental design and methodology in the evaluation of therapy efficacy and outcome. Case study, consideration of issues of measurement, planning effects, client and therapist characteristics, and spontaneous remission.

31-211 Psychopharmacology. 3 ch.
BIB 530

31-212 Psychosomatic Laboratory. 3 ch.
BIB 530

31-275 Behavioral Therapy. 3 ch.
Learned behavioral techniques and approaches to treatment of emotional problems. Focus on treatment of anxiety, depression, and drug abuse. Prerequisite: consent of instructor. Credit/no credit option. 42, 92, 93, 94.

31-277 Money and Family Therapy. 3 ch.
Theoretical foundations, clinical procedures, and an examination of issues in treatment of family and couple counseling. Emphasis on techniques and situations for intervention. Includes case and videotape demonstrations of various therapeutic techniques in clinical intervention with couples.

31-278 Family Therapy. 3 ch.
Prerequisite: Consent of instructor. Credit/no credit option. 42, 92, 93, 94.

31-285 Family Counseling. 3 ch.
Concepts of family-bonding relationships in many analyses of clinical behavior. Development of therapy techniques, including feedback, family therapy, and group therapy techniques. Prerequisites: consent of instructor. Credit/no credit option. 42, 92, 93, 94.

31-304 Research Methods in Recreation. 3 ch.
Introduction to research and evaluation in recreation and leisure services. Prerequisites: 31-203 and 31-204 or permission of instructor. Credit/no credit option. 42, 92, 93, 94.

31-305 Recreation Facilities. 3 ch.
A study of recreation facilities, their planning, construction, and administration. Prerequisites: 31-203 and 31-204 or permission of instructor. Credit/no credit option. 42, 92, 93, 94.

31-306 Creative Recreation. 3 ch.
An introduction to the creative arts in education and recreation. Prerequisites: 31-203 and 31-204 or permission of instructor. Credit/no credit option. 42, 92, 93, 94.

31-307 Exercise in Recreation. 3 ch.
Prerequisite: Consent of instructor. Credit/no credit option. 42, 92, 93, 94.

31-308 Activities in Recreation. 3 ch.
Prerequisite: Consent of instructor. Credit/no credit option. 42, 92, 93, 94.

31-309 Computer Applications in Recreation. 3 ch.
Prerequisite: Consent of instructor. Credit/no credit option. 42, 92, 93, 94.

31-310 Special Programs. 3 ch.
Prerequisite: Consent of instructor. Credit/no credit option. 42, 92, 93, 94.
The student must also take 9 to 15 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:
104:130 Park and Recreation Facility Management
104:134 Introduction to Planning and Design of Recreation and Park Areas and Facilities

Therapeutic Recreation
Therapeutic recreation focuses on preparing students to organize, plan, and lead recreation programs in treatment and nontreatment settings for people who are ill, handicapped, aged, disabled, and disadvantaged.

Courses required for this concentration are:
104:101 Orientation to Rehabilitation Settings
104:107 Orientation to Special Populations
104:135 Role of Therapeutic Recreation in Rehabilitation

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.

The practical emphasis is climaxd by a professional internship for a full semester in an agency and setting of the student's selection. The internship is designed to lead to professional placement. More than 150 local, state, and federal agencies, agencies, and services provide fieldwork and internship opportunities for students in the program.

Honors
Admission to the honors program in recreation education requires a normal application, completion of at least 30 semester hours of college work at the University, completion of at least 9 of the 30 semester hours of required major course work, and at least a 3.0 grade-point average on all college work attempted and on all work attempted in recreation education.

To graduate with honors in recreation education, the student must successfully complete six semester hours of honors work. With the permission of the chair of the student's committee, the student may take three semester hours of honors work in another department.

Master of Arts
The master's program is designed to prepare students for administrative, supervisory, and teaching positions in recreation systems and in universities. It offers two areas of specialization: recreation administration and therapeutic recreation. It may be taken with thesis (33 semester hours) or without thesis (36 semester hours). An introduction to scholarly activities and research is provided through 104:101 Leisure Research, or equivalent, and preparation of a thesis or research report. The research will result in a modest contribution to knowledge, a review of a report, or a synthesis of the design in the park and recreation field.

Recreation Administration
This area focuses on the development and administration of recreational programs in settings such as municipal departments, schools, volunteer agencies, churches, the armed forces, and federal agencies, industries, private organizations, etc. The emphasis in 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 bases of leisure. Public administration and urban social planning are particular aspects of this area. To provide this emphasis on special population groups, the program draws heavily from other disciplines such as public administration, social work, urban and regional planning, psychology, 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 designed 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 various 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 adjustment, kinesiology, the mentally retarded, and aging. The student should also have skills at least two program areas.

Financial Aid
Assistance is available in the form of graduate assistantships, research assistantships, teaching assistantships, and post-master's scholarships for doctoral candidates. The student may obtain this 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, 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 Utilization and Convalescence Homes, and the Coralville Department of Parks and Recreation.

Courses
Primary for Undergraduates
012:01 Foundations of Recreation 3 s.h.
Basic philosophy, history, scientific methodology and developments in leisure and recreation; function and settings of organized recreation and survey of agencies and organizations concerned with recreation.

010:01 Recreational Leadership 3 s.h.
Leadership in recreation: principles, program activities.

013:01 Introduction to Rehabilitation Settings 1 s.h.
Institutional and community utilization; program advancements, integration, and care of physically handicapped, correctional, elderly and aged.

012:01 Recreation Administration 1 s.h.
Introduction to the field of recreation; development of personal qualities important to effective performance.
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 13 fields:

- Jewish and Christian Scriptures
- Old Testament
- New Testament
- History of Christianity
- Early (to 1600)

Modern (since 1500)

- Theology and Ethics
- Jewish
- Roman Catholic
- Protestant
- Asian 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, to be distributed among 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 mastery of the tools and techniques or 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 course work. Four may be thesis research. She or he 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 offered 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 course work. A maximum of 12 semester hours will be allowed for the dissertation. The student may 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 course work 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 examination. 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 in the supervision of a three-member faculty committee. The committee will determine three subjects for the comprehensive examination, 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 six major 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

Interdisciplinary program in religion and personality

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 at least 12 months before beginning the comprehensive examination.

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 examination, 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 mailed 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 Hospitals and Clinics provide clinical opportunities for students in the field of religion and health, particularly in clinical pastoral education and the M.A. program in religion and health. Individual courses on such topics as death and dying and medical ethics utilize hospital personnel and facilities.

Graduate Financial Aid

The School of Religion has available three types of departmental financial aid: teaching assistantships; teaching assistantships; and research assistantships.

Awards are made annually on a competitive basis. First-year students are ordinarily employed 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 required a combined verbal-quantitative score of 1050 on the Graduate Record Examination (GRE) Aptitude Test and a 3.0 grade-point average for admission to the M.A. program, and a combined verbal-quantitative score of 100 on the GRE Aptitude Test and a 3.0 grade-point average for admission to the Ph.D. program. Also, three letters of recommendation and the submission of a significant writing sample are required.

Courses

320 Old Testament Survey 2 sh.
321 Old Testament Survey I (Kings through II Samuel) 2 sh.
322 Old Testament Survey II 2 sh.
324 Librarianship of New Testament in its Historical Setting 3 sh.
327 Spiritual Warfare of Jesus 3 sh.
328 Religion in American History 3 sh.
329 Religion in European History 3 sh.
330 Religion in the Near East 3 sh.
331 Religion in the Far East 3 sh.
332 Religion in the African Setting 3 sh.
333 Religion in the Southwest 3 sh.
334 Religion in the Native American Setting 3 sh.
335 Religion and Marxist Theory 3 sh.
336 Religion and the Renaissance 3 sh.
337 Religious Education in the United States 3 sh.
337A Religion and Education 3 sh.
337B Religion and Education 3 sh.
338 Religion and Psychology 3 sh.
339 Religion and the Social Sciences 3 sh.
340 Religion and the Natural Sciences 3 sh.
350 Introduction to Cultural Anthropology 3 sh.
351 Introduction to the Hebrew Bible 3 sh.
352 Introduction to the Bible 3 sh.
353 Biblical Literature and History 3 sh.
354 Biblical Literature and History 3 sh.
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Russian

Department chair: Ray J. Parcet, Jr.
Faculty: professors Norman Luxemburg, professor emerita Helen Bartolin; associate professor Ray J. Parcet, Jr.; Henry B. Wiles, Christopher A. Wilcox; instructor Marla A. Belvedere

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 valuable as an end in itself but rather as a means to some other vocation. The department encourages all of its beginning students to pursue a joint major and to develop their interests in other fields.

With the increasing importance of Russian as a language of science and commerce, many students find that training in the language is an important asset to 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 diplomatic missions, business, literature and technical translation, and interpretation.

Bachelor of Arts

Students who major in Russian must complete the general College of Liberal Arts degree requirements (see the "College of Liberal Arts" section of this Catalog), and earn at least 20 semester hours of credit in advanced Russian courses. Required courses are:

41:111-112 Intermediate Composition and Conversation 3 s.h.
41:113 Advanced Composition and Conversation 3 s.h.

Russian/LIBERAL ARTS 191

Three of the following:
41:117-118 Readings in Russian Literature in Translation 3 s.h.
41:122 Russian Literature in Translation 1850-1917 3 s.h.
41:183 Tolstoy and Dostoevsky 3 s.h.
41:181 Soviet Literature and Precision 3 s.h.
41:185 Russian Culture 3 s.h.
41:191 Russian Civilization 3 s.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 one-semester course 41:127 Phonetics and Pronunciation. With the consent of the instructor, students may enroll in 41:108 Special Readings for Instruction in Bilingual 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 discussion, 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 work in Russian.

Summer and Study Abroad Programs

The department regularly encourages undergraduate and graduate students to participate in intensive programs of language study and cultural study in the Soviet Union and the civil nation of Israel. In recent years an increasing number of students have studied in summer and semester programs at Linguistic Studies University under the auspices of the Council on International Educational Exchange, and several have participated in the similar American Council of Teachers of Russian program at the Pushkin Institute in Moscow. 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 offers two major emphases, literary or in language study.
The focus in literature 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, para-literary techniques, recognize literary influences, and develop the ability for aesthetic 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 master's program may earn from four to eight semester hours of credit for thesis preparation. Candidates for the M.A. must pass a written 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. Aid is awarded annually on a competitive basis to the best-qualified applicants. Ordinary teaching assistantships are not awarded to first-year students, though exceptions are sometimes made on the basis of advanced language skills. Applications are accepted continuously from students who have been admitted to the Graduate College. Inquiries should be addressed to the departmental office.

Course Work 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 sciences or the humanities. A course is offered for students in sciences who need to develop reading ability for research purposes. Some classes are open to University students from all departments and are offered in English. The course includes 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 lecturers 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 desk wave records, tape recorders, recorne players, soundproof recording rooms, and drill units. An electronic classroom, a soundproof workroom, and a library of tape and disc recordings are also available.

Courses

For Undergraduates

411 First-Year Russian I 4.5 s.
412 First-Year Russian II Prerequisite: 411 or equivalent.
413 Second-Year Russian I Prerequisite: 412 or equivalent.
414 Second-Year Russian II Prerequisite: 413 or equivalent.
413-14 Russian for Business I, II 3 s.
415-16 Russian for Professionals I, II 3 s.
415-16 Russian for Students of Scientific Russian 3 s.
415-16 Russian for Students of Technical Russian 3.5 s.
415-16 Russian for Students of Medical Russian 3.5 s.
415-16 Russian for Students of Law Russian 3 s.
415-16 Russian for Students of Political Science 3.5 s.
415-16 Russian for Students of Economics 3.5 s.
415-16 Russian for Students of History 3 s.
415-16 Russian for Students of Geography 3 s.
415-16 Russian for Students of Philosophy 3 s.
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415-16 Russian for Students of Law 3 s.
415-16 Russian for Students of Political Science 3 s.
Introduction to applied science (technology), and a sequence in education.

Because science education is transcendisciplinary, program planning requires the cooperation and involvement of a variety of University departments and colleges. Most of the formal requirements are drawn from courses offered in a variety of departments.

The Science Education Program has attracted national and international attention. The program has received over $20 million in federal support since 1960. This support has helped establish a specific program for gifted and talented secondary school students, major teacher education programs, an extensive program of instruction and services for in-service teachers across Iowa, a skills program for attendance undergraduates in their studies of basic science, a history and philosophy of science sequence at the undergraduate and graduate level, a pre-professional evaluation component, and a variety of special longitudinal research 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 graduate study in the many areas of training, or such areas as 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 enter graduate study 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 requires 48 (see "General Science" in this section of the Catalog), the 56 semester-hour emphasis area in science education qualifies graduates for either degree. The language proficiency requirements are the only difference between the two degrees.

All of the emphasis areas in science education have the following characteristics in common:
Depth is a general area of science, equivalent to two or three years of sequential study; Preparation in a second area of pure science, equivalent to two years or four semesters of sequential study;

Introduction to two other fields of science;
A specific proficiency in mathematics as a tool of science (more mathematics is required for the physical science emphasis than the biological emphasis).

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 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:

**Biology Emphasis**

**Courses in Biology**

2:1 Introduction to Botany 4 sh.
37:3 Principles of Animal Biology 5 sh.
2:128 Fundamental Genetics 3 sh.
(same as 57:136)
2:131 Evolution 4 sh.
(same as 37:131)
2:132 Ecology 4 sh.
(same as 37:132)
72:150 Intermediate Physiology 4 sh.
Total 24 sh.

**Courses in Chemistry**

4:12-14 Principles of Chemistry I-II 6 sh.
4:10 Principles of Chemistry Lab I 2 sh.
4:121 Organic Chemistry I 3 sh.
Electives in Chemistry 5 sh.
Total 16 sh.

**Courses in Geology and Physics**

29:5-6 Basic Physics 4-6 sh.
12:3 Principles of Physical Geology 2 sh.
Total 6-8 sh.

(Mathematics in a Tool 20M:14 Mathematics for the Biological Sciences 4 sh.

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 will satisfy this requirement.

**History/Philosophy/Social Science**

97:128 Meaning of Science 2-3 sh.
97:130 Science in Historical Perspective 2-3 sh.

**Earth Science Emphasis**

**Courses in Geology**

12:5 Introduction to Geology 4 sh.
11:23 Earth History and Resources 4 sh.
11:24 Man and His Physical Environment 4 sh.
12:6 Evolution of the Earth 4 sh.
12:9 Geology of Iowa 3 sh.
14:11 Mineralogy 3 sh.
12:10 Introduction to Oceanography 2 sh.
Electives (total) 4 sh.
Total 20 sh.

**Supporting Science Courses**

4:13-14 Principles of Chemistry I-II 6 sh.
26:11-12 College Physics 8 sh.
26:50 Modern Astronomy 4 sh.
Total 18 sh.

**Courses in Geography**

44:101 Weather and Climate 3 sh.
Total 3-6 sh.

**Mathematics as a Tool**

20M:20 Elementary Functions 3 sh.

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 will satisfy this requirement.

**History/Philosophy/Social Science**

97:128 Meaning of Science 2-3 sh.
97:130 Science in Historical Perspective 2-3 sh.

**Environmental Studies Emphasis**

**Courses in Biology**

2:1 Introduction to Botany 4 sh.
37:3 Principles of Animal Biology 5 sh.
2:128 Fundamental Genetics 3 sh.
(same as 37:128)
2:131 Evolution 4 sh.
(same as 37:131)
2:132 Ecology 4 sh.
(same as 37:132)
Electives in Biology 3 sh.
Total 20 sh.

**Courses in Chemistry**

4:13-14 Principles of Chemistry I-II 6 sh.
**Physics**
29:11-12 College Physics 8 s.h.
97:1005 Societal and Educational Applications of Selected Concepts of Physics 3 s.h.
Physics electives 10 s.h.

**General Science**
2:1 Introduction to Botany 4 s.h.
28:61 General Zoology 4 s.h.
12:3 Principles of Physical Geology 2 s.h.
or
12:4 Principles of Historical Geology 3 s.h.
4:13 Principles of Chemistry I 3 s.h.
29:11 College Physics 4 s.h.

**Environmental Studies Emphasis**
2:1 Introduction to Botany 4 s.h.
37:3 Principles of Animal Biology 5 s.h.
37:152 Ecology 2 s.h.
4:13 Principles of Chemistry I 3 s.h.
Electives in environmental engineering 3 s.h.
97:140 Problems in Teaching the Development of Environmental Science 3 s.h.

**Earth Science**
12:3 Principles of Physical Geology 2 s.h.
12:4 Principles of Historical Geology 3 s.h.
28:61 General Astronomy 4 s.h.
Geology and astronomy elective 10 s.h.
97:102 Societal and Educational Applications of Earth Science Concepts and Topics 3 s.h.

**Iowa-STEP**
Iowa-STEP is a special program for talented secondary school students. The student registers 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 programs, seminars, and a variety of practicum experiences. In addition to experiences with youth, with children, and with regular courses, students are involved in excursions, social activities, and special action projects.

**Graduate Programs**
The Science Education Program offers graduate students leading to the degrees 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 degree 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 health, 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**
TP:151 Educational Psychology 3 s.h.
TP:107 History of Western Education or TP:117 Philosophy of Education 2 s.h.
7X:170 Human Relations for the Classroom Teacher 3 s.h.
7X:151 Science Methods I: Individualizing Instruction in Science 2 s.h.
7X:152 Science Methods II: Resources and Teaching Strategies 2 s.h.
7X:150 Individual Projects in Laboratory Practice 3-4 s.h.
7X:191-192 Observation and Laboratory Practice in the Secondary School 12 s.h.
97:128 Meaning of Science 4 s.h.
97:130 Science in Historical Perspective 2 s.h.
Science (beyond 90-quarter-hour undergraduate requirement) 10 s.h.
Minimum total 40 s.h.

**Master of Science without Thesis**
Advanced science education 12 s.h.
(early/Philosophy of science when not part of graduate program)
Major field of science (beyond emphasis area for undergraduate major) 12-18 s.h.
Applied science 4 s.h.
Minor science field 10 s.h.
Minimum total 36 s.h.

**Master of Science with Thesis**
Advanced science education 10 s.h.
History/Philosophy of science (when not part of undergraduate program) 4 s.h.
Advanced science 4 s.h.
Applications of science 2 s.h.
Research 4 s.h.

**Minimum total** 20 s.h.

**Educational Specialist**
Advanced science education 18 s.h.
History/philosophy of science 10 s.h.
Major area of science 18 s.h.
Practicum 3 s.h.
Applications of science 4-6 s.h.
Research 6 s.h.
Total beyond master’s degree 30 s.h.

**Doctor of Philosophy**
Advanced science education 20 s.h.
Research/Teaching/Specialization 3 s.h.
Major area of science 28 s.h.
"Consultative studies" 14 s.h.
Total beyond master’s degree 72 s.h.
(*includes intensified science preparation, enriched science problem solving, enviroprofessional preparation, integrative studies)

**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 undergraduate education which involves 300 in-service teachers each year in special curriculum revision 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 implementation.

In addition, Iowa-ASSIST administers a Tell Science and Education Conference that attracts more than 500 teachers, sponsors a spring Science and Humanities Symposium, joint with the U.S. Army Research Branch, for about 400 high-school students and their teachers, sponsors several conferences for the improvement of science teaching and public awareness of science-society issues; and each summer sponsors special workshops utilizing national authorities and enrolling 200 teachers, superintendents, and administrators.

**Chautauqua Short Course Programs**
The Science Education Center also administers the NSF-funded and AAS-sponsored Chautauqua Short Course programs for college science teachers. Over 300 college teachers of
Research
Each faculty member in science education is responsible for one or more lines of research. Major areas of faculty and graduate-student research include:

- Philosophy and sociology of science
- Values education in science
- Individualized learning
- Educational technology
- Computer-assisted training
- Simulation systems
- Classroom interaction studies
- Creativity in science education
- Piagetian development psychology
- Cross-cultural experiences in science education

Health education
Instructional psychology
Teacher behavior
Mathemagician activity
Inquiry processes
Instructional modes
Concept formation

Aptitude X Treatment interaction (ATI)
Arithmetic 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 similar number of foreign students is enrolled. The faculty has been involved in extended periods in international programs and is projected as well.

Facilities
The physical facilities for science education are adequate for the University of Iowa. A number of offices of the Iowa Science Education Center are located in the modern Physics Building on the campus.

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

- 9710 Cooperative Education Internship
- 9711 Fundamentals of Science
- 9717 Investigations in Science
- 9719 Special topics in science for high-school secondary school students. May be repeated.

Secondary for Undergraduates

- 9745 Science Survey
- 9746 Science Survey
- 9746 Science Survey
- 9746 Science Survey
- 9702 Science Foundations
- 9704 Science Foundations
- 9704 Science Foundations
- 9704 Science Foundations
- 9705 Research Project
- 9706 Science Foundations II

For Undergraduates and Graduates

- 9712 Societal and Educational Applications of Calculus
- 9716 Societal and Educational Applications of Calculus
- 9719 Societal and Educational Applications of Calculus
- 9720 Societal and Educational Applications of Calculus
- 9720 Societal and Educational Applications of Calculus
- 9721 Societal and Educational Applications of Calculus
- 9722 Societal and Educational Applications of Calculus
- 9723 Societal and Educational Applications of Calculus
- 9724 Societal and Educational Applications of Calculus
- 9725 Societal and Educational Applications of Calculus

Social Studies Education
Chair: Robert M. Pech
Faculty: professor Robert M. Pech
Associate professor N. Janet Myers
Degree offered: B.A., M.A., Ph.D.

Bachelor of Arts
The major in social studies education is an interdisciplinary, nonprofessional major. It provides an excellent foundation for careers in law, social work, religion, urban planning and development, and government service at all levels. The major purpose, however, is to provide a general education for students preparing to teach in secondary schools. Together with the professional requirements for certification, this major meets the standards for teaching social studies established by the North Central Association of Colleges and Secondary Schools.

Major requirements for the B.A. degree in social studies education total 60 semester hours of credit extended in departments cooperating in the social studies education program. Distribution of the coursework is as follows: 12
semester hours in history; 12 semester hours each in economics, political science, and sociology; at least 12 semester hours in geography; and 9 semester hours in geography, anthropology, or psychology.

Students pursuing a social studies education major will take survey courses introducing them to the various social sciences. Many of the departments also offer independent study and readings as alternatives to formal classes.

There is no separate honors program in social studies education. Students who qualify are encouraged to do honors work in the social science department in which they wish to concentrate their work.

**Admission Requirements**

Transfer students must have earned a minimum grade-point average of 2.75 on all work done in the subjects of the cooperating departments in order to be admitted to the program. Approval of candidacy for the bachelor's degree will be granted only to students who have a minimum 2.75 grade-point average in all college work undertaken in the cooperating departments.

**Master of Arts**

Some graduates of this program are classroom teachers and chairs of social studies departments in junior and senior high schools. Some are serving as curriculum consultants for school districts, while others are staff members in community colleges. A few have found the degree excellent preparation for their professional work in various correctional and penal institutions. For a small number, the master of arts in social studies education has provided access to civil service positions at various levels of government. The student may elect to take the master's degree with or without thesis, under either of two plans, both requiring 36 semester hours of credit in graduate courses.

In one plan the student completes at least ten semester hours of course work in the cooperating departments, and may complete the remaining eight semester hours in one or more of the cooperating departments.

In the other plan, the student completes at least twenty semester hours of course work in the cooperating departments and not more than ten in education, and may complete the remaining eight semester hours in either or both of his or her related departmental areas.

Both plans require at least nine semester hours of credit earned in courses numbered 200 or above, including one seminar course in each of the student's fields of emphasis.

All candidates must also complete 98:201 Individual Instruction in Social Studies Education 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 and reading, computer experience, internships, and laboratory work.

**Admission Requirements**

A student desiring to major in social studies education for a master's degree must have earned at least 22 semester hours of graduate credit in one area of social studies at an accredited institution, and must have a grade-point average of 3.0 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 3.0 grade-point average.

**Doctor of Philosophy**

Some graduates of the social studies education doctoral program have gone into administration in institutions of higher education and are serving as presidents, provosts, or deans of faculty graduate schools. Some are department chairs in colleges of education or curriculum directors in large school districts. Many are engaged in teaching 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 course work and dissertation credit beyond the bachelor's degree, subject to the requirements established by the College of Education. These credits must be distributed among the cooperating disciplines and professional education. Depending upon the type of work needed by the candidate, work in the disciplines chosen will comprise between 60 and 75 percent of the total 90 sememster hours. Work in education will vary 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 areas of study. All candidates must complete 98:201 Individual Instruction in Social Studies Education and 98:202 Seminar: Social Studies Education.

After completing most of his or her course work, the candidate must take a qualifying examination covering each of his or her fields of emphasis. The candidate must complete and orally 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 social science at 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 services of the 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 Weeg Computing Center.

The faculty members who serve as social studies education advisors and coordinators are experienced classroom teachers whose advanced degrees have been earned in history, the social sciences, and education. They are active in professional organizations, consultative work, and in working with schools in curriculum revision.

**Courses**

98:201 Individual Instruction in Social Studies Education 14 Sh

Individualized readings, field studies, and individual projects in history and social science or as problems of professional education. May be repeated. Prerequisite: consent of instructor.

98:202 Seminar: Social Studies Education 12 credits

Reading and discussion in significant developments in social studies education. Emphasizing investigation paper required. Cannot be used as a seminar credit. Offered 50 semesters. Prerequisite: consent of instructor. Same as 75:277.
Social Work

Director: Ralph S. Anderson
Faculty: Erin L. Anderson, N. Wayne Johnson, Thomas H. Wahl
program director: Dr. Michael A. Wink
adjunct professor Barbara C. Trovat
adjunct professors: Susan M. O'Brien, Linda R. Costello, Pamela M. Thompson
associate professor of social work: Dr. Susan G. Owen
adjunct professor: Dr. Margaret L. Schuster

Social Work is a professional program of study leading to a B.A. degree in Social Work. The program provides a physical and social milieu that supports a people-centered approach to professional education.

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 service agencies, D.A. graduates, such as public welfare agencies, program services, health, mental health, 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.

Undergraduate students majoring in social work must complete the core of the College of Liberal Arts requirements, excluding the general education requirement in social sciences. For general education requirements, in natural sciences include 11.21.111:111. The following courses are required for the major:

1. Introduction to American Politics: 3 s.h.
2. American Political System: 3 s.h.
3. Elementary Psychology: 4 s.h.
4. General Psychology: 4 s.h.
5. Introduction to Sociology: 4 s.h.

Any basic economics course: 2-4 s.h.

Take in Sequence:

Required:

Human Behavior in the Social Environment: 3 s.h.
Social Work Practice I: 4 s.h.
Social Work Practice II: 3 s.h.

Junior/Senior Years:

Social Work and Diacomm: 2 s.h.

Social Work and Criminal Law: 2 s.h.

Approved courses from another department: (see School of Social Work for list)

American Social Welfare Program and Policy: 3 s.h.
Social Work Research: 3 s.h.
Field Experience Seminar: 1 s.h.
Field Experience: 8-12 s.h.

American Studies

Anthropology

Business Economics

Education

English

History

Home Economics

Journalism

Political Science

Psychology

Religion

Sociology

Spanish

Honors

The School of Social Work has an 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 hours in Introduction to Social Work, which can be taken as 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 profession and for advanced social work practice either as generalists or in one of three concentrations. The common goals of the program, to be met through a set of core requirements, are to enable all students to understand the dynamics of human development and change; to make themselves to the human service organizations responsive people; to understand the linkages between the society and the individual; and to acquire intervention skills for working with individuals, families, small groups, organizations, and communities.

The Master of Social Work degree requires at least 36 semester hours of credit in graduate courses approved by the school including at least 30 semester hours earned after admission to the program. Students 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 a social science field shall receive a 12-hour reduction of credit requirements. With their advisors, who play an active role in assisting students in their educational planning, students should explore additional mechanisms for waiving courses.

The program operates a 12-month program. The summer term is a full 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 less than 30 semester hours after admission generally complete the program the spring semester of their second year.

Students must maintain at least a 2.5 cumulative average on a 4-point scale, must be approved for M.S.W. candidacy, and must
successfully complete a final examination project in lieu of the comprehensive examination the Graduate College generally requires.

The student may elect a thesis option, or for credit, and the final examination is the oral defense of the thesis. Either the advanced research requirement or the final examination project/thesis must be related to the concentration selected.

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.
42:141 Social Work Practice I 3 s.h.
42:142 Social Welfare Program and Policy 3 s.h.
42:144 Social Work Research 3 s.h.

Other required courses:
42:203 Interpersonal Communication and Change 3 s.h.
42:204 Human Service Administration 3 s.h.
42:201 Community Organization 3 s.h.
42:206 Advanced Research Seminar 2 s.h.
42:127 Social Work and Racism 2 s.h.
42:119 Social Work and Discrimination 2 s.h.

General option: an additional course in each concentration 6 s.h.

Concentration option: at least three additional courses in the concentration 9 s.h.

Practicum and practicum seminar 14 s.h.

Final examination project/thesis 0-8 s.h.

Electives 9-12 s.h.

Total 60 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 field of practice rather than a particular level of system of intervention. Generalists are required to take 9 semester hours of courses in each concentration, including the required practicum practice courses. Each. others courses which can serve to meet the requirement will be made available upon entry into the program. Practicum will include some opportunity for practice experience at each system level.

The concentration is individual, family, and small group services preparing students for intervention with these client groups. It seeks to develop practice competence in students both as analysts of personal change and as brokers/advocates for individuals and families. Topics include family law and family policy, work with children, working with couples and families, and working with groups.

The concentration in organization of human services 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 clientele. Topics include program evaluation, grants 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 9 semester hours of practicum in their concentration. In addition, either the advanced research course or the final project 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 Schnell of Social Work faculty are available for student advising and teaching all required courses.

The centers have three major purposes: to enrich the educational programs of full-time students by providing greater diversity of practical opportunities; to make pursuit of the graduate degree in social work geographically available to students; 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 the student's background, practicum can begin as early as the second semester. 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 capital. It is the largest center in the state. The Quad Cities Center metropolitan area is 75,000 people, this center also provides a wealth of practicum opportunities unavailable 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 different from the others in that a full program is unavailable there.

Intensive, short-term, split session courses are offered on 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. The degree and concentration requirements are the same as for full-time students but the program enables students to combine work, family and personal responsibilities. Part-time students are able to pursue a degree on a part-time basis to complete the program. Part-time students complete the prerequisites in the same manner as full-time students.

Students may complete the part-time program in Iowa City, or at the Des Moines Center, the Quad Cities Center, or at the Des Moines Center.

Joint Degree and Special Programs
The school has formal agreements with the College of Education and the Department of Urban and Regional Planning for joint degrees, which must be accepted by each department through their regular admissions process. Twelve credits in-
4281 Individual Study
Project work in student's interest carried out under direction of faculty member, with the approval of the department chairperson. A maximum of 12 credit hours is allowed for undergraduate and 4 for graduate credit. 

4282 Pedagogical Seminar
Designed to help students integrate academic teaching with the practical experiences accumulated in 4228, 4229, 4230, and 4231. Prerequisite: 4229, 4230, 4231 and 4214. Graded: A, B, C, D, F.

4329 Practice in Social Work
Practicum, applied practice or observation of professors, teachers, understand and using knowledge and skill of professional social work in social work institution. Involves the use of theory and practice. Prerequisites: 4214, 4220, 4221, 4226, and 4214.

4398 Thesis
May be repeated.

Sociology
Chen, David A. Professor
Social work, social policy. Professor: Chen, David A., Ph.D.

Undergraduate Programs
The undergraduate major is designed to provide a liberal arts education. The program is unique in that it provides a solid foundation in sociology, social sciences, and social services. Social work, social policy, and social services are the core areas of study. The major aims to provide a comprehensive understanding of society and the problems that affect it.

Graduate Programs
The graduate programs in sociology are designed to prepare students for careers in academia. Depending upon the student's interests, the master's programs prepare the student for doctoral studies or for professional positions in sociology.

Sociology Teaching Major
To major in sociology and qualify for a teaching certificate, students must complete the following:

1. Departmental requirements for all B.A. or B.S. degrees.
2. Two related fields of 12 semester hours, which range from economic, geographic, American history, world history, political science, and / or psychological perspectives (12 semester hours required in psychology).
3. The professional courses required for certification (36 semester hours).

Sociology courses taken to fulfill the general education requirement in social science requirements may also be counted toward the sociology teaching major. Other social science or history courses taken to satisfy general education requirements may not be counted toward the required hours in related fields.

Honors
Students who wish to graduate with honors in sociology must be admitted to the honors program. The honors program includes a thesis or comprehensive examination and a final oral examination upon completion of the honors research.

Graduate Programs
The graduate programs in sociology are designed to prepare students for careers in academia. Depending upon the student's interests, the master's programs prepare the student for doctoral studies or for professional positions in sociology. The doctoral program has a Research in its programs, and takes an oral examination upon completion of their honors research.

Master of Arts
The M.A. degree in sociology requires 30 semester hours with thesis or 36 semester hours without thesis. The program without thesis is intended for persons who desire a terminal degree and for whom a wider range of course content in sociology is appropriate.

All candidates for the M.A. degree must complete 34-201 History of Sociological Theory, 34-214 Elementary Statistics and Data Analysis, and 34-215 Sampling.
Sociology/LIBERAL ARTS

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 Jura 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 forward as 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 course work toward the M.A. degree. This cross-credit allows a student to receive the J.D. and the M.A. by taking less course work. This is not necessary if the two degrees were pursued in the same program; the program is highly individualized and allows the student to explore various aspects of the relationship between law and sociology.

Doctor of Philosophy

The Doctor of Philosophy degree in sociology requires a minimum of 72 semester hours of graduate-level course work, including the post-M.A. courses 34/217 Interdisciplinary Social Science and Data Analysis and 34/217 Theory and Research Design. Candidates must also take comprehensive examinations and write a dissertation.

All doctoral candidates are examined in the basic tool areas of sociology—theory, history of theory, methodology, and statistics. 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 theory, social change, race, ethnicity, deviance, crime, family, social stratification, social policy, 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 total score of 1000 from the quantitative plus verbal sections of the Graduate Record Examination. In addition to fulfilling the Graduate College requirements (see the "Graduate College" section of the Catalog), the applicant completes a departmental application statement 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 15.

Admissions decisions are based on a comprehensive 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 2.5 and a total score of 1000 from the quantitative plus verbal sections of the Graduate Record Examination (GRE) Aptitude Test. Enrolment is by program. The department currently limits 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 gives an honorarium to scholarship students to cover living expenses.

Facilities

The department maintains four interactive terminals for communicating with the University's mainframe computer. IBM 370/158 and five PRIME 750As and with the University's Newfield-Packard 2000F educational computer. Access for staff and students are available for faculty and students are the facilities of the Department of Sociology Research Laboratory and data archives unit, and the Iowa University Community Research Center (UCRC). The UCRC Research Laboratory consists of 17 rooms specially designed for social psychological research. The facilities include a small-group laboratory with audience-vidscope, video, and interactive 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 UCRC maintains a research library, data bank, and laboratory. Surveys in the data bank are accessible for secondary analyses. See the "Research Activities" section of the Catalog.

Courses

For Undergraduates Only

Courses open to freshmen without prerequisites: 34/1, 34/2, 34/15, 34/50, and 34/84. All other undergraduate courses are open to liberal arts major and non-majors.

Introduction to Sociology

Examination of how individuals are organized into social groups, ranging from families, groups to such larger complexes as social institutions. Social structure and social change, relations between social behavior and both basic and advanced sociological theory and research, and the sociological perspective.

Emergence and Distribution of Selected Social Problems

A discussion of selected social problems which may include population, inequality, race, social movements, etc.

Social Theory and Research Methods

An introduction to sociological research methods, sociological thinking, the development of sociological methodological and the logic and reasoning of proof in the research process. General problems associated with measuring social variables, the development and use of statistical analysis, the nature of research, sampling, sampling error, the research process, data analysis, research design, etc.

Continuation of 34/10, which is a prerequisite.

Research Design (Sociological Research and Methods)

Logic and the process of social science research methods. exploration of testing social scientific theories, collecting relevant data, and interpreting results; problems in how students are critical consumers of social science research.

Women in Society

An analysis of the impact of society on women's selected aspects of interpersonal, structural, and institutional perspectives. Includes masculinity, femininity, sociology of women, and women's movement.

Logical thinking, of social science research methods, exploration of testing socia scientific theories, collecting relevant data, and interpreting results; problems in how students are critical consumers of social science research.
Undergraduate Programs in Spanish

First- and second-semester Spanish courses continue the four-pronged objectives—understanding, speaking, reading, and writing—through a four-skills format and a policy of frequent testing of basic skills. Students thereby acquire a broadly based evaluation of their strengths and weaknesses and can calculate and plot their progress in preparation for future work.

Third- and fourth-semester courses are conducted on a dual-track basis, allowing students to elect in sections having either an aural/oral orientation or an emphasis on reading, writing, and content analysis.

Major in Spanish

The undergraduate major in Spanish consists of 30 semester hours of required coursework, according to the following program:

- Spanish Literature
- Language
- Literature
- Culture
- Civilization

Spanish and Portuguese

Spanish and Portuguese are taught as language courses for students majoring in Spanish or Portuguese. The courses for the major are designed to provide a solid foundation in the language and culture of Spanish-speaking countries.

- Spanish for Beginners
- Spanish for Advanced Learners
- Portuguese for Beginners
- Portuguese for Advanced Learners

Electives

The electives may be 30-100

- Spanish for Professionals
- Spanish for Teachers
- Spanish for Business
- Spanish for Health Professionals
- Spanish for Law Enforcement
35:109 Latin American Studies Seminar 3-4 s.h.
35:179 Special Work 1-3 s.h.
Students who plan to use the Spanish minor in teaching on the secondary or in a bilingual program are encouraged to complete language study through 35:137 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 Burgos, Spain, 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 minimum 3.2 average in Spanish. Graduation with honors in Spanish requires, in addition to the honors program described above, 8 semester hours earned in 35:121-122 Honors Literature and/or 35:129-124 Honors Spanish Language, an honors essay in Spanish, and an oral examination conducted in Spanish.

Undergraduate Programs in Portuguese

Major in Portuguese
Beginning courses in Portuguese are for students without previous language study or exposure. Classes are small, providing for a great deal of individual attention in an informal language-learning environment. Courses emphasize speaking and comprehending basic Portuguese and incorporate cultural material in the form of films and music. The undergraduate major in Portuguese requires the following courses, or their equivalents, for a total of 24 semester hours of course work beyond the second-year level.

Language (9 s.h.)
35:117 Advanced Portuguese I 4 s.h.
35:118 Advanced Portuguese II 4 s.h.

Literature (6 s.h.)
35:105 Brazilian Literature 3 s.h.
35:106 Brazilian Literature II 3 s.h.

Civilization (6 s.h.)
35:115 Brazil People and Culture 3 s.h.
35:116 Modern Portugal 3 s.h.

Electives (4 s.h.)
35:103 Modern Brazilian Fiction I: Short Story 3 s.h.
35:104 Modern Brazilian Fiction II: Novel 2 s.h.
35:107 Introduction to Portuguese Literature 3 s.h.
35:108 Black Literature of Portuguese Expression 3 s.h.
35:109 Nineteenth-Century Brazilian Novel 3 s.h.
35:118 Taucita in Portuguese Linguistics 3 s.h.

Minor in Portuguese
The undergraduate minor in Portuguese consists of 18 semester hours in Portuguese, including 12 semester hours of 100-level courses.

Offerings for Undergraduate Nonmajors
Undergraduate students in other disciplines may meet part of the College of Liberal Arts humanities and foreign civilization and culture general education requirements with 36:0 Contemporary Latin American Narrative, readings in English. The department offers several other literature and culture survey courses which are taught in English and are of general interest.

Latin American Studies Program
The department plays an important and active role in the Latin American Studies Program, an interdisciplinary undergraduate program focusing on the history, politics, social organization, economy, art, and literature of Latin America, leading to a certificate in Latin American Studies.

Students receiving this certificate must have satisfied competency in Spanish or Portuguese to be able to background readings in the language before enrolling in the required winter seminar. For further information on the Latin American Studies Program see "Latin American Studies Program" in the Catalog.

Master of Arts in Spanish
Candidates for the M.A. degree must complete the equivalent of the undergraduate Spanish major, with 6 s.h. in 500-level coursework. Deficiencies may be remedied with the appropriate course work.

Required Course Work
Spanish phonology (either 35:157 Spanish Phonology I or phonology component of 35:208)
35:208-209 Graduate Spanish Language I, II 8 s.h.
35:220 Cavendish's Don Quixote 3 s.h.
35:233 Seminar in Teaching 1 s.h.
35:251 Medieval Spanish Literature 3 s.h.
35:263 Historical Iberico-Romance Language 2 s.h.
Course in Modern Spanish Literature 3 s.h.
Course in Spanish American Literature 3 s.h.
Courses in Spanish American Literature 6 s.h.
Electives bringing student's total to required minimum of 36 semester hours in the M.A. program. The student is also responsible for the works listed in the departmental reading list.

Maximum Study Loads
Maximum course registration is 16 graduate hours during the fall or spring semesters, and 8 graduate hours during the summer sessions. One-quarter and one-third time teaching assistants are permitted to register for the maximum study loads. One-half time teaching assistants may register for not more than 12 semester hours in the fall or spring semester, and for not more than 6 semester hours in the summer session. Additional hours may be taken only with Graduate College approval.

Transfer Credit
A maximum of 9 semester hours of graduate credit in approved courses may be transferred from other institutions toward the 36-semester-hour requirements for the M.A. degree.

Teaching Certification
Exclusive of the practice-teaching requirement, graduate students may take the prerequisite courses 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 each from two of these three areas (both Spanish and Hispanic-American literature must be represented): I. Spanish linguistics; II. Medieval Spanish or Golden Age literature; and, III. Modern Spanish literature, Spanish-American literature or Luso-Brazilian literature.

Spanish and PortugueseLIBERAL ARTS 207
Doctor of Philosophy in Spanish

Two doctoral programs are available. One is dedicated to Hispanic literatures. Before admission to the Ph.D. examination the candidate must become well-acquainted with another Romance language and literature (a Portuguese-Brazilian program is separate and recommended), 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 literary works, or one major literary work and authoritative criticism of the work(s), as previously determined by the student and the department; an oral examination; and a research paper prepared at The University of Iowa.

The second doctoral program provides for specialization in Spanish linguistics and literature with emphases on linguistics, before his or her comprehensive examination, the candidate must complete a course in linguistics and the equivalent of three semesters of college Latin, and demonstrate a graduate-level knowledge of a second approved foreign language and a reading knowledge of a third approved foreign language.

In both programs, course work and individual or other courses are designed to give the candidate a thorough knowledge of the Spanish language, its literature, and related civilization, from medieval to modern times; provide adequate exposure to a second Romance language; and develop the candidate's capacity for critical analysis of literary texts.

The following fields together with the departmental doctoral reading list are considered a basic minimal program for the doctoral degree. The requirements may be fulfilled by acceptable studies at another institution except that seminar requirements must be satisfied at The University of Iowa or by the candidate at The University of Iowa. In addition, the candidate may be admitted to courses in other areas, if he or she is found to have particular interests and in order to improve employment opportunities.

Program I: Emphasis on Literature

History of the Spanish Language and Medieval Literature

- 35:251 Medieval Spanish Literature I
  3 s.h.
- One additional course in Medieval Spanish literature
  3 s.h.
- 35:253 Historical Ibero-Romance Language I
  2 s.h.
- One additional course in Spanish or Romance linguistics
  2 s.h.

Golden Age Literature

- 35:225 Drama of the Golden Age
  3 s.h.
- 35:226 Cervantes's Don Quixote
  3 s.h.
- One of the following:
  35:227 Fiction of the Golden Age
  3 s.h.
  35:229 Lyric Poetry of the Golden Age
  3 s.h.
  35:262 The Picaros and Novel
  3 s.h.

Modern Peninsular 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 courses, provided the two-century stipulation is met):
- 35:220 Nineteenth-Century Spanish Novel
  3 s.h.
- 35:221 Nineteenth-Century Spanish Poetry and Drama
  3 s.h.
- 35:223 Twentieth-Century Spanish Poetry
  3 s.h.
- 35:234 Twentieth-Century Spanish Novel I
  3 s.h.
- 35:236 Twentieth-Century Spanish Novel II
  3 s.h.
- 35:241 Twentieth-Century Spanish Drama
  3 s.h.

Latin American Literature

Four courses (12 semester hours) selected from a minimum of three of the following areas:

- Area A
  35:244 Novel of the Mexican Revolution
  3 s.h.
- 35:247-248 Spanish American Novel of the Twentieth Century I-III
  9 s.h.

- Area B
  35:220 Spanish American Essayists and Thinkers
  3 s.h.
- 35:242 Spanish American Literature of the Nineteenth Century
  3 s.h.
- 35:286 Images of Women in Latin American Literature
  3 s.h.

- Area C
  35:238 Post-Modernist Spanish American Poetry
  3 s.h.
- 35:244 Spanish American Poetry of the Twentieth Century
  3 s.h.
- 35:257 Modernism
  3 s.h.

35:275 Latest Currents in Spanish American Poetry 1950-Present
  3 s.h.

Area E

- 35:251 Spanish American Drama
  3 s.h.
- 35:245 Spanish American Short Story
  3 s.h.
- 35:264 Spanish American Short Story of the Century
  3 s.h.

Contemporary Linguistics

- 35:208-209 Graduate Spanish Linguistics I-III
  8 s.h.
- 35:167 Spanish Phonology I or Phonology component of 35:208
  3 s.h.

Literary Theory

- 35:264 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 300-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 usual program, as initial employment opportunities are enhanced by writing preparation in several areas.

Program II: Emphasis on Linguistics

History of the Spanish Language and Medieval Literature

- 35:251 Medieval Spanish Literature I
  3 s.h.
- One additional course in Medieval Spanish literature
  2 s.h.
- 35:253 Historical Ibero-Romance Language I
  2 s.h.
- One additional course in Spanish or Romance linguistics, excluding courses listed below
  3 s.h.

Comparative Linguistics

- 35:250 Comparative Romance Linguistics
  3 s.h.

Golden Age Literature

- 35:225 Drama of the Golden Age
  3 s.h.
- 35:226 Cervantes's Don Quixote
  3 s.h.
Modern Peninsular Literature
One of the following:
35:200 Nineteenth-Century Spanish Novel
3 s.h.
35:221 Nineteenth-Century Spanish Poetry and Drama
3 s.h.
One of the following:
35:235 Twentieth-Century Spanish Poetry
3 s.h.
35:234 Twentieth-Century Spanish Novel I
3 s.h.
35:234 Twentieth-Century Spanish Novel II
3 s.h.
35:230 Twentieth-Century Spanish Essay
3 s.h.
35:241 Twentieth-Century Spanish Drama
3 s.h.

Latin American Literature
Three courses from at least two of the Latin American literature areas listed in Program I

Contemporary Linguistics
35:197 Spanish Phonology I
3 s.h.
or
Phonology component of 36:206

Graduate-level phonology/phonetics
2 s.h.
35:206-209 Graduate Spanish Linguistics I-IV
8 s.h.
Additional graduate linguistics (excluding seminars below) 2 s.h.

Literary Theory
35:284 Types of Modern
3 s.h.

Professional Training
35:211 Research Methods and Bibliography
2 s.h.
35:223 Spanish in Teaching
1 s.h.

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 literatures and cover five broad fields, such 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 following the program with emphasis on linguistics take comprehensive examinations primarily, if not entirely, in linguistic areas, as determined by the candidate, with approval of the departmental faculty.
The length of time during which the different examinations are taken is determined by the candidate. They may be taken during the course of a semester or limited to a shorter period.
One four-hour and four-three-hour written examinations are administered, followed by a two and a half-hour oral examination covering the candidate's main field of study (45 minutes), the remaining fields (50 minutes total), and the Ph.D. reading list (45 minutes).

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 master's, 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 radio, tape recorders, record players, soundproof recording rooms, two drill rooms with 66 dual-channel tape recorders providing a simultaneous instructor's tape and a student record, an electronic classroom, a soundproof work room, 16mm and 35mm projection equipment and facilities, and a library of tape and disc recorders. The department offers to its majors a support and resource language laboratory.
The department sponsors a 30-minute Spanish-Language program, "Encuentros con el Españo/la" which broadcasts weekly on University radio station WGLI.

Spanish Courses

Primary 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 a departmental advisor. Students wishing more advanced placement may take the placement test. Transfer students who have taken courses for credit 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.

35:029 Cooperative Education Internship
3 s.h.
35:111 Elementary Spanish I
4 s.h.
35:112 Elementary Spanish II
4 s.h.
35:231 Intermediate Spanish I
3 s.h.
Prerequisite: 35:111 or equivalent.
35:232 Intermediate Spanish II
3 s.h.
Prerequisite: 35:112 or equivalent.
A complete four-year course sequence is required for those pursuing one year of college-level foreign language.

35:305 Spanish for Translators
3 s.h.
Basic introduction to the profession of translation. Translation theory and technique will be emphasized. Includes reading of selected texts in the literary, political, social, and economic studies of Spain and Latin America.

35:404 Contemporary Latin American Literature
Primary focus on themes and narrative techniques in the major texts of the decade. Emphasis on the revolution of 1968-1973, its influence on and its expression in literature. Study of political, social, and economic developments.

35:405 Religious Literature
Primary emphasis on the role of religious and ethical concepts and ideas in the literature of Spain and Latin America. Study of the role of the Church in Spanish history, politics, art, and literature. Same as 35:118.

35:406 Spanish for Translators
3 s.h.
Special emphasis on the profession of translation. Translation theory and technique will be emphasized. Includes reading of selected texts in the literary, political, social, and economic studies of Spain and Latin America.

35:492 Topics in Advanced Spanish
3 s.h.
Unidentified course titled "..." with number of credits dependent on the course. Topic varies. Prior approval of the departmental chairperson is required.

Prerequisite: 35:491.
Speech Pathology and Audiology

Department Chair: John D. White

The Bachelor of Science degree in Speech Pathology and Audiology is designed to prepare students for careers in the health professions. The program is designed to provide students with a strong academic background, professional knowledge, and skills necessary for careers in speech pathology and audiology. Students are required to complete a minimum of 120 credit hours, including general education courses, professional courses, and clinical experiences. The program is accredited by the Council on Academic Accreditation in Speech-Language Pathology and Audiology of the American Speech-Language-Hearing Association. 

Undergraduate Programs

Since the major 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 to prepare the student 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:

1. Introduction to Speech and Hearing Processes and Disorders

2. Anatomical and Articulatory Phonetics

3. Anatomy of Speech and Hearing Mechanisms

4. Fundamentals of Speech Science

5. Introduction to Hearing Science

6. Psychology of Language I

7. Psychology of Language II

8. Principles of Speech and Hearing Science

9. General Psychology

10. General English

11. General Biology

12. General Chemistry

13. General Physics

14. General Statistics

15. General Psychology

16. General English

17. General Biology

18. General Chemistry

19. General Physics

20. General Statistics

21. General Psychology

22. General English

23. General Biology

24. General Chemistry

25. General Physics

26. General Statistics

27. General Psychology

28. General English

29. General Biology

30. General Chemistry

31. General Physics

32. General Statistics

33. General Psychology

34. General English

35. General Biology

36. General Chemistry

37. General Physics

38. General Statistics

39. General Psychology

40. General English
be counted toward a major in the department, and have earned at least a 3.2 grade-point average on all major courses and all work at the University. For graduation with honors, the student must complete two semester courses for clinical study in residence after entering the senior-year honors program; maintain a minimum grade-point average of 3.0 overall in the honors program; and, in the required 8 semester hours of departmental honors courses for seniors (397 Honors Seminar and 398 Honors Thesis) and be recommended for graduation with honors by the honors thesis advisor and the departmental honors advisor. At any time during undergraduate study, students who have earned a minimum grade-point average of 3.0 and have not entered 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 advisor.

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 study to lead to additional study for the Ph.D. degree. The programs for the professional M.A. are specified to ensure that upon graduation, the student will meet the requirements for immediate professional employment; the general M.A. program allows greater flexibility in individual program plans.

The M.A. candidate usually has a background of undergraduate courses in speech science, psychology, anthropology, and behavior, essentially equivalent to an undergraduate major in this field at The University of Iowa.

Before his or her first registration in the program, the entering M.A. degree candidate must take proficiency examinations covering the speech and hearing coursework considered prerequisite to graduate study. The results of these examinations provide the student and faculty advisor with a basis for developing a plan of study.

Professional Program

The professional M.A. program is designed to prepare clinicians in speech-language pathology and audiology who will be able to function independently in a variety of clinical settings. The professional M.A. program meets all academic requirements for clinical certification by the American Speech-Language-Hearing Association.

The department offers the professional M.A. with various emphases. Each requires a minimum of at least 36 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 do so. 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

- S1:18 Neurological Processes of Speech and Language 3 s.h.
- S3:12 Articulation Disorders 3 s.h.
- S3:15 Hearing Loss and Audiology 4 s.h.
- S3:14 Diagnostic Science for Speech and Language Disorders 3 s.h.
- S3:152 Rehabilitation Audiology 3 s.h.
- S3:119 Counseling for Related Professions 3 s.h.
- S3:100 Psychological Issues and Counseling Techniques for the Communication Disorders Professional 3 s.h.
- S3:100 Seminar: Introduction to Research in Speech and Hearing 3 s.h.
- Advanced seminars or research 6 s.h.

Additional semester hours of practicum requirement sufficient to meet supervised, direct clinical experience requirements for the Certificate of Clinical Competence in the American Speech-Language-Hearing Association, and to provide broad supervised practicum experience.

"Equivalent undergraduate course will be accepted as meeting requirements.

B. Speech-Language Pathology, General Clinical Emphasis

Courses listed under A and:

- S3:152 Stuttering 3 s.h.
- S3:12 Voice Disorders 3 s.h.
- S3:152 Neuroanatomy of Speech and Language 3 s.h.
- S3:171 Cleft Palate 3 s.h.
- Practicum, research, and elective courses to bring total to at least 36 semester hours.

C. Speech-Language Pathology, Emphasis on Clinical Work in Elementary and Secondary Schools

Courses listed under A and B, and:

- S3:104 Remedial Methods in Speech and Hearing 3 s.h.
- S3:119 Laboratory Practice in Elementary School 5 s.h.
- Practicum, research, and elective courses to bring total to at least 36 semester hours.

D. Audiology, General Clinical Emphasis

Courses listed under A, and:

- S3:120 Fundamentals of Auditory Instrumentation 3 s.h.
- S3:120 Fundamentals of Hearing 3 s.h.
- S3:120 Communication Disorders 3 s.h.
- S3:240 Clinical Audiology and Hearing Aid Fitting 3 s.h.
- S3:241 Advanced Audiology 3 s.h.
- S3:242 Clinical Audiology and Hearing Aids II 4 s.h.
- S3:245 Audiology Procedures for Special Populations 3 s.h.
- Practicum, research, and elective courses to bring total to at least 36 semester hours.

E. Audiology, School Hearing Clinician

Courses listed under A and E, and:

- S3:104 Remedial Methods in Speech and Hearing 3 s.h.
- S3:192 Laboratory Practice in Elementary School 3-5 s.h.
- Practicum, research, and elective courses to bring total to at least 36 semester hours.

Requirements for Employment

A number of states, including Iowa, require a state license in speech-language pathology and 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. Completion of the following courses, in addition to those listed under A or B above, will meet the certification requirements of Iowa and most other states:

- S3:100 Exceptional Persons 3 s.h.
- S3:170 Health Relations for the Classroom Teacher 3 s.h.
- S3:104 Remedial Methods in Speech and Hearing 2 s.h.
- S3:192 Laboratory Practice in Elementary School 3-5 s.h.
- Education electives 11 s.h.

General Program

The general M.A. program for the student planning to continue in the Ph.D. degree usually includes a substantial portion of the coursework 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 scholar and researcher 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 adviser 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 that they clearly define their purpose and present adequate plans for 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
3.120 Fundamentals of Laboratory Instrumentation 3 a.h.
3.218 Language Acquisition 3 a.h.
3.218 Experimental Psycholinguistics 3 a.h.
3.220 Advanced Laboratory Instrumentation 3 a.h.
3.250 Acoustics and Biomechanics of Speech 5 a.h.
3.590 Research Speech Pathology or
or
3.591 Research Audiology or
3.592 Research Experimental Phonetics

Statistics beyond introductory course Courses in computer science Courses in psychology (Psychological, learning, motivation, personality)

B. Speech-Language Pathology
Seminars in areas of interest Clinical practica

C. Audiology
3.254 Psychoacoustics 3 a.h.
3.256 Psychoacoustics Laboratory 4 a.h.
3.256 Physiology of Hearing 4 a.h.

Seminars in areas of interest Clinical practica

D. Speech and Language Science
3.254 Psychoacoustics 3 a.h.
3.256 Psychoacoustics Laboratory 4 a.h.

Seminars in areas of interest Courses in linguistics and psychology Courses in biological and physical sciences and mathematics

E. Hearing Science
3.254 Psychoacoustics 3 a.h.
3.256 Psychoacoustics Laboratory 4 a.h.
3.266 Physiology of Hearing 4 a.h.
3.224 Sensory Processes 3 a.h.

Seminars in areas of interest Courses in biological and physical sciences and mathematics

Students following programs in speech and language science or hearing science are normally expected to register for research credit during each semester of residence. Courses recommended for the Ph.D. beyond those included in the departmental seminar, are drawn mainly from the areas of physics, engineering, mathematics, statistics, physiology, neurology, anatomy, and physiology.

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 preferably 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, consult 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 year. While an 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 to begin study in the spring semester will be considered only under special circumstances, and only if they are received no later than the pre-admit November 1.

Applicants to Ph.D. Program

Completed applications should be received at least two months prior to the beginning of the term for which admission is made: approximately April 1 for summer session, 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 Appointment

The following information applies to all financial appointments administered by the department:

Graduate appointment usually begins only in fall semester. Students beginning study in the spring semester or summer session are considered for appointments for the following fall semester.

Scope of the Graduate Record Examination (GRE) Aptitude Test are 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 mailed by April 1; however, the department continues to make offers after this time.

Clinical Facilities

The clinical training program provides excellent facilities from two locations: Iowa City is the health center of the state, and that in that city as well as facilities are readily available for the clinical training in speech-language pathology and audiology.

The University of Iowa Affiliated Speech and Hearing 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 of Speech and Hearing Services; Pediatrics Specialized Child Health Services; University Ear, Nose, and Throat Services; Child Psychiatry; Audiology and Speech Pathology, Veterans Administration Hospital.

Directors of these programs form the ad hoc Committee on Speech Language Pathology and Audiology at the University of Iowa.

The University of Iowa Speech and Hearing Center serves the University and the general public. Included in its services of outpatient evaluation and rehabilitation programs for speech hearing, and language problems, and a six-week summer residential program for
The planning curriculum comprises a 48-hour, four-semester (plus internships) program, accomplishing two academic years. The curriculum is based on the premise that planners must develop the theoretical and analytical tools that enable them to identify issues and recommend solutions. The courses are designed to fulfill the requirements of the Accreditation Board for Engineering and Technology, which accredits programs in planning, and to prepare students for public policy analysis, political science, and urban studies.

A student may petition to write a major paper, a thesis, or a written examination. The plan of study may be written to meet specific course requirements. A thesis is not required, although a student may petition to write one for up to six semester hours of sectoral major credit, in which case successful completion of the thesis satisfies the sectoral major examination requirement.

Each student is encouraged to complete an internship in a planning or related agency or organization to gain relevant professional experience. The program faculty takes an active role in helping students to secure these internships. Alternatively, the student may elect to complete an additional number of hours toward the opportunity of credit, bringing the total to 60 hours.

Joint Programs
Law and Planning

The Urban and Regional Planning Program and the College of Law cooperate in administering a four-year joint program in which the degree requirements are those of an M.S. 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.

Preventive Medicine and Environmental Health

A joint master's degree exists between the Urban and Regional Planning Program and the Department of Preventive Medicine and Environmental Health in the College of Medicine. This option results in an M.A. or M.S. in planning and an M.S. in Preventive Medicine and Environmental Health. Separate admissions to both academic units are required.
Hospital and Health Administration

The Urban and Regional Planning Program and the School of Social Work, lead 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 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 to both academic units are required.

Urban Transportation

The urban transportation research and training program is offered through the Center for Transportation Studies of the Institute of Urban and Regional Research. The Institute is a health administration unit at The University of Iowa. A participant certificate is awarded to students in academic graduate departments or programs with the approval of the committee to complete a prescribed set of courses in transportation. These courses are taught in the planning program and several other units, and the certificate program allows planning students with sectoral majors in transportation to extend their training and obtain an additional credential. For particulars, see "Urban Transportation."
Urban Transportation

A number of departments and programs at the University of Iowa provide programs that can help students pursue careers in urban transportation.

Programs and courses offered in the College of Liberal Arts and Sciences, the College of Engineering, the School of Public Health, and the Graduate College are designed to provide students with the knowledge and skills necessary for a career in urban transportation.

Programs include:
- Urban Planning: Focuses on urban design, transportation planning, and land use management.
- Public Policy: Covers issues related to urban policy, including transportation policy and urban development.
- Civil Engineering: Provides training in transportation engineering and infrastructure design.
- Architecture: Offers courses in urban design and transportation planning.
- Environmental Studies: Focuses on sustainable transportation and urban development.
- Economics: Studies transportation policy and its impact on the economy.

These programs and courses are designed to provide students with a comprehensive understanding of urban transportation issues and prepare them for careers in urban planning, transportation management, and policy development.

Urban Growth in Developing Countries

Program coordinator: Michael L. Mahony

A nondegree graduate program in interdisciplinary and cross-cultural studies and courses focused on urban problems of development in Third World countries is offered through the Center for Development Studies within the Institute of Urban and Regional Research. This program is designed to provide graduate students with an understanding of the complex issues and challenges faced by urban areas in developing countries.

In addition to a number of development-related courses offered in specific departments, the program includes a graduate course, 102:275 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, this 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.
Program Seminar. The latter seminar may be repeated, and students are asked to take it for one quarter of the semester during their tenure in the urban transportation program, to discuss a forum of various topics within the realm of transportation. Students are strongly encouraged to gain practical experience through internships or research assistantships. Faculty associated with the urban transportation program often accept an active interest in helping students find positions.

Research
Transportation research projects at Iowa often focus on problems at the state and regional levels. Participation in projects administered by program faculty provides students with the opportunity to develop a broad base of skills in such fields as planning methods, project analysis, and impact assessment. Program faculty have recently conducted research funded by the National Science Foundation, the A.S.P., and Iowa Department of Transportation, the Iowa Legislature, and numerous local and regional organizations.

As part of 103:261 Problems in Transportation and Land Use, students have conducted their own small-scale research projects for clients within the Iowa Department of Transportation or other public agencies. Early in the semester students meet with a/uni-part time staff to identify possible projects. At the end of the fifth week the students formally present their findings. Beyond the substantive knowledge acquired through concentration on the research topic, research methodologies and communication skills are acquired.

An excellent environment for student research exists within the Institute of Urban and Regional Research, which houses the Center on the University's Oakdale research campus. A selective collection of transportation materials, including census documentation, computer tapes, microfilms, and periodicals not available elsewhere on campus is maintained at the bulletin. The collection is augmented with extensive relevance material on transportation and related subjects of other locations in the United States. Advanced transportation facilities exist at the University as well; the Weig Computer Laboratory has a complete library of software packages tied to IBM 370, PDP-11, and Hewlett-Packard 2000 computer systems.

Financial Aid
Research assistantships are awarded on a competitive basis, with the level of financial support normally ranging from quarter-time to half-time. Students receiving financial aid during the academic year are eligible for summer research assistantships. Out-of-state students receiving research assistantships are eligible for in-state tuition rates. Academic year and summer assistantships may be provided by participating academic units in cooperation with projects funded through the Center for Transportation Studies.

Admission
Entry into the urban transportation program is limited to students pursuing graduate degrees in the academic units listed below. Interested students are encouraged to contact the director of the Center for Transportation Studies. The admission procedure consists of submitting to the director a current transcript, two letters of recommendation, and a brief statement relating the nature and extent of the applicant's interest in transportation.

Courses
The following courses are part of the sequence in the Urban Transportation Program:

44:133 Introduction to Transportation 3 a.h.
(44:133 44:134 44:135) 3 a.h.
44:136 Urban Transportation Systems Analysis 3 a.h.
44:137 Travel Behavior in Urban Areas 3 a.h.
103:260 Transportation Policy and Planning 3 a.h.
103:261 Problems in Transportation and Land Use 3 a.h.
103:263 Urban Transportation Planning Process 3 a.h.
103:265 Transportation Regulation and Finance 3 a.h.
(Same as 44:285, 44:295) 3 a.h.
507:372 Urban Transportation Planning 3 a.h.
103:311 Transportation Program Seminar 1 a.h.

Women's Studies
Program chair: David D. Riner
Faculty: Patricia Mathias (Sociology), Donald J. Youngs (History), Jacqueline B. Larsen, Philip A. Grorud (Sociology), Margaret R. Poole (History), Ann E. McKeown (Sociology), Diana M. Powers (Sociology), and Sarah A. Smith (English). The Women's Studies Program is a multidisciplinary program emphasize the teaching and study of women in the arts and social science, major site is to bring to the university community a focus on women as a group frequently overlooked by traditional disciplines. By taking courses through many departments, students become acquainted with the growing knowledge about women's experiences and social sciences and learn new analytical, statistical techniques developed within feminist scholarship, which they may then establish as a field of concentration or apply to other majors.

Undergraduate Study
Undergraduate students may complete a minor in women's studies by taking 16 semester hours in departments and courses associated with the program, including at least 12 semester hours in upper-level courses (numbered 300 or above), and maintaining a 2.0 grade-point average in these courses.

Undergraduate students 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 or an applied women's studies within existing disciplines. Graduate students who wish to pursue the PH.D. in women's studies may do so by filling a plan of study for the ad hoc interdisciplinary P.H.D. through the Graduate College.
English
6:161 Women in Literature
6:169 Changing Concepts of Women in Literature
6:185 Women Writing
6:194 Women's Literatures and Cultures
*8:434 Seminar: Twentieth-Century British Literature

General Education in Historical Perspectives
*1:129 Problems in Human History
*1:130 Problems in Human History

History
*1:651 Collectivism for History Majors
*1:104 Honors Seminar
15:189 Society and Gender in Europe, 1750-1860
16:181 Women in America: Colonial Period to 1870
18:182 Women in American 1870 Present
18:247 Readings in the History of American Women

Law
91:350 Sex Discrimination Law

Literature, Science, and the Arts
33:164 Approaches to Women's Studies
*20:161 Form and Meaning in the Arts
*23:196 Feminist Theory

Nursing
20:112 Human Sexuality
(Same as 42:112, TC: 112-17, 112-1)

Physical Education and Dance
10:31 Physical Education Skills
10:32 Physical Education Skills
28:102 Research on Women in Sport
28:153 Sociology of Sport in Women
28:242 Seminar: Health Concerns of Women

Psychology
31:116 Psychology of Sex Differences

Rhetoric
*10:3 Rhetoric

Social Work
42:112 Human Sexuality
42:273 Women and Social Change
42:281 Social Work Practice Selected Aspects

Sociology
34:106 Women and Society: Introduction to Women's Studies
34:167 Courtship, Marriage, and Alternative Life Styles
34:458 Economic and Political Development: Women's Roles
34:136 Sociology of Sexuality: Contemporary Social Patterns

*Only certain sections of these courses are Women's Studies courses.

Zoology
Department Chair: George O. Cain
Graduate Assistant Professor: George O. Cain, Honors Level

Undergraduate Program
The undergraduate degree program in zoology provides a liberal arts background for a career in biological science. Graduates may enter directly into government service or industry. The program also prepares students for certification or advanced degree programs leading to research, teaching (university, four-year college, community college, secondary and primary school), or health professions (medicine, dentistry, paramedical practice, medical technology, nursing, dental hygiene, physical therapy, etc.).

The basic courses offered in the department are common to many other 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 critical interest in biological science.

The introductory level, Introduction to Biology, 3:13, offers an introduction to the basic concepts of the natural world, and in particular, to the study of life. The course is offered in the fall semester, and is open to all students. The course is designed to be accessible to students with a wide range of backgrounds, and is intended to provide a foundation for further study in the biological sciences.

Beyond this "core" curriculum, the student has a virtually unrestricted choice of 100-level courses in zoology, to a minimum of 22 semester hours. A student may substitute 100-level course work in other areas of natural science or mathematics (inclusive of the 40-hour course required by the major) for up to one semester hour of the 32-hour total required in zoology. A student must also complete the 40-hour course for a B.A. or B.S. degree in zoology.

In other departments:
3:22:25 Calculus I
4:26 Calculus II

or

3:25:10 Calculus for the Biological Sciences

3:25:10

or

3:25:10 Calculus for the Biological Sciences

3:25:10
Honors
Students in the college-wide honors program may earn an honors degree in zoology by completing a total of at least 8 semester hours in 37:196 Honors Laboratory Research, 37:197 Honors Readings in Zoology, and 37:188 Honors Seminar in Zoology. A 3.0 overall grade point average as well as a 3.2 grade point average in zoology courses are required. A research paper, approved by the research supervisor, is also required at the conclusion of Honors Research.

Introduction to Research
The department offers 37:190 Introduction to Research to appoint 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 courses, 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 function. More than 50 percent of the doctoral students graduating from this department in the last two decades have been engaged in college or university teaching, while a substantial number of students completing their training with the M.S. degree has pursued terminal or professional positions, some of which require independent responsibility in performance or planning.

Prior to registration in August, all graduate students in zoology take a diagnostic examination covering topics in developmental biology, genetics, and physiology with an emphasis on cell physiology, molecular biology 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 an independent decision on his/her own 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, physiology, behavior, and parasitology. Most projects have a primary focus 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 two general areas: developmental biology, ecology, and behavior, genetics, and physiology. Each area section reflects 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, the choice of courses will be subject to the student's background and career goals. The student can receive credit for courses he or she 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 in the thesis and on related subject matter.

The M.S. degree without thesis requires 34 semester hours of graduate credit and a library research report. No more than 4 semester hours of the credit may be granted for the research report. Credit may be given in 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- to 200-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 prescribed by the advisory committee. On completion of the hours required for the major, the student may receive the M.S. degree on recommendation of the research program by the student's faculty advisor. The student must pass a written examination covering 4 to 6 of his/her graduate program in zoology, including the area of the student's research.

Master of Science in Biology
The M.S. program with thesis requires 30 hours of graduate credit. Ordinarily 6 to 8 semester hours are assigned to thesis research and writing. 6 to 12 semester hours to graduate courses in zoology, 8 semester hours to graduate courses in botany, and the remaining semester hours to free electives.

Zoology/LIBERAL ARTS 223
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 on the work reported in the thesis.

Doctor of Philosophy in Zoology

Each Ph.D. student's formal course-of-study requirements are determined by his or her doctoral advisory committee based on the student's background and current and prospective research interests.

The committee also determines what portion of the formal course work or total-credit 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 be the student's final examination. The examination covers the thesis and the specialized field the thesis represents.

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 through federal-government-funded, interdisciplinary training programs in cell and molecular biology and neurobiology. These programs also support postdoctoral fellows. Support through interdepartmental programs in genetics (predoctoral) and cancer (postdoctoral) is also available.

The department also participates in the University-sponsored program of teaching assistantships for graduate students. Students who apply for any departmental award 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 in the laboratories on the campus, or at other appropriate field stations.

Most prospective 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 spring semester.

Requests for appointment should include clear statements of research interest, if such interest has been defined at the time of application.

Admission

Applicants 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 her or her score. Although the department prefers graduate students who have completed undergraduate programs much like its own, it will consider applicants with backgrounds in biophysics, botany, biochemistry, and other related areas.

Facilities

The department is housed in a cluster of contiguous buildings. It has animal-care facilities for mammals, birds, reptiles, amphibians, fishes, and invertebrates, including pond and special facilities for research with viruses, DNA sequencing, fruit flies, and marine organisms. It has 12 walk-in and reach-in environmental chambers for special culture or animal care needs. There are three transmission electron microscopes, including one for teaching and another for research purposes, and one with high-resolution capabilities.

The equipment 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 differential. Cultivars of various sorts, including rangeland, high-speed, and ultra-high-speed models, are available.

Other special equipment includes electrophoresis, gas-liquid and high-performance liquid, and mass spectrometry apparatus; electron amplifying and recording equipment; and x-ray equipment and animals operated studies; a PDP-12 computer, and other desk-top computers; gas-flow and liquid chromatography and gas chromatographic and gas chromatographic detectors; KCl and visible spectrophotometers; densitometers; Coulter counters; instruments for field work in physical ecology; water tables, aquaria, and sea "instant ocean" microinjections; microinjections; the culture rooms; a cold shop, and cold rooms. Laboratories are also equipped for advanced research in the areas of which cells for specialized biochemical, biophysical, cytological, and other related techniques.

Iowa Lakeside Laboratory

Courses in field biology and aquatic biology at the Iowa Lakeside Laboratory extend the on-campus work in ecology. See the "Iowa Lakeside Laboratory" section of the Catalog.

Courses

Primarily for Undergraduates

For Undergraduate and Graduate Students

101 Introduction to Zoology

102 Comparative Animal Behavior

103 Principles of Animal Biology

104 The Air We Breathe

105 Marine Biology

106 Introduction to Marine Biology

107 Marine Biology

108 Marine Biology

109 Marine Biology

110 Marine Biology

111 Marine Biology

112 Marine Biology

113 Marine Biology

114 Marine Biology

115 Marine Biology

116 Marine Biology

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31189: Evolution of Genomics 2 a.h.
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College of Business Administration

The college is organized into six academic departments: Accounting, Economics, Finance, Industrial Relations, and Human Resource Management; Science, and Marketing.

The undergraduate and graduate programs of the college are fully accredited by the Accreditation Council for Business Education of 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 six departments. The B.B.A. student completes background studies either in the College of Liberal Arts 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 nonbusiness courses. Limited specialization in the student’s designated major.

The last 30 (or 45 of the last 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 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 may 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 2.5 grade-point average in all course work, and all course work attempted at the University, in all business and economics course work attempted at the University, in all course work attempted in the major and in all course work attempted at the University in the major.

Common Requirements

The B.B.A. candidate must satisfy these minimum common requirements:

- Rhetoric-communications
- Historical-cultural
- Literature
- Natural sciences (excluding mathematics)
- Psychology or sociology
- Social psychology
- Quantitative methods
- 8A-1 Introduction to Financial Accounting
- SA-6 Introduction to Managerial Accounting
- 8E-1 Principles of Economics
- 8E-2 Principles of Economics
- 8F102 Introduction Financial Management
- 8F-103 Introduction to Marketing
- 8L-47 Introduction to Law
- 8L-100 Administrative Management
- 8K-170 Computer Analysis

One of these courses fulfilling the requirement for a course in administrative processes under uncertainty:

- 6L-185 Business Policy
- 6K-185 Business Policy
- 6P-186 Managing the New or Small Business

- 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. The requirements for a specific major are established by the departments of the college.

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 the final transcript, the student must inform the Registrar’s Office when applying for the degree.

Business Minor

Students minor in another college of 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 course listed below will satisfy all requirements for the minor in business administration:

A computer programming course 3 s.h.
A mathematics course numbered 225C or higher 3 s.h.
A mathematics course numbered 225B or higher 3 s.h.
Principles of microeconomics 3 s.h.
Principles of macroeconomics 3 s.h.

Accounting

60:1 Introduction to Financial Accounting 3 s.h.
Accounting 3 s.h.

60:2 Introduction to Managerial Accounting 3 s.h.

60:4 Introduction to Financial Management 3 s.h.

60:100 Administrative Management 3 s.h.

60:47 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 100 sequence of M.B.A. core courses.

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 credit for some of the common requirements of the college. Information on the CLEP examinations may be available from the Liberal Arts Advisory Office.

Maximum Schedule
Course schedules of more than 16 semester hours for a semester or 9 for a summer session require approval of the assistant dean.

Pass/Fail Grading
Of the total semester hours required for a B.B.A. degree, up to 22 may be taken on a pass/fail or pass/no-pass basis with the consent of the advisor and instructor. However, a student may not count more than 16 semester hours of pass/fail or pass/no-pass credit in his or her last 60 semester hours of course work unless the student has the 2.5 GPA average and is a graduate of the college. Course grade requirements for satisfactory performance must be also taken pass/fail, nor may courses be the student's major. Pass/fail or pass/no-pass registration must be completed during the first three weeks of a semester or the first two weeks of a summer session. For courses taken on a pass/fail basis, an academic letter grade of C or above is recorded as a P; otherwise, this grade earned (D or F) is recorded.

Second-Grade Only Option

Unless otherwise indicated and with permission of the assistant 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 16 semester hours of work.

Admission

The college normally admits undergraduate students at the beginning of their junior year. Second-semester sophomore may be admitted if an accelerated program record has been established. Unconditional admission requires at least a 2.25 grade-point average (A=4.0) in all college-level courses undertaken, including all courses undertaken at The University of Iowa and all business and economics courses. The applicant should also have completed the following common requirements:

- Introductory Business Information,
- Introduction to the Study of Management,
- and an introduction to the Study of Economics, and other 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 during the freshman and sophomore years are counted toward the B.B.A. degree only if such courses are normally offered as regular lecture courses at The University of Iowa.

Eligibility requirements do not affect students. The college's admission committee reviews all applications and selects the students who meet established qualifications. Applicants who have minor deficiencies in meeting admission requirements may be granted conditional or probationary admission.

Interdepartmental Graduate Programs

The following interdepartmental graduate programs are offered in the College of Business Administration: Master of Arts (M.A.) in business administration, Master of Business Administration (M.B.A.), and Doctor of Philosophy (Ph.D.) in business administration. Joint degree options, allow M.A. in business administration or M.B.A. candidates to pursue a second graduate degree in another college, for information on the availability of the M.A. or M.B.A. in accounting and graduate programs in economics, see "Department of Accounting" and "Department of Economics" sections of the Catalog.

Master of Business Administration

The Master of Business Administration (M.B.A.) program is designed for individuals preparing for a professional administrative career in business or public sector. The program enhances career opportunities for the individual and at the same time provides industry and government with professional personnel required in a dynamic economy.

The curriculum is designed for college graduates in any field. Prior courses in business may be required for admission. From 32 to 60 semester hours are required, depending upon students' undergraduate academic background. For students with no prior business administration coursework, 60 semester hours of course work will be required. For students with prior course work in business administration, some of the foundation courses may be waived on the basis of exemption examinations or equivalent course work of high quality.

Undergraduate students at any institution may take courses as part of their undergraduate degree which are equivalent to one or more of the UI M.B.A. foundation courses. For advice on these equivalencies, contact the Graduate Programs in Business Office, College of Business Administration. In particular, seniors in the colleges of Liberal Arts and Engineering at The University of Iowa may use M.B.A. foundation courses to satisfy elective requirements in their undergraduate degree programs. Substantial prior course work may allow students to complete a bachelor's degree in four years and the M.B.A. degree in the fifth year.

Foundation Courses (27 semester hours)

16:192 Financial Accounting—M.B.A. 3 s.h.
60:181 Financial Management 3 s.h.
60:184 Managerial Behavior 3 s.h.
60:185 National Income Analysis 3 s.h.
60:186 Business Law—M.B.A. 3 s.h.
60:193 Computer Methods Management—M.B.A. 3 s.h.
60:197 Quantitative Methods—M.B.A. 3 s.h.
60:198 Management of Organizations—M.B.A. 3 s.h.
60:199 Society, Law, and Business—M.B.A. 3 s.h.
60:298 Marketing Management—M.B.A. 3 s.h.

In the M.B.A. integrated core and elective segments, the student continues the broad study began in the sequence of foundation courses listed above and pursues in greater depth more advanced study associated with their 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)
6A214 Managerial Accounting—M.B.A. 3 s.h.
6C261 Administrative Science 3 s.h.
6C265 Administrative Policy—M.B.A. 3 s.h.
or
6L265 Administrative Policy—M.B.A. 3 s.h.
6K271 Statistical Methods—M.B.A. 3 s.h.
6K273 Managerial Economic Theory—M.B.A 3 s.h.
6K276 Operations Research—M.B.A. 3 s.h.

Applied Core (9 semester hours)
Three of the following and as approved by the following:
6K280 Management Systems 3 s.h.
6L296 Industrial Relations—M.B.A. 3 s.h.
6M232 Marketing Management II—M.B.A 3 s.h.

Area of Concentration (6 semester hours)
In addition to courses required of all students, students must select, with the approval of the assistant director of the M.B.A. program, an area of concentration which includes at least 6 semester hours of course work in that area. Areas of concentration include administrative studies, finance, industrial relations and human resources, management systems, managerial accounting, and marketing. Requests for other areas of concentration may be approved.

Evening course offerings allow students to attend the M.B.A. degree on a part-time basis in Iowa City, Cedar Rapids, and the Quad-Cities. Part-time students usually take one or two courses each semester and complete the program in three to five years.

Executive M.B.A.
A special program, the Executive M.B.A., also leads to the Master of Business Administration degree. Admission is limited to experienced executives who want to broaden their management skills without interrupting their professional careers. Course work is presented in two academic years. Classes begin with one full week in Iowa City followed by classes one day a week alternating Fridays and Saturdays. Participants progress through the program together as a single group.

Further information about the program, fees, and application procedures may be obtained by contacting the director of the Executive M.B.A. Program, Graduate Programs in Business Office, College of Business Administration.

Master of Arts
The Master of Arts degree program in business administration is designed for students seeking specialization in one of several areas of business administration. It permits a research emphasis which then qualifies students for research or teaching positions in business schools and in governmental agencies. The program is available on both a thesis and non-thesis basis and is sufficiently flexible to permit specialization according to students’ interests and objectives. Students may select a major in administrative studies, finance, industrial relations, and human resources, insurance, and management systems. The minor may be developed from approved course combinations within the College of Business Administration or from outside the college.

All students in the M.A. program must satisfy the common body of knowledge requirement of the American Assembly of the Collegiate Schools of Business (AACSB). This means that candidates’ undergraduates or graduate course work must include study in accounting, quantitative methods, organizational behavior, management, finance, marketing, and the economic and legal environment pertaining to profit and/or non-profit organizations.

Requirements for the Master of Arts degree with thesis include:

- Major Area 9 s.h.
- Minor Area 6 s.h.
- Economic theory and/or organizational behavior 6 s.h.
- Electives 6 s.h.
- Total 30 s.h.

Requirements for the Master of Arts degree without thesis include:

- Major Area 12 s.h.
- Minor Area 6 s.h.
- Economic theory and/or organizational behavior 6 s.h.
- Electives 6 s.h.
- Research methodology 3 s.h.
- Research reports (2QW) 2 s.h.
- Total 35 s.h.

The minimum number of semester hours for each program is usually earned in courses exclusively for graduate students (200 level); but where appropriate, the student may take courses at the 100 level. Additional course work beyond the minimum semester hours may be required in order to meet the prerequisites for graduate courses in a major or minor area of study.

Students in the thesis program will be expected to defend the thesis in an oral examination and may be required to take a written and/or oral comprehensive examination over course work. A final oral examination is required in the nonthesis program.

Doctor of Philosophy
The M.B.A. program in business administration is designed to meet the career needs of individuals preparing for faculty research and teaching positions in academic institutions as well as for positions in business and government. The program is a four-year curriculum permitting students to develop a specialization according to their capabilities, background, and personal goals. Sufficient course work and related experience are provided so that students achieve competence in economics theory, statistical methods, teaching, and/or research as well as expertise in two areas of study.

Courses work in the Ph.D. program consists of prerequisites (as necessary), the Ph.D. core, major and minor areas of study, and dissertation research. Most students (including all with master’s degrees from AACSB accredited programs) take 60 semester hours of course work. Additional course work requirements may be imposed on others to guarantee satisfaction of business prerequisites or the Graduate College minimum hours requirement (72 semester hours of graduate credit, including dissertation credit taken before entering the U.I. Ph.D. program).

Prerequisite Courses
The common body of knowledge requirement of the AACSB must be satisfied in the undergraduate or graduate course work. This requirement includes courses in accounting, finance, management, marketing, organizational behavior, quantitative methods, and the economic and legal environment pertaining to profit and/or nonprofit organizations.

Core Courses
Core courses are designed to develop research method competency and to provide necessary background for study in more specialized courses. Graduate course work are required as follows: behavioral sciences (3 s.h.), economics (5 s.h.), issues in scientific inquiry (3 s.h.), and research methods/mathetics/quantitative analysis (12 s.h.).

To reflect the background and interests of individual graduate students, candidates consult with their advisors to establish satisfaction of core requirements.

Major Area of Study
A minimum of 12 semester hours of approved doctoral-level course work must be completed in one of the following areas: accounting, finance, human resources
Other Graduate Programs
Joint Programs
Joint programs have been established which allow students to pursue concurrently an M.A. or M.B.A. in the College of Business Administration and a J.D. in the College of Law, an M.A. in library science in the School of Library Science, or an M.A. in hospital and health administration in the College of Medicine. Such programs allow students to earn both degrees more rapidly by counting a portion of the graduate course work toward both degrees. These joint degree programs carry an exchange of 12 semester hours each between the J.D. and the M.B.A., and 9 semester hours each between the M.A. in library science or M.A. in hospital and health administration and the M.B.A.

Graduate Admission
Applicants seeking admission to graduate work in business must submit the Graduate College application form and the official transcript of all college work taken, and official Graduate Management Admission Test (GMAT) scores to the Admissions Office, Cabin Hall. Three letters of recommendation from former instructors or employers should be submitted to the Graduate Programs in Business Office, College of Business Administration, Graduate Record Examination (GRE) scores may be submitted in place of GMAT scores in the applying to the P.h.D in Business Administration program. See the "Graduate Programs" section of the Catalog for more information.

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 on a continuous basis to 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.

Institute for Entrepreneurial Management
The Institute for Entrepreneurial Management was created in 1976 to promote the entrepreneurial spirit among individuals; to assist prospective entrepreneurs in evaluating the economic viability of their proposed business ventures; to train owners/managers in the effective and profitable operation of their enterprises after they are successfully launched; and to provide career guidance for college students as well as others. These objectives are achieved primarily through a multidisciplinary research and continuing education program.

Institute for Insurance Education and Research
The Institute for Insurance Education and Research, housed in the college's continuing education unit in the field of insurance, initiates, conducts, and sponsors graduate and seminar programs 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.

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 combined on-campus and off-campus programs in order to reach the greatest possible percentage of their constituency. The staff members provide instruction to the specific needs of the labor movement in Iowa.
Management Center
The Management Center is a major continuing education branch of the college and provides relevant information to 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.

Interdepartmental Courses
For M.B.A. students only
See individual department listings for additional M.B.A. course offerings.

M.B.A. cooperative education mentors

Department: accounting

Assistant professors Dayne Van Vlokh, William C. Utterback, and Richard A. Grieme

M.B.A. department

Professional Program in Accounting
The Professional Program in Accounting at the University of Iowa is a three-year upper-division and graduate program which leads to a Master of Arts (M.A.) degree with a major field in accounting. Students may elect to receive the B.B.A. degree after successful completion of the first two years of the Professional Program. The M.A. program (three-year program) is designed to develop the technical proficiency and the conceptual, analytical, and communication skills required in the accounting profession. Students who wish only undergraduate-level preparation for the Certified Public Accounting (CPA) or Certified Management Accountant (CMA) examinations may meet their goal by completion of the first two years of the Professional Program. The M.A. program (three-year program) is designed to prepare candidates for careers in all areas of accounting and also provides advanced coursework which will prepare candidates for the CPA and CMA examinations, and which will also provide preparation for deciding leadership roles in the field of accounting. Students may apply for admission to the Professional Program in Accounting after completion of two years of preprofessional study which satisfies the general education requirements of the University, the business requirements of the College of Business Administration, and the admission requirements of the Accounting Department (see program 1 below). Students may also apply for the M.A. program after completion of a bachelor's degree with a major field in accounting from another institution (see program 2 below) or after completion of a bachelor's degree in a field other than accounting (see program 3 below).

Admission applications for program 1 must be submitted to the Assistant Dean of Undergraduate Programs in the College of Business.

Students in the Professional Program in Accounting must maintain a 3.0 grade-point average in all graduate-level accounting courses and must pass an oral comprehensive examination upon completion of the M.A. program.

Program 1
This program is for students completing their pre-professional program at the University of Iowa.

An undergraduate student at The University of Iowa who has completed the requirements for admission to the Professional Program in Accounting after completing 60 semester hours of course work, including the common requirements for the B.B.A. and the Statistics, Analysis, and after earning grades of A or B in 6A.1 Introduction to Financial Accounting and 6A.3 Introduction to Managerial Accounting, or the equivalent. Upon acceptance of their application for the Professional Program in Accounting, such students are designated as major majors.

After successful completion of the first two years of the Professional Program in Accounting, a student can receive the B.B.A. in Accounting.

These are the typical first, second, and third year requirements of the Professional Program in Accounting:

First Year
6A: 115 Introduction to Taxation 3 a.h.
6A: 131 Financial Accounting I 3 a.h.
6E: 179 Managerial Information Models 3 a.h.
6E:103 Microeconomics 3 a.h.

Second Year
6A: 132 Financial Accounting II 3 a.h.
6A: 145 Financial Accounting III 3 a.h.
6A: 144 Auditing 3 a.h.
6A: 131 Cost Accounting for Management Analysis and Control 3 a.h.
6L: 145 Law and Business 3 a.h.
Business policy elective 3 a.h.
Elective 3 a.h.

Third Year
6A: 220 Accounting Theory I 3 a.h.
6A: 221 Accounting Theory II 3 a.h.
Graduate accounting elective 3 a.h.
Graduate electives 12-15 a.h.
6A: 260 Accounting issues Series 0 a.h.

These courses are available upon unconditional admission to the third year of the program.

Program 2
This program is for students who have earned bachelor's degrees in a major field in accounting at other institutions.

Students who wish to enter the Professional Program in Accounting after having completed bachelor's degrees with concentrations in accounting from other institutions must apply for the M.A. program to the Associate Dean for Graduate Studies at The University of Iowa. Such students will normally be required to take only the third year of the Professional Program (Program 1 above) to complete the M.A. degree.

Program 3
This program is for students who have completed undergraduate degree in a field other than business administration can, with careful planning, complete the Professional Program in Accounting requirements in two calendar years after admission to the Graduate College. A nonbusiness undergraduate plan of study to enter the program should include as many first-year courses as the undergraduate program as possible. For students entering in the fall semester with no previous accounting or business courses taken, a typical first-year courses include:

6A: 214 Managerial Accounting—M.B.A. 3 a.h.
6A: 116 Introduction to Taxation 3 a.h.
6A: 132 Financial Accounting II 3 a.h.
6A: 102 Financial Accounting II 3 a.h.
6E: 103 Price, Employment, and Production Theory 3 a.h.
6E: 101 Microeconomic Methods M.B.A. 3 a.h.

6E: 104 Managerial Finance M.B.A. 3 a.h.
6E: 106 Marketing Management M.B.A. 3 a.h.
6E: 107 Quantitative Methods M.B.A. 3 a.h.
**COURSES**

**Undeclared:** Please refer to the Catalog for specific course offerings.

**Primary for Undergraduates and Graduates**

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**ECONOMIC**

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**BUSINESS ADMINISTRATION**

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**Human Resources and Organizational Behavior**

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**Economics**

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<td>MKT 201</td>
<td>Principles of Marketing</td>
<td>3.00</td>
</tr>
<tr>
<td>MKT 210</td>
<td>Consumer Behavior</td>
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</tr>
<tr>
<td>MKT 220</td>
<td>Sales and Distribution Management</td>
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</tr>
<tr>
<td>MKT 230</td>
<td>Marketing Research</td>
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**Human Resources and Organizational Behavior**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>HR 201</td>
<td>Human Resource Management</td>
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<tr>
<td>HR 210</td>
<td>Labor Relations and Employee Relations</td>
<td>3.00</td>
</tr>
<tr>
<td>HR 220</td>
<td>Personnel Management</td>
<td>3.00</td>
</tr>
<tr>
<td>HR 230</td>
<td>Work and Organizational Behavior</td>
<td>3.00</td>
</tr>
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**Information Technology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>IT 201</td>
<td>Introduction to Information Technology</td>
<td>3.00</td>
</tr>
<tr>
<td>IT 210</td>
<td>Database Management</td>
<td>3.00</td>
</tr>
<tr>
<td>IT 220</td>
<td>Network Administration</td>
<td>3.00</td>
</tr>
<tr>
<td>IT 230</td>
<td>Web Development</td>
<td>3.00</td>
</tr>
</tbody>
</table>
Economics/BUSINESS ADMINISTRATION

prosperity and depression, inflation and unemployment, big business and labor unions, and hundreds of other matters that intimately affect the way people live.

The purpose of study in economics is to develop an understanding of how complex economic systems work and to acquire training in the methods of economic analysis which can be applied to a wide range of economic problems.

Undergraduate Majors

The bachelor's degree programs in economics provide an excellent educational background for a variety of positions in business and government. Graduates find employment in banking, financial institutions, industrial firms, and trade organizations, and in federal, state, and local government agencies dealing with economic policy, agitation, and analysis. Economics is also regarded as excellent preparation for law 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 statistics. The department offers three undergraduate degrees in economics—the B.A. and B.B. degrees in the College of Liberal Arts and the B.B.A. in the College of Business Administration. The B.A. and B.B. programs are designed for a well-rounded liberal arts education. Requirements for the B.B.A. degree emphasize instruction in the business fields of accounting, finance, marketing, business law, and management. For descriptions of the B.A. and B.B. degree programs in economics, see the "College of Liberal Arts" section of the Catalog.

Bachelor of Business Administration

In addition to the common requirements for the College of Business Administration, the B.B.A. degree in economics requires eight semester hours in 100-level economics courses, including:

6E:103 Microeconomics 3 s.h.
6E:105 Macroeconomics 3 s.h.

Master of Arts

The department offers a three-semester M.A. program in applied economics, with options in environmental 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:

6E:160 Statistical Methods in Economics 3 s.h.
6E:202 Price Theory 3 s.h.
6E:204 Econometrics I 3 s.h.
Economic history, history of economic thought, or elective* 3 s.h.

Second Semester

6E:164 Methods of Quantitative Economics 3 s.h.
Electives 9 s.h.

*The M.A. program requires a course in economic history or history of economic thought.

In addition to the core courses (15 semester hours), the student has the option of taking 13 hours of electives and writing a thesis. (4 hours) for a minimum total of 32 semester hours of graduate credit or taking 15 hours of 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 apply for 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 credit 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 core sequence:

First Semester

6E:190 Mathematics for Economists I 3 s.h.
6E:160 Statistical Methods in Economics 3 s.h.
6E:203 Microeconomics I 3 s.h.
6E:204 Macroeconomics I 3 s.h.

Second Semester

6E:191 Mathematics for Economists II 3 s.h.
6E:205 Microeconomics II 3 s.h.
6E:206 Macroeconomics II 3 s.h.

Courses

Primary for Undergraduates

Note: IE:1 and IE:2 may be taken in either order or they may be taken simultaneously; they satisfy the general education requirement in social sciences.

6F:101 Introduction to Economic Systems 3 s.h.
6F:211 Macroeconomics 3 s.h.
6F:221 Microeconomics 3 s.h.
Field course 3-6 s.h.

Fourth Semester

6F:222 Macroeconomics II 3 s.h.
Field course 3-6 s.h.

An additional four semester hours in economic history, history of economic thought or economic methodology are to be completed during the third year of residence. Written examinations in microeconomics and macroeconomics before the second year and a substantial research paper before the beginning of the third year complete the core requirements.

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 student must achieve at least a 3.0 grade-point average in the major area courses.

The student must present and defend a dissertation prospectus during the third year. Admission to candidacy is granted upon success of that defense.

Submission of the completed dissertation and 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 one semester (or summer session) each year. The typical amount of service in each term is 25 hours per week.

Economics/BUSINESS ADMINISTRATION

233
FInance

Department chair: Richard A. Stevenson.
Assistant professor: William M. Beekman.
Instructor: Edward M. Flurry, Michael Murray, Susan M. Phillips, Carol Schweitzer, Ernest V. Zellie.
Graduate degree offered: B.B.A., M.A., M.B.A., Ph.D.

Graduate Program

The undergraduate finance program deals with the theory, organization, and operations of the financial system from both the socio-economic and managerial viewpoints. Students are expected to develop analytical abilities and to present their analyses in both written and oral form.

Students graduating with a major in finance may specialize in either finance or insurance. Finance specialists may look toward managerial positions in control or treasury work in non-financial businesses, in the entire range of financial businesses, or in non-profit or government organizations. Insurance specialists may find employment in the management departments in public and private agencies, in large businesses, or in insurance companies. The education received is either area is consistent with progress toward responsible management positions.

Requirements for the Bachelor of Business Administration degree with the Finance major and specialization in either finance or insurance are as follows:

Finance

6F:171 Statistical Analysis
6F:111 Investments
6F:118 Financial Markets and Institutions

At least 2 semester hours of accounting beyond the basic core, followed by any two of these:
6F:112 Accounting
6F:114 Commercial Banking
6F:118 Case Problems in Financial Management

Insurance

6F:121 Statistical Analysis
6F:111 Investments

3F:112 Life and Health Insurance

At least one of the following:
6F:120 Public Economic Security Programs
6F:126 Risk Management Three additional hours of courses specified by the student's advisor.

Graduate Programs

Refer to "Interdisciplinary Graduate Programs" at the front of this section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

6F:100 Cooperative Education Internship
6F:100 Introductory Financial Management
6F:101 Directed Readings in Finance

Undergraduate graduates may select topics in business.

6F:102 General Insurance

Theory of risk and risk bearing; arrangements for dealing with risk insurance industry; types of insurance; function of underwriters and government regulations on insurance; social insurance; bonds and insurance; regulation of insurance, life insurance, and non-life insurance.

Prerequisites: E:110 and S:2.

6F:111 Investments

Analysis of financial security prices from the viewpoint of the individual, present value; security market, industry development. Prerequisite: E:100 or consent of instructor.

6F:126 Risk Management

Three additional hours of courses specified by the student's advisor.

Finance

6F:110 Introductory Financial Management

6F:111 Investments

6F:112 Accounting

6F:118 Case Problems in Financial Management

6F:120 General Insurance

6F:126 Risk Management

6F:121 Life and Health Insurance

Life, health and annuity contracts from the viewpoints of the subscriber, insurer, government, and Cena. Prerequisites: E:110 and S:2. Examinations: financial, investments, regulation, group insurance, estate planning. Prerequisite: E:120 or consent of instructor.

6F:150 Public Economic Security Programs

Government activities designed to stabilize the economic system and alleviate poverty, caused by lack of employment, unemployment compensation, AFDC, SSI. Special programs included OASDI, unemployment compensation, AFDC, SSI. Special programs included OASDI, unemployment compensation, AFDC, SSI. Special programs included OASDIFileNotFoundException: Resource.java:

6F:175 Actuarial Principles of Life Insurance

6F:176 Real Estate and Urban Land Economics

Prereq: Principles of economic analysis of real estate markets, mortgage financing, appraisal principles, investment analysis, and land development.

Prerequisites: E:120 and S:2, or consent of instructor.

6F:177 Entrepreneurship and the Small Business

Characteristics of the successful entrepreneur and of making the decision to go into business for one's self. Development of a proposal for a new business. Prerequisites: E:120 or consent of instructor.

6F:178 Ageny, Property and Liability Insurance

6F:120 Financial Management

6F:121 Case Problems in Financial Management

6F:126 Risk Management

6F:121 Life and Health Insurance

6F:120 Life and Health Insurance

Life, health and annuity contracts from the viewpoints of the subscriber, insurer, government, and Cena. Prerequisites: E:110 and S:2. Examinations: financial, investments, regulation, group insurance, estate planning. Prerequisite: E:120 or consent of instructor.
Marketing

Chair: Peter J. Riese
Faculty members: Peter C. Riese, associate professor Frank J. Barrow, David A. Gory, associate professor, John A. Grunor, associate professor, Mark S. Mostaner
Status: B.A. B.M.A., M.B.A., Ph.D.

Undergraduate Program

The Department of Marketing offers courses that help undergraduate students understand the social as well as the economic role of marketing.

Several decades ago the study of marketing dealt simply with business activities involved in the flow of goods from production to consumption. Today the study of marketing includes principles that are widely applicable; they are as relevant in the marketing of the arts, athletics, and social causes as they are in the marketing of goods and services.

A major in marketing includes study in the behavioral sciences, communications, statistical analysis, and computer methods.

Students graduating with majors in marketing may find job opportunities in jobs such as market analyst, merchandiser-buyer, public relations agent, purchasing agent, advertising manager, or sales representative, in a variety of organizations, both profit and nonprofit.

The requirements for the Bachelor of Business Administration degree with a major in marketing are as follows:

- 45-71 Statistical Analysis
- 462 Marketing Research

In addition to the minimum common requirements for the B.B.A. degree, the student must choose at least three, but no more than seven of the following:

- 463 Marketing Distribution Systems
- 464 Consumer Behavior
- 465 Advertising Theory and History
- 466 Marketing Communication
- 467 Service Management
- 468 Management

Graduate Program

See "Interdepartmental Graduate Program" in the front of this section of the Catalog.
### Primarily for Graduates

**EN 501 Elective Readings in Marketing**
- This course offers a selection of readings on recent developments in marketing. Prerequisite: consent of instructor.

**EN 502 B.S. Research Report**
- This course is designed for B.S. candidates only. Prerequisite: consent of instructor.

**EN 505 Contemporary Topics in Marketing**
- Special topics in contemporary issues at the graduate level. Prerequisite: consent of instructor.

**EN 521 Marketing Management—M.B.A.**
- Interval and advanced environment of marketing decision-making; behavioral science applied to consumer behavior, market and micro market appreciation, marketing goals, plans, and strategies. Prerequisites: EN 196 and EN 210.1.

**EN 524 Marketing Research Methods**
- Methods of design and analysis of marketing research studies, including surveys and laboratory and market testing techniques, development of marketing research instruments, and the formulation of marketing strategies. Prerequisite: consent of instructor.

**EN 525 Buyer Behavior**
- Study of behavior of consumers and industrial buyers; examination of research methods and findings from behavioral sciences. Prerequisite: consent of instructor.

**EN 526 Product Management**
- Importance of product planning, development, and management as corporate strategy variables; application of product portfolio theory, search for new product ideas and their evaluation, structure and decision-making processes in appropriate firms; discussion of the concept of new products, and management of product flow. Practically for M.B.A. students. Prerequisite: consent of instructor.

**EN 529 Marketing Communications**
- Examination of marketing communications as dialogues between producers and consumers and how promotional mix elements: emphasis on advertising, sales promotion, and personal selling. For M.B.A. students with an prior research work in advertising, marketing, or promotion strategy. Prerequisite: consent of instructor.

**EN 529 Methods in Marketing**
- Small course in development of methods and concentration on those methods as relate to marketing problems: regression analysis, factor analysis, discriminant analysis, canonical analysis, and consumer behavior. Illustrations from marketing literature. Prerequisite: consent of instructor.

**EN 540 Marketing Models**
- Development of theoretical and operational models in marketing with emphasis on recent advances; logical flow and quantitative models which influence the current state of marketing science. Prerequisite: consent of instructor.

**EN 541 Psychological Scaling in Marketing**
- Service for a number of psychologists, scaling techniques which have applications in consumer research in marketing; topics include definitions and concepts of scales, matrix-techniques, ranking-multidimensional scaling models, nomothetic scales and0 criteria analysis, some empirical data collection methods and computer algorithms such as ALCAL and MONANOVA. Prerequisite: consent of instructor.

**EN 543 Business in Marketing**
- Examination of current marketing literature and current research interests of faculty and students. Prerequisite: consent of instructor.

**EN 570 Research in Marketing**
- Individually guided research projects or approved topics in marketing. Prerequisite: consent of instructor.

**EN 570 Trends in Marketing**
- Prerequisite: consent of instructor.

**EN 570 Field Studies in Marketing**
- Supervised knowledge regarding various aspects of marketing acquired in real problem is ongoing business firms. Individuals or teams of students conduct field studies under faculty supervision. Prerequisite: consent of instructor.
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
Gross anatomy; biochemistry; histology; physiology; general pathology; oral pathology; pharmacology; microbiology.

Restorative Dental Sciences
Gross, microscopic, and radiographic dental anatomy; dental materiales; endodontics; operative dentistry; fixed partial prosthesis; removable prosthesis.

Oral Medicine
Preventive dentistry; oral diagnostics; dental radiology; oral pathology; anesthesiology and pain control; oral surgery; periodontiology. In addition, there are selected courses in the bioclinical sciences program which are correlated with the basic and clinical sciences.

Community Dentistry
Ethics; epidemiology; nutrition; preventive dentistry; community health; principles of human behavior; dental economics; dental jurisprudence; geriatrics.

Pediatric Dentistry
Facial 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.

Third-year dental students rotate through a series of "clerkships" which expose them to each of eight clinical programs.

Fourth-year dental students are involved in the delivery of comprehensive dental care in an environment which simulates conditions in private dental practice. Fourth-year students also are exposed to various extramural health programs that include state and University Hospitals and the State Department of Health; also, there are preceptorships in which fourth-year dental students assist in selected dental offices throughout Iowa. The preceptorships expose students to facets of dentistry usually not observable in an academic setting, such as practical business management procedures, appointment-box control, the dynamics of presenting treatment plans to private patients, and the relationship of the dentist 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 has been given 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 the student's 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 Dentisty Licensure Examination

The states of Kansas, Colorado, Indiana, 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 clinical examination previously given by the states individually. These examinations are administered at several testing sites located at schools of dentistry within the region. Examination dates are determined by the Central Regional Dental Testing Service and are available from its administrative 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 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; the Bowen Science Building; University Hospital; and a Health Sciences Library. The Health Sciences Library houses all of the University's special health science holdings, a total of 173,000 volumes, including the College of Dentistry's collection of more than 18,000 volumes on dentistry and allied sciences, as well as about 250 dental journals that the college currently receives. The library receives a total of 2,800 journals from the combined health professions.

The Dental Science Building consists of two connected four-story wings located on either side of a mall. The south wing is devoted to clinical teaching, with various departmental clinic facilities, support laboratories, clinical research space, offices, and a teaching learning center. The north wing houses a variety of teaching, administrative, and research facilities, including teaching laboratories, research laboratories, administration area, an individual production center, and the programs in community dentistry.

Student Organizations
All dental students are eligible for membership in the American Student Dental Association through their local organization. The Iowa Student Dental Association. In addition, there are local chapters of the American Association of Women Dentists and the American Society of Dentistry for Children. Students who rank in the upper 12 percent of the senior class are eligible for election to Omicron Kappa Upsilon, national scholastic honorary dental society. The national dental professional fraternities, Delta Sigma Delta and Psi Omega, have chapter houses at Iowa, and both have spouses' 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 per the first three years of the program. A fee for expendable laboratory supplies is charged each of the first 2.5 years. A $100 purchase fee will be deposited; this will be refunded 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 tuition plus $2,500 each year of their undergraduate professional studies. Eligibility is established by completion of the College Scholarship Service Financial Aid Form, which includes a parents' financial statement. Dental students may also apply for Guaranteed Student Loans through banks and other lending agents; students may borrow a maximum of $25,000 during the professional program. Interest rates on Health Professions Loans and Guaranteed Student Loans are comparatively low and are repayable over an extended period of time after the recipient concludes 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 welfare committee in the College of Dentistry. See the "Financial Aid" section of the Catalog or inquire at the Office of Student Financial Aid for updated information regarding financial assistance available to dental students.

Admission
Applications are accepted beginning June 1 of the year prior to the year for which application is made. The closing date for applications is November 30. The prospective dental student is encouraged to enroll on an educational program that will lead to a standard bachelor's degree. This will allow the student 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 (see Combined Liberal Arts-Dentistry Course).

General Basis for Admission
Each applicant must submit to the American Association of Dental Schools Application Service a completed application form. Applicants will be accepted on the basis of availability from the University Office of Admission.

Preclinical Studies
The basic academic requirement for admission to the College of Dentistry is the completion of one year of 18 semester hours of academic study at an accredited college. In exceptional circumstances, candidates with fewer than 90 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 preclinical program of study should include:

Rhetoric
Satisfactory accomplishment in English composition, rhetoric, and speech communicates 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 general chemistry (equivalent to eight semester hours each) of which one-fourth must be laboratory work, and one year of which one-fourth must be laboratory work.

Biology
One year (equivalent to eight semester hours) which must include appropriate laboratory work, with the course being selected from a one-year course in either general biology or zoology and botany (not botany alone).

Electives
Sufficient course work in the social sciences, philosophy, psychology, history, foreign languages, and mathematics to provide a well-rounded educational background. The dental admission 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
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 Pathology and Diagnosis, Oral Surgery, Orthodontics, Pedodontics, Periodontics, Preventive and Community Dentistry, and Removable Prosthodontics.

Nondepartmental Courses
112/120 First Year Continuing Seminar 0 s.h.
112/125 Introduction to General Dentistry 2 s.h.
121/122 Medical Survey and Dental Hygiene 2 s.h.
121/145 Mentoring Program 0 s.h.
112/150 Second Year Continuing Seminar 1 s.h.
112/160 Basic Science Options 0 s.h.
Selection from a series of elective mini-courses to emphasize the scientific basis of dental practice.

Clinical Courses
Clinical experience with cases for pediatrics, young adults, adolescents, local anesthesia, and comprehensive care. One-year clerkships, rotations, mini¬course, and comprehensive care experiences.

Clinical Management Concepts
Faculty: professor Thomas V. Gartner assistant professor Howard S. Dell, Richard Reishman assistant professor Lawrence E. Gartner, Robert J. Gartner, departmental chairman, and Howard S. Dell, division chairman.

Clinical Management Seminar
Weekly seminars offer opportunities for students to participate in patient care under the supervision of the dentist.

Preclinical Rotations
Clinical Management Seminar
Weekly seminars offer opportunities for students to participate in patient care under the supervision of the dentist.

Basic Sciences in the Dental Curriculum
The following science courses are required by the College of Dentistry's general requirements.

106/101 Human Gross Anatomy for Dental Students 4 s.h.
112/112 General Pathology 4 s.h.
112/114 Oral Microanatomy and Embryology 4 s.h.
61/101 Dental Microbiology 4 s.h.
60/120 Introduction to Human Pathology 4 s.h.
71/120 Preventive Medicine for Dental Students 4 s.h.
72/120 Mammalian Physiology 4 s.h.
92/101 Biochemistry for Dental Students 4 s.h.

Endodontics
112/125 Introduction to General Dentistry 2 s.h.
121/122 Medical Survey and Dental Hygiene 2 s.h.
121/145 Mentoring Program 0 s.h.
112/150 Second Year Continuing Seminar 1 s.h.
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Dental Practice
Clinical experience with cases for pediatrics, young adults, adolescents, local anesthesia, and comprehensive care. One-year clerkships, rotations, mini¬course, and comprehensive care experiences.

Preclinical Rotations
Clinical Management Seminar
Weekly seminars offer opportunities for students to participate in patient care under the supervision of the dentist.

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71/120 Preventive Medicine for Dental Students 4 s.h.
72/120 Mammalian Physiology 4 s.h.
92/101 Biochemistry for Dental Students 4 s.h.
Clinical Dental Hygiene. In 60:240
Advanced Periodontics for Dental
Hygiene Students. Each student is
assigned to work with a graduate
student in periodontics performing
procedures on adults who have active
periodontal disease. This experience
not only advances dental hygiene clinical
skills, but provides both the hygiene and
graduate dental students with a learning
experience emphasizing the team
approach.

Senior receives additional clinical
experience in 60:446 Clinical Dental
Radiography for Dental Hygienists. Weekly
lecture and seminars reinforce clinical
learning in 60:446 Seminar: Dental
Hygiene Concepts and Practice.
Senior students also are enrolled in
60:547 Practicum: Community Dental
Health; 60:548 Seminar: Community
Dental Health: 7F:121 Designing and
Developing Instructional Materials; and
220:110 Biostatistics.
Courses traditionally taught as isolated
subject-oriented units, such as dental
health education, public health, and
audiovisual media, are integrated into
an integrated core. Learning emphasis is
on the relationship between the
underlying theory and practical
application of community dental health.
Weekly field experiences enables
students to apply knowledge of human
behavior, basic principles of
communication skills, educational and
research techniques and to design,
supplement, and critique dental health
programs 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, four 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 of 62
semester hours of college course work.
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 zoology or general
biology—17.8 Principles of Animal
Biology;
Three semester hours of inorganic
chemistry—4.9 General Chemistry I;
Five semester hours of organic
chemistry, including biochemistry—6.8
General Chemistry II, 4.9 General
Chemistry Laboratory;

Four semester hours of
microbiology—61.164 Microbiology;
Three semester hours of nutrition—
17.145 Nutrition;
Three semester hours of
psychology—60.1 Elementary
Psychology;
Three semester hours of sociology—
34:1 Introduction to Sociology
Principles;
Four semester hours of
anatomy—60.1 Human Anatomy;
Four semester hours of
three-year abbreviated dental hygiene
program do 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 admit
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
their 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
dentists in dental hygiene continues, the
graduate dental hygiene program fills
the need for preparing graduates to
contribute toward the advancement of
new knowledge in dental hygiene.
Therefore, graduate program goals
place emphasis on the acquisition of
advanced scientific knowledge in the
biological and social sciences and basic
knowledge of and experience in
community dental hygiene.

The curriculum design provides
students 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 relationship of
plaque to caries and periodontal
disease. The core of the first year is
intensive study in plaque, emphasizing
its significance in dental hygiene, and
the prevention of dental diseases by
inhibition and antimicrobial agents.

In the social science area, students
consider the implications of applied
Fixed Prosthodontics

Department Head: Kenneth A. Turner
Faculty: Professor, Associate Professor, Assistant Professor

Coursework:
- Principles of fixed prosthodontics
- Materials and their properties
- Clinical procedures and techniques

Examinations:
- Final examination
- Clinical evaluation

Postdoctoral Programs

The department offers Master of Science and Master of Science in Dentistry programs. The primary purpose of the Master of Science program in fixed prosthodontics is to train and prepare dentists for careers in fixed prosthodontics education and research. The certificate program is designed primarily for individuals seeking to further prepare themselves for private practice in fixed prosthodontics. Both programs satisfy the formal training requirements for eligibility for the American Board of Prosthodontics examination.

Master of Science

The program gives major emphasis to fixed prosthodontic theory and treatment, and includes seminar courses in other specialties of dentistry. Curriculum includes a course in research methodology, a course in prosthodontics or elementary statistical techniques and inference, and course work in the general area of basic sciences. A research project and thesis is also required for the master's degree.

Certificate Program

The department offers a certificate program which provides more clinical experience than the M.S. program, and does not require a thesis. The certificate also satisfies the formal training requirements for eligibility for the American Board of Prosthodontics examination.

Admission

The minimum requirements for admission into the program consist of the minimum requirements for admission to the Graduate College. In addition, the student must hold a D.D.S. or D.M.D. degree or its equivalent.

Courses

15100. Prosthodontic Materials Laboratory 3.0
15101. Dental Materials 3.0
15102. Orthodontic 3.0
15103. Fixed Prosthodontic Technique Laboratory 3.0
15104. Fixed Prosthodontic Clinical Practice 3.0

Advisory Committee

Professor of Prosthodontics
Assistant Professor of Prosthodontics
Assistant Professor of Prosthodontics

Graduate Program

The Graduate Program in Prosthodontics 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 the program 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 45 semester hours or specified graduate-level coursework. Preparation of an acceptable thesis based on original research is required. Final defense of the thesis and examination of the candidate by an examining committee is a prerequisite to graduation. The thesis must be submitted to the College of Graduate Studies and in a form approved by the graduate council. The student must maintain a minimum cumulative grade point average of 3.0 and must have a minimum of 15 hours of coursework at the 500 level or above.

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

DD.S. Program

2810 Operative Dentistry Seminar I 2 h.
Basic study of the evaluation of dental materials and methods to the restoration of operative dentistry.

2810 Dental Laboratory Techniques 1 h.
Lectures and seminars covering dental materials, anatomy, statics, and methods of repair of laboratory procedures used in dentistry.

2811 Dental Laboratory Techniques 1 h.
Lectures and seminars on dental materials, anatomy, statics, and methods of repair of laboratory procedures used in dentistry.

2812 Operative Dentistry I 1 h.
Lectures and seminars pertaining to operative dentistry and clinical procedures used in dentistry.

2813 Operative Dentistry II 1 h.
Lectures and seminars pertaining to operative dentistry and clinical procedures used in dentistry.

2814 Operative Dentistry III 1 h.
Lectures and seminars pertaining to operative dentistry and clinical procedures used in dentistry.

2815 Operative Dentistry IV 1 h.
Lectures and seminars pertaining to operative dentistry and clinical procedures used in dentistry.

2816 Operative Dentistry V 1 h.
Lectures and seminars pertaining to operative dentistry and clinical procedures used in dentistry.

2817 Operative Dentistry VI 1 h.
Lectures and seminars pertaining to operative dentistry and clinical procedures used in dentistry.

2818 Operative Dentistry Seminar VI 1 h.
Teaching and current research in dental materials and their use in operative dentistry.

Research Program

2820 Operative Dentistry Seminar I 2 h.
Topics, advances, research seminars, and literature review for research project. Review of research protocols.

2821 Operative Dentistry Seminar II 2 h.
Topics, advances, research seminars, and literature review for research project. Review of research protocols.

2822 Operative Dentistry Seminar III 2 h.
Topics, advances, research seminars, and literature review for research project. Review of research protocols.

2823 Operative Dentistry Seminar IV 2 h.
Topics, advances, research seminars, and literature review for research project. Review of research protocols.

2824 Operative Dentistry Seminar V 2 h.
Topics, advances, research seminars, and literature review for research project. Review of research protocols.

2825 Operative Dentistry Seminar VI 2 h.
Topics, advances, research seminars, and literature review for research project. Review of research protocols.

Clinical Studies

2840 Operative Dentistry Advanced Clinical I 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2841 Operative Dentistry Advanced Clinical II 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2842 Operative Dentistry Advanced Clinical III 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2843 Operative Dentistry Advanced Clinical IV 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2844 Operative Dentistry Advanced Clinical V 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2845 Clinical Research I 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2846 Clinical Research II 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2847 Clinical Research III 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2848 Clinical Research IV 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2849 Clinical Research V 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

2850 Clinical Research VI 2 h.
In depth study of a specific operative procedure. Seminar and research assignments on a regular basis.

Master of Science Program

Advanced instruction is available for graduate-level students in health sciences and related fields in preparation for specialization practice or careers in teaching and research. Candidates for the Master of Science degree are expected to develop substantial ability for research into the mechanisms of oral disease, 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 45 semester hours of graduate credit and a thesis. The required courses are:

80:206 Problems 2 h.
81:121 Statistical Methods in the Biological Sciences 3 h.
89:201 General Pathology for Medical Students 5 h.
89:202 Systematic Pathology for Medical Students 7 h.
89:230 Research in Oral Pathology and Diagnosis 2 h.
89:240 Histopathology 3 h.
89:250 Pathology Processes 3 h.
89:256 Advanced Oral Pathology 3 h.
89:278 Dental Sciences Research Methodology 2 h.
89:189 Basic Chirurgologic Science 4 h.
89:180 Topics in Oral Pathology 1 h.
89:200 Oral Pathology and Diagnosis Literature Review 2 h.

The tools for research are determined for each student after consultation with the major adviser. Since most graduate students in advanced research programs have already published, most 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 satisfactory grade in the final comprehensive examination at the end of the predoctoral program. The examination consists of a part of the final examination given by the College of the Graduate Faculty at the conclusion of the program.

Required courses are:

89:180 Pathology in Oral Pathology 1 h.
89:200 Oral Pathology and Diagnosis Literature Review 2 h.

Clinical Pathology and Diagnosis

Hast, Gilbert E. M.D.
Family: professor; Lee A. M.D., Gilbert E. M.D., professor; Helen H., M.D., Helen H., M.D., Helen H., M.D.

Dentistry

Sugihara, Harvey A. M.D., professor

Sugihara, Harold L. M.D., William J. M.D., William J. M.D.

Takahashi, Roy W. M.D., Phillip A. M.D., Martin L. M.D., Martin L. M.D.

Shull, William M. M.D., Roy M. M.D., Roy M. M.D.

Panesar, George C. M.D., The Oral (M.D.) Degree Program.

Predoctoral Program

The department's primary objective is to provide instruction to dental students and other health-profession students in the anatomy 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 physical examination of patients to identify systemic diseases and their influence on dental therapy, and to influence the clinical treatment on systemic diseases.
Oral and Maxillofacial Surgery/DENTISTRY

carefully considered in planning the structure and scope of training. The residency period covers three years of hospital training, providing an orientation to hospital procedures, integration of basic and clinical sciences, acquisition of the principles of surgery, and familiarization with the various aspects of health services.

Competence in clinical oral surgery requires knowledge of the basic medical sciences related to the specialty. Therefore, in addition to hospital and clinical training, the resident takes advanced course work in such subjects as applied pharmacology, surgical anatomy, pathology, physiology, and microbiology, and reviews such closely related disciplines as anesthesiology, radiology, physical diagnosis, and laboratory procedures.

The assumption of increased responsibility and the opportunity for clinical and operating room experience are important aspects of residency training.

The resident gains clinical training in anesthesia through an assigned rotation in the Department of Anesthesiology, Previous advanced training in physical diagnosis, physiology, pharmacology, and pathology now assume greater clinical significance. Increased responsibility is the operating room as first assistant and surgeon further develops surgical judgment and skills.

The development and implementation of a research project under staff supervision enhances the value of the residency period.

The senior resident may be given responsibility for major oral surgical cases during rotations at the nearby hospitals and Veteran's Administration Medical Center. The senior resident is assigned on a rotational basis as a clinical and hospital coordinator, and assumes responsibility to qualify for examination for the American Board of Oral and Maxillofacial Surgeons.

Master of Science Degree

Requirements for the Master of Science degree may be completed during residency. The M.S. program comprises a three-year course of integrated didactic and clinical study, and includes a research project and the preparation of a thesis.

Admission

Admission is limited to July 1 of each year for a full three-year program. The application form should arrive in the Admissions Office on or before September 1 for admission July 1 of the next academic year.

The Graduate Record Examination General Test is required.
Orthodontics

Department Head: Jon S. Clauer
Faculty: Florence Adena, Russell D. Buhler, Richard M. Jenkins, Charles R. Krzeminski
Assistants: Robert H. Bixby
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 39-month program including lecture courses, seminars, clinical treatment, and a research paper, qualifies a student for the Certificate of Orthodontics. If a student successfully completes the 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 provides learning and research opportunities in surgical orthodontics, cleft lip and palate treatment, speech pathology, animal experimentation and human growth.

Admission

Admission requires the D.D.S. degree, or its equivalent, and satisfactory standing in Graduate College requirements.

The application deadline is December 1 for the starting class July 1. Applicants will be required to come to the University for interviews with the faculty of the department.

Courses

88-115 Growth and Development
88-120 Orthodontic Diagnosis
88-120 Orthodontic Diagnosis and its Biological Basis
88-150 Orthodontic Treatment
88-170 Orthodontic Clinic
88-175 Orthodontic Practice

Pedodontics

Department Head: Stephen K.V. Wahl
Associate professors: David H. Erickson, Stephen J. Grether, Gilbert N. Hulbert, James B. Walter
Assistant professor: James D. Ochs
Adjunct assistant professor: Loretta Lundell
Associate professor: Mary H. Wurf

Degree offered: M.S. (certificates also offered)

The Department of Pedodontics provides instruction for dental pedodontic students in the prevention and treatment of oral problems of infants, children, and the young. Instruction combines didactic, laboratory, and clinical experiences. It gives special consideration to reviewing current literature and dealing with special problems of handicapped children, and emphasizing effectiveness of 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 Commission on Dental Education of the American Dental Association.

Students are trained in all phases of pedodontics, to permit them career
Courses

**Predoctoral**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.111</td>
<td>Introduction to Periodontology</td>
<td>3.5</td>
<td>Fundamentals of periodontology for dental hygienists. Preventive care.</td>
</tr>
<tr>
<td>42.146</td>
<td>Advanced Periodontics/Dental Hygiene</td>
<td>3.5</td>
<td>Studies in advanced diagnosis through student's knowledge of differential diagnosis, prevention of destructive periodontal diseases, methods of control.</td>
</tr>
<tr>
<td>42.154</td>
<td>Pathologic Methods</td>
<td>3.5</td>
<td>Fundamental response in periodontics, presented in lecture and seminar format.</td>
</tr>
<tr>
<td>42.166</td>
<td>Periodontics</td>
<td>3.5</td>
<td>Comprehensive clinical management of the periodontal patient.</td>
</tr>
<tr>
<td>42.178</td>
<td>Electrodiagnosis and Periodontology</td>
<td>3.5</td>
<td>Comprehensive concepts of periodontology and the clinical management of patients covered by seminar topics.</td>
</tr>
</tbody>
</table>

**Graduate**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.251</td>
<td>Advanced Periodontics</td>
<td>4</td>
<td>Provides in-depth understanding of students with comprehensive study of periodontal therapy.</td>
</tr>
<tr>
<td>42.252</td>
<td>Periodontology and Pathology</td>
<td>3.5</td>
<td>Comprehensive understanding of periodontal patient, presented with emphasis on clinical planning and case documentation.</td>
</tr>
<tr>
<td>42.253</td>
<td>Periodontal Physiology</td>
<td>3.5</td>
<td>Provides an understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
<tr>
<td>42.254</td>
<td>Periodontology and Pathology</td>
<td>3.5</td>
<td>Comprehensive understanding of periodontal diseases, methods of control.</td>
</tr>
<tr>
<td>42.255</td>
<td>Pathologic Methods</td>
<td>3.5</td>
<td>Experience in diagnosis, including clinical and laboratory techniques.</td>
</tr>
<tr>
<td>42.256</td>
<td>Advanced Periodontology</td>
<td>3.5</td>
<td>Practical experience in clinical, seminar direction, and clinical teaching in periodontology.</td>
</tr>
<tr>
<td>42.257</td>
<td>Periodontology and Pathology</td>
<td>3.5</td>
<td>Provides an understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
<tr>
<td>42.258</td>
<td>Pathologic Methods</td>
<td>3.5</td>
<td>Comprehensive understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
<tr>
<td>42.259</td>
<td>Pathologic Methods</td>
<td>3.5</td>
<td>Provides an understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
<tr>
<td>42.260</td>
<td>Pathologic Methods</td>
<td>3.5</td>
<td>Provides an understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
<tr>
<td>42.261</td>
<td>Advanced Periodontics</td>
<td>4</td>
<td>Provides in-depth understanding of students with comprehensive study of periodontal therapy.</td>
</tr>
<tr>
<td>42.262</td>
<td>Periodontology and Pathology</td>
<td>3.5</td>
<td>Comprehensive understanding of periodontal patient, presented with emphasis on clinical planning and case documentation.</td>
</tr>
<tr>
<td>42.263</td>
<td>Periodontal Physiology</td>
<td>3.5</td>
<td>Provides an understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
<tr>
<td>42.264</td>
<td>Periodontology and Pathology</td>
<td>3.5</td>
<td>Comprehensive understanding of periodontal diseases, methods of control.</td>
</tr>
<tr>
<td>42.265</td>
<td>Pathologic Methods</td>
<td>3.5</td>
<td>Experience in diagnosis, including clinical and laboratory techniques.</td>
</tr>
<tr>
<td>42.266</td>
<td>Advanced Periodontology</td>
<td>4</td>
<td>Practical experience in clinical, seminar direction, and clinical teaching in periodontology.</td>
</tr>
<tr>
<td>42.267</td>
<td>Periodontology and Pathology</td>
<td>3.5</td>
<td>Provides an understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
<tr>
<td>42.268</td>
<td>Pathologic Methods</td>
<td>3.5</td>
<td>Comprehensive understanding of pathologies of oral tissues discussed in clinical context.</td>
</tr>
</tbody>
</table>

**Financial Aid**

The applicant must be financially prepared to undertake uninterrupted studies. Assistantships are offered, dependent upon available resources.

**Admission**

Admission to graduate study in periodontics requires the B.D.S. degree or its equivalent, and satisfactory standing in Graduate College admission requirements (See "Graduate College" section of the Catalog). National Dental Board Examination scores, if available, are required. In admissions to the Ph.D. program, the department gives strong preference to applicants with the M.S. degree. Interviews are encouraged but not mandatory.

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**Preventive and Community Dentistry**

**Departmental Objectives**

- To instruct students on the oral health needs of the public.
- To prepare students to be effective leaders in community oral health initiatives.
- To promote research in the field of preventive and community dentistry.

**Program of Study**

- Core courses in preventive and community dentistry.
- Electives in public health, epidemiology, and oral biology.
- Research opportunities in community oral health.

**Program Outcomes**

- Students will be able to design and conduct community-based research projects.
- Students will be able to develop and implement community health programs.
- Students will be able to evaluate the effectiveness of community health programs.

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**Master of Science Program**

The Master of Science degree program is designed to prepare students in community dentistry and dental public health, with an emphasis on research, teaching, or administration. The program objective is to help students achieve a high degree of professional competence in their respective areas of specialty. Graduates will have met educational requirements necessary to establish eligibility for the American Board of Dental Public Health.

**Program Requirements**

- A minimum of 42 credit hours of coursework.
- A final comprehensive examination is required for graduation.
Removable Prosthodontics

6.9106 Complete Denture Seminar I 1 h
Review of current research in principles, practices, and concepts of complete denture construction.

6.9103 Removable Partial Denture Seminar I 1 h
Review of current research in principles, practices, and concepts of removable partial denture construction.

6.9113 Complete Denture Seminar II 1 h
Review of current research in principles, practices, and concepts of complete denture construction.

6.9114 Removable Partial Denture Seminar II 1 h
Review of current research in principles, practices, and concepts of removable partial denture construction.

6.9201 Research Removable Prosthodontics 1 h
Literature review, data collection, and development of research project.

6.9203 Tools Preparation Removable Prosthodontics 1 h
Preparation and delivery of hands-on research project.

6.9205 Advanced Clinical Removable Prosthodontics 1 h
Treatment of patients requiring complete and removable partial dentures.

6.9206 Technique Methods Removable Prosthodontics 1 h
Assignment of problems involving technical methods in construction of complete and removable partial dentures.

6.9207 Practice Teaching Removable Prosthodontics 1 h
Clinical and classroom teaching experience assigned by instructor.

6.9208 Journal Club 1 h
Review of current literature in prosthodontics.

6.9211 Library Assignment Removable Prosthodontics 1 h
Selection of assigned readings that are considered classics in removable prosthodontics literature.
The nation’s first university-level professorial chair in education was established at The University of Iowa in 1912. 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 education testing and measurement industry, thus making Iowa City one of the best-known centers for this educational specialty.

The college has seven divisions: Foundations, Post-Baccalaureate and Continuing Education; Educational Administration; Early Childhood and Elementary Education; Psychological and Quantitative Foundations; Secondary Education; Counselor Education; and Special Education.

The University is accredited by the National Council for Accreditation of Teacher Education (NCATE) for the preparation of elementary and secondary teachers and other professional school personnel, with the doctorate 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 and must complete the requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies, as explained in the College of Liberal Arts section of the University Catalog. Policies, rules, and regulations of the college 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.

Admissions

Students who are interested in becoming teachers should indicate their proposed teaching majors 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/Advisory Office, 116 Shaffer Hall, and submit an Application for Admission to the Teacher Education Program to the Office of Admissions, 107 College 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 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 course work attempted and on all University of Iowa course work 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 staff, 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 basis of these criteria established by the faculty.

To be admitted to foundations 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 an average standing (28 semester hours) 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 on all course work attempted and on-course work completed at The University of Iowa; and
Have submitted an Application for Admission to the Teacher Education Program (see date above).
Graduate students must:
Have been admitted to the Graduate College;
Have a cumulative grade-point average of not less than 2.6 (3.7 for M.A.T.) in undergraduate course work 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 supervised student teaching and directed observation in a variety of situations. Periodic seminars provide for discussion and evaluation of student teachers' experiences. The student teaching requirement may not be met by transfer credit except under unusual circumstances and with approval in advance.
To register for student teaching, the student must have:
Satisfactorily completed 18 semester hours during one academic session in residence at The University of Iowa; and
Satisfactory completion of 7F:75 Education Practicum and Measurement, 7W:91 Instructional Equipment for Instruction (Elementary), and 7E:100 Introduction: Elementary and Early Childhood Teaching or 7E:101 Introduction: Secondary School Teaching, and 7E:91 Prac-
Education Practicum; or
Successfully completed the appropriate methods courses; and
Maintained a cumulative grade-point average of not less than 2.2 if an undergraduate student, 2.6 if a graduate 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 practicum-type experiences or courses which they feel should be considered in lieu of the requirements should consult with their advisors concerning waiver procedures.

CUTE Program
Students who feel they may better advance their educational interests through student teaching in an inner-city situation, and who are interested in working with working class youth, may apply for the Cooperative Urban Teacher Education (CUTE) program through the Director of Student Teaching. Iowa is one of several Midwestern institutions which place selected students in the Illinois City Inner-city system. The program is open to juniors who meet the requirements for student teaching.

Overseas Student Teaching
In cooperation with the University of Wisconsin-River Falls, a split student teaching assignment is available (eight 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-air coordinator. Students entering 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 7E: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 pre-service plans. Any of the following courses will satisfy the requirement:

30:1 Introduction to American Politics 3 s.h.
30:10 The American Political System 3 s.h.
Up to 4 semester hours may also be used toward the general education requirement in social sciences (the College of Liberal Arts)
10:91 American History 1490-1877 3 s.h.
18:92 American History 1877-Present 3 s.h.
18:161 The Colonial Period in America 3 s.h.
18:162 American Revolution Period 1763-1815 3 s.h.
18:163 United States in the Early Republic 3 s.h.
18:164 Civil War and Reconstruction 3 s.h.
16:167 The New Era and the New Deal 3 s.h.
16:168 The Contemporary United States 1940-Present 3 s.h.

Minors
All undergraduate minors in education for students in the College of Liberal Arts must require a minimum of 18 semester hours of credit, of which at least 12 must be in courses numbered above 99. The student must have a grade-point average of at least 2.0 in courses comprising the minor.

General Undergraduate Minor
This minor is designed to encourage students to explore possible professions within the field of education. The student is free to choose a combination of courses, provided he or she selects at least one course from each of the following six areas:

Structure of Education

7F:150 U.S. Educational System and Society 2-3 s.h.
7E:100 Introduction: Elementary and Early Childhood Teaching 3 s.h.
7H:110 Inception to Continuing Education 3 s.h.
7H:100 Problems and Policies in Higher Education 3 s.h.
7F:100 Introduction: Secondary School Teaching 3 s.h.
7S:101 Introduction to Education 3 s.h.
History, Philosophy, and Sociology of Education
7F:102 History of American Education 2-3 s.h.
7F:103 History of Western Education 2-3 s.h.
7F:104 Sociologies of Education 2-3 s.h.
7F:150 Educational Sociology 2-3 s.h.
7H:17 Foundations of Vocational Education 2 s.h.

Psychology of Education
7F:75 Educational Psychology and Measurement 3 s.h.
7F:150 Child Development 3 s.h.
7F:107 Psychological Bases of Instructional Design 3 s.h.
7F:108 Socialization of the School-Age Child 2-3 s.h.
7F:131 Educational Psychology 3-4 s.h.
7U:130 Exceptional Children 3 s.h.

Curriculum Foundations
7H:120 Introduction to Instructional Design 2 s.h.
7E:166 Curriculum Foundations 2-3 s.h.
7S:130 Curriculum Foundations 2-3 s.h.

Cross-cultural Factors
7U:133 The University Different in Educational Settings 3 s.h.
7C:154 Education, Race, and Ethnicity
7C:165 Psychological Aspects of Black Behavior and Personality 3 s.h.
7C:185 Multicultural Concepts and Educational Systems 3 s.h.

Teaching Methodology
7C:160 Methods: Elementary School Language Arts 3 s.h.
7S:170 Methods: Social Studies 3 s.h.
7W:120 Choosing Practical Strategies 3 s.h.
7X:112 Teaching of Adults 3 s.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. Course requirements are as follows:
Any two of the following courses (for a total of 6 semester hours):
97:103 Societal and Educational Applications of Earth Science Concepts and Topics 3 s.h.
97:103 Societal and Educational Applications of Biology Concepts 3 s.h.
97:103 Societal and Educational Applications of Environmental Science Concepts 3 s.h.
97:108 Societal and Educational Applications of Chemistry Concepts 3 s.h.

Graduate Programs
Graduate study in the College of Education is guided by the general regulations of the Graduate College, with certain additional requirements imposed by the faculty of the College of Education. Graduate students in education are assigned a register in the Graduate College and receive their degrees from that college. The College of Education offers several advanced degree programs.

Master of Arts
The College of Education offers the Master of Arts degree on both a thesis and non-thesis basis in each of the divisions. The non-thesis M.A. program usually provides more specialized course work than is found in the M.A. thesis program. The nonthesis program is not necessarily a terminal program, but students who expect to continue their studies on a doctoral program are urged to select the M.A. thesis program, which offers a more intensive experience in research procedures. Students who complete a non-thesis M.A. program and are admitted to a Ph.D. program may be asked to assume responsibility for writing a thesis in addition to research skills to their adviser or dissertation during the early part of their doctoral program.

Master of Science
Thesis and non-thesis programs are available for students choosing a concentration in science. The degree outlines and the courses of the programs are similar to those above for the Master of Arts degree.

Master of Arts in Teaching
The M.A.T. program is a 36 semester hour (minimum) nonthesis program designed for academically superior liberal arts graduates who hold few or no professional education courses in their undergraduate programs. This 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 an undergraduate course work is required for admission. At least 15 semester hours of graduate course work 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 and supervision, and special services. Of the minimum of 80 semester hours required for the degree, 28 are prescribed in the area of specialization; the remaining credit may be earned in cognate fields, supervised experience, research, and elective courses. The research must culminate in a master's degree requirements and regulations applicable to the Ed.S. are the same as for the master's degree, except that 15 semester hours of residency and 30 total semester hours are required in one 12-month period or in two summer sessions. Course work completed ten years prior to the final examination must be evaluated to determine the amount of credit that may be accepted toward 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 course work 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 a non-limited course work rather than a degree program. This program provides for maximum advisement and is appropriate for persons seeking to certify, who are unsatisfied about career plans, or whose aspirations are too late to require processing for regular admission into degree programs. Faculty review committee 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 its admissions requirements may be admitted under the classification, "certification only." With students in this program, the adviser plans the academic major and educational sequence aspects of the program to meet the requirements for certification. Since enrolment is limited in early childhood education, elementary education, special education, and social studies, and English in the secondary program, admission of graduate students to this program is to be carefully reviewed as for degree programs. Persons who wish to meet certification requirements for positions other than as a teacher (e.g., counselor, administrator, or curriculum specialist) and who meet basic requirements and need only a few courses to qualify or update their certification should 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 its 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 Systems Development, and, Evaluation develops proposes, conducts studies, facilitates research, and monographs, and provides pre- and post-professional services related to instructional technology, materials and systems design and development, research, demonstration and dissemination of research, and curricular products. It works in collaboration with federal, state, and private sources to identify courses, cooperating school districts to design and conduct cooperative research, development, and evaluative projects.

The Computer Resources Laboratory offers consulting support for computer applications and instructional development related to ongoing instruction of the College of Education.

The Curriculum Resources Laboratory provides materials primarily for students and faculty members engaged in curriculum problems. It brings into a

convenient central location approximately 20,000 elementary and secondary textbooks, syllabi, reader books, courses of study, bibliographies, pamphlets, and non-print media such as filmstrips, game, records, etc. The laboratory also houses a 17,000-volume youth collection.

The Audivisual Production 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 color slides, filmstrips, super-8 film, thermocopy, transparencies, and other materials related to instructional development.

The Video Production Laboratory’s primary components are a large studio and several small studios where students and faculty can produce videotapes and audiotapes. High quality color video programs can be produced with staff assistance. Black-and-white equipment is available for supplemental classroom materials production and for micro-teaching and self-evaluation assignments.

The Educational Placement Office serves undergraduate teacher education 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, microfiche, tests, and a reserved book room for students currently.

The Iowa Testing Program’s staff develops standardized educational tests, such as the widely-used Iowa Tests of Basic Skills and Iowa Tests of Educational Development, for use in elementary and secondary schools. This department also conducts research studies in educational measurement and evaluation, publishes brochures, sponsors lectures and symposia, provides consulting services to school systems, and provides training experience for graduate students in measurement and statistics.

The North Central Association (NCA) of Colleges and Schools is the largest and most active of six regional accrediting associations in the United States; Iowa is one of 16 NCA-member states. The NCA’s primary purpose is to foster improvement in 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 and Patient Services in the Hospital supports the office of the chair of the Iowa NCA State Committee.

The James B. Stratford Educational Services Center makes available multidisciplinary services for statisticians who have questions about the cognitive, affective, educational, and vocational aspects of their lives. In addition, consultation resources are being developed for organizations concerned with educational programming, with personnel selection and training, and with improving the work environment. These services are provided by faculty and advanced graduate students in the College of Education. Counselors, psychologists, reading clinicians, special educators, administrators, specialists in measurement, instructional design, and organizational behavior, as well as other specialists, are available at the Stratford Center for conducting interviews and/or participating in assessment, intervention, and consultation.

The School Program for Emotionally Disturbed Children is located in the child psychiatry unit of the UI’s Psychiatric Hospital. Children attending this school are residential patients in the child psychiatry unit. The program is supported by the Psychiatric Hospital. Opportunities are available for student teaching in the Psychiatric Hospital and 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 search.

University Counseling Services are facilities available to students in counseling psychology for research and practicum purposes.

University Hospital School is a University-affiliated facility and, as such, strives to provide a viable balance of direct service to developmentally disabled youngsters, interdisciplinary training activities, research, and research projects in program development and effectiveness.

The University Hospital School contains two units, integrated service 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 area education agencies, and local school programs.

In addition to providing direct services to emotionally disturbed children—specialized training for workers and trainees in all areas concerned with
Teacher Certification Services

Though the 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 teachers 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 Aid

Persons interested in employment opportunities in any of the support units and in the library 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 for 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 for admission, his or her student file is available for review by those responsible for selecting the assistantship(s) for the student's program. Appointments are normal, but not always, for the program area of the assistantship.

Special Graduate Assistantships in Education

The Iowa Teacher Education Programs and the Iowa Measurement Research Foundation provide sufficient funds to support a limited number of special graduate assistantships in education. Students admitted to or pursuing any of the advanced degree programs offered by the College of Education are eligible to apply, provided they are United States or Canadian citizens. The assistantships are for the academic year only, are renewable for a limited number of times, and, at the present, provide stipends similar to those for other assistantships. Holders 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 on 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 former associates, colleagues, and other friends of Associate Dean Emeritus L. A. Van Dyke in recognition of his significant contribution to the education of the college and the nation, and is available to degree candidates in undergraduate or graduate education with superior performance records as scholars and as teachers or administrators. For further information and application blanks, contact the division chair, Division of Secondary Education, 6297 Lindquist Center, The University of Iowa, Iowa City, Iowa, 52242; or the 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 McClclenahan Award: To the outstanding candidate for an advanced degree in educational administration;
- Paul C. Fagley Award: To the outstanding candidate for the master's degree in education;
- Harvy H. Davis Award: To an outstanding student in educational administration or higher education, particularly a student interested in the financing of education;
- Howard R. Jonas Achievement Award: To an outstanding graduate student who has made a noteworthy scholarly presentation at a national professional conference or published a significant scholarly article in a reputable professional journal or other substantial printed work;
- John Leonard Deans Memorial Award: To an outstanding graduate student majoring in teacher education specialization is disposal and continuing education;
- James C. and Coretta Stroud Fellowship for Doctoral Study in Educational Psychology, Measurement, or Statistics: To an outstanding graduate student in the Division of Psychological and Quantitative Foundations who is entering the dissertation phase of study; and
- Pi Lambda Theta Graduate Award — M.A. and Ph.D. levels: To outstanding graduate students of high scholarship, provide in the professional areas of research, teaching or writing, and scholarship personal qualities.

Faculty

Ninety-eight percent of the members of the faculty with academic rank hold earned doctorates in their teaching fields, and 85 percent have had teaching or administrative experience in the public schools.

Research and Development

The College of Education has a long history of commitment 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. Systemic research programs are sponsored through the Center for Educational Experimentation, Development, and Evaluation which is described above.

Interdisciplinary Courses

75.5 credits fulfilling Course Work in

- A full semester of research work with expertise in basic analysis, and a full semester of several areas of specific interest; review of career counseling methods and use of community resources with counterparts.
Doctor of Philosophy

The Ph.D. program provides preparation for such positions as counselor education, research, associate dean or dean of students, or as director of admissions, student activities, financial aid, student unions, career planning and placement, residence halls, foreign student services, community college counseling, and continuing education and external degree programs.

The M.A. degree 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 3.3 grade-point average to be admitted to regular status.

Counseling Psychology

Doctor of Philosophy

The program, an APA provisionally approved 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. The program includes teach course in counseling psychology, counseling and research and direct that of their students, supervision, and counseling to students, and consult with other professional personnel. Graduates also take service positions in community mental health agencies, health settings, or private practice.

The program is designed to prepare students for a variety of positions in education, governmental, community mental health agencies, health settings, or private practice.

Rehabilitation Counseling

Master of Arts

The M.A. program (accredited by the Council on Rehabilitation Education) provides preparation for work in state rehabilitation agencies, sheltered workshops, rehabilitation centers, and other related agencies.
private rehabilitation agencies, mental hospitals, prisons, and in 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, 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. Minimum requirements for regular admission is an M.A. in a 3.0 grade-point average over the last 60 undergraduate semester hours or a 3.3 grade-point average over 12 semester hours of graduate work or a 2.75 undergraduate grade-point average with a GRE Aptitude Test score of at least 1500; full admission is sometimes granted.

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. Minimum admission requirements are a master's degree in counseling and experience as a counselor and a 3.0 minimum grade-point average in graduate study.

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 in substance abuse counseling is 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 relevant experience in this field are highly desirable.

Facilities

A wide variety of counselor education practice 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 rehabilitation counseling. Many other graduate students in the Division of Counseling Education hold a variety of graduate assistantships. For example, many of the University's student service units award part-time assistantships to graduate students in the division. Applicants for assistantships should contact the director of the particular counselor education graduate program they plan to enter.

Courses

For Undergraduates and Graduates

Counseling and Guidance

TC611 melody, a Nurturing Counselor 3 hrs.

TC613 introduction to Peer Counseling 3 hrs.

TC622 Process of Change and the Counselor 3 hrs.

TC101 Human Relations for Service Professionals 3 hrs.

TC125 The Custer Ethical System in Educators 3 hrs.

TC135 Drug Rehabilitation and Social Skills 3 hrs.

TC149 introduction to the Psychological Aspects of Women's Health 3 hrs.

TC165 Psychological Aspects of Alcoholism 3 hrs.
Early Childhood and Elementary Education

Chair: William H. Hibbs
Faculty: professors Josh Bagford, Louise Balchanski, Berenice A. Fianu, Jerry K. Kline, Milton Miletich, Richard Reppha, James Steeley, Lloyd Ables, Myra L. McCauley, Daniel A. Phillip and instructor Aparena B. Statchenini
Department Chair: Dr. M. A. M., Ph.D.

The division's programs are designed to prepare graduates for employment in specific positions in education and other schools and institutions of higher learning. Its programs have approval by the Illinois Department of Public Instruction and meet National Council for Accreditation of Teacher Education approval standards.

Undergraduate Programs

Students pursing a major in elementary education may elect to meet requirements for either the B.A. or the B.S. degrees. The B.A. degree requires four semesters of study or the equivalent in foreign language. The B.S. degree requires two semesters of study or the equivalent in a foreign language. In all other respects the B.A. and B.S. degree requirements are identical.

Required for both programs are the following foundational courses, which should be completed by the end of the sophomore year:

97:7 Fundamentals of Science 4 s.h.

22M:80 Theory of Arithmetic 3 s.h.
7P:74 Educational Psychology and Measurement 3 s.h.
7E:100 Introduction: Elementary and Early Childhood Teaching 3 s.h.
7W:911 Audio-Visual Equipment for Teaching 1 s.h.
A course in American history or American politics 3-4 s.h.
Also required, usually completed during the junior or senior year is the following:
7X:170 Humanities for the Classroom Teacher 1-3 s.h.

Undergraduate Programs in Early Childhood Education

Early childhood teachers serve in a variety of organizations, including pre-kindergarten and kindergartens in the public school system, Head Start and other publicly funded pre-kindergarten classes or day care centers, and privately funded early childhood centers serving children from infancy to first grade entrance age. Preparation for early childhood teaching includes the study of child development, parent-child relationships and the organization and implementation of child care centers in addition to appropriate curriculum and methodology for young children. The program requires a minimum of four practicum experiences with children of different ages within the early childhood years in public or private early childhood centers or classrooms. This program meets the requirements of the low Endorsement 52 for pre-kindergarten and kindergartener teachers. Students interested in dual certification at the pre-kindergarten and kindergarten level and the kindergartener and elementary level should attend the early childhood education major as described in a subsequent section of the Catalog and its early childhood education area of specialization. A student who successfully completes this combination is eligible for Iowa teaching certificate endorsements 10 (K-5) and 53. Students interested in dual certification as teachers of pre-kindergarten and kindergartners and pre-kindergarten handicapped children would refer to the Special Education section of the Catalog for separate application for admission to this program must be made to the Division of Special Education. A student who successfully completes this combination is eligible for Iowa Endorsements 53 and 9.
In addition to the foundations courses listed above, the following must be completed before the student teaching:
17:101 Growth and Development of the Young Child 3 s.h.
7P:106 Child Development 3 s.h.
17:124 Nutrition Work with Children 3 s.h.
(Same as 7E:103)

7E:120 Methods and Materials: Music for the Classroom Teacher 3 s.h.
7E:123 Literature for Children I 3 s.h.
7E:157 Methods: Early Childhood Education 3 s.h.
7E:92 Pre-Kindergarten 1 s.h.
(Concurrent: 7E:157)
7E:167 Early Education Education 3 s.h.
7E:93 Pre-Kindergarten 1 s.h.
(Conquielate: 7E:187)

Additional courses, required to complete the early childhood education major, which may be taken before or after student teaching, follow:
17:114 Parent-Child Relationships 3 s.h.
7U:133 The Culturally Different in Educational Settings 3 s.h.
7E:165 Method, Multicultural-Bilingual Education 3 s.h.
7E:166 Multicultural Concepts and Educational Systems 3 s.h.
7E:168 Development and Administration of Child Care Centers 3 s.h.

Students must also take a minimum of three courses (9 semester hours) in one of the following areas of specialization: child and family services, the family, child development, and pre-school handicapped children. Copies of specialization requirements are available in the Early Childhood and Elementary Division Office. These courses may be taken pass/fail if they are offered with that option.
One full semester of student teaching (15 semester hours) is required. The appropriate student teaching assignment is determined by the student's academic advisor in consultation with the student. Students who submit student teaching applications to the College of Education by March 15 preceding the academic year during which they plan to do their student teaching are assigned.

Undergraduate Programs in Elementary Education

Early childhood teachers serve in a variety of school settings, including self-contained rooms in which the teacher assumes responsibility for most of the curricular areas, departmental positions in which their responsibilities are concentrated in one or two subject areas, and team teaching assignments in which two or more teachers assume shared responsibility for the total instructional endeavor. Preparation for elementary teaching involves the acquisition of a broad background of educational knowledge, in-depth study of at least one elementary content subject, and a professional study of the learning process, of the selection and structure of instruction, and of teachers' professional development.

Early Childhood and Elementary Education/EDUCATION 265
of curricular materials suitable for school age children, and of the methodological procedures most appropriate for presenting these materials. Breadth of 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 pre-kindergarten/kindergarten endorsement and for those seeking approval for teaching 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 foundations courses listed earlier in this section are required. Also, to be taken concurrently with 7E:100 (Introduction: Elementary and Early Childhood Teaching), is the following:

- 7E:91 Pre-Teaching Practicum
- Elementary Education (To meet the foundations requirements, graduate students may elect equivalent graduate-level courses with the approval of their advisors.)

The student must complete the following elementary education courses to be eligible for student teaching:

- 7E:180 Methods: Elementary School Language Arts 3 s.h.
- 7E:181 Methods: Elementary School Science 3 s.h.
- 7E:182 Methods: Elementary School Social Studies 2 s.h.
- 7E:183 Methods: Elementary School Mathematics 3 s.h.

As area 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 physical education, elementary science, special education, and elementary generalist.

The student should consult his or her advisor concerning courses which will serve to strengthen preparation for teaching in the specified area and meet the specific requirements for that area. Copies of the requirements for each area of specialization are available in the Early Childhood and Elementary Education Division office. Courses in the area of specialization may be taken pass-no-pass if they are offered with the pass-no-pass option. Required is 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. Students should consult with their advisors concerning the appropriate registration pattern.

**Graduate Programs**

**Master of Arts in Early Childhood Education**

The program is designed to prepare persons to administer and/or deliver care and education to children from infancy through the early primary grades in private and public settings, or to serve as early childhood consultants or community college teachers. Admission preference will be given to those persons with undergraduate degrees which focused on the education and/or development of young children, in colleges of education, home economics, social work, or child development.

A core of courses for their equivalents is required of all students:

- 7E:180 Development and Administration of Child Care Centers 3 s.h.
- 7E:284 Building Foundations for Reading: Pre-Primary and Primary 2-3 s.h.
- 7E:287 Supervision and Curriculum Development in Early Childhood and Pre-Kindergarten Care and Education 3 s.h.

In addition, a course in each of the following areas is required: parent-child relationships, family development, and child development or psychology. The remainder of the required 32 semester hours (30 with thesis) are electives mutually chosen by the student and the academic advisor.

**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 specialists. 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 19.

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. Each candidate must elect at least one course in each of these areas: social foundations, curriculum, educational psychology and measurement, and supervision. In addition, each candidate must complete an area of specialization and a selected course work in advanced methodology.

Graduate students who have not completed an undergraduate program in elementary education may be admitted initially as "certification only" candidates.

**Master of Arts in Developmental Reading**

This degree program is designed to prepare graduate students for positions as reading specialists in kindergarten and grades 1-12. 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 (32 semester hours minimum).

The following are required of all candidates:

- 7E:171 Reading Clinic: Teaching Techniques 3-8 s.h.
- 7E:172 Reading Clinic: Teaching Practicum 3-8 s.h.
- 7E:284 Building Foundations for Reading: Pre-Primary and Primary 2-3 s.h.
- 7E:285 Supervision of Intermediate Grades Reading 3 s.h.
- 7E:184 Methods: High School Reading 2-3 s.h.
- 7E:204 Seminar: Secondary Reading 2-3 s.h.

**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.
The following are required of all candidates:
7E:265 Science Education: Issues, History and Rationale 3 s.h.
7E:268 Science Education: The Nature of Science 3 s.h.
7E:267 Science Education: Teaching, Learning and Curriculum Models 3 s.h.
7E:268 Science Education: Research Methods and Conceptual Models 3 s.h.
7E:262 Advanced Techniques of Teaching and Science in the Elementary School 3 s.h.
Science courses to complete the minimum of 90 semester hours are selected by the candidate in consultation with the academic advisor.

Doctor of Philosophy in Elementary Education

The purpose of this program is to prepare students for college and university teaching and research positions in elementary education and for research, curriculum, supervisory, or administrative positions in public school systems and government educational agencies.

The program requires a minimum of 90 semester hours, including 90 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 dissertation chair.

As a general guideline, each student is expected to have a good general background in all facets of elementary school education and a very strong area of specialization in at least one facet. 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 content or methodology. This area may be a professional specialization, such as educational psychology and measurement, special education, or general school administration; or it may be a subject field, such as English.

In addition, all students must demonstrate 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 degrees in the arts, sciences, and elementary education. Specific assignments vary. Some involve supervising undergraduate majors enrolled in practicums, and some involve teaching sections of undergraduate methods course and supervising student teachers. Most assistantships are classified as one-half time. This classification permits students to register for a maximum of 12 semester hours of credit per semester. Graduate students with assistantships must register for a minimum of 6 semester hours per semester.

All assistantships are awarded on a competitive basis. To be considered for an assistantship an applicant must have been admitted on regular status to the Graduate College 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:110 Growth and Motor Development 3 s.h.
7E:120 Developmental Psychology 3 s.h.
7E:150 Introduction to Children's Literature 3 s.h.
7E:160 Development of Language 3 s.h.
7E:170 Administration of Elementary Schools 3 s.h.
7E:203 Early Childhood Education 3 s.h.
7E:210 Teacher as Facilitator, Early Childhood 3 s.h.
7E:215 Program Development: Early Childhood 3 s.h.
7E:216 Families as Partners in Early Childhood Education 3 s.h.
7E:218 Methods in Early Childhood Education 3 s.h.
7E:220 Development of Language 3 s.h.
7E:225 Language and Literacy 3 s.h.
7E:230 Research Methods in Early Childhood Education 3 s.h.
7E:250 Early Childhood Education 3 s.h.
7E:251 Reading and Language Development 3 s.h.
7E:253 Creative and Performing Arts 3 s.h.
7E:260 Early Childhood Education 3 s.h.
7E:265 Science Education: Issues, History and Rationale 3 s.h.
7E:268 Science Education: The Nature of Science 3 s.h.
7E:267 Science Education: Teaching, Learning and Curriculum Models 3 s.h.
7E:268 Science Education: Research Methods and Conceptual Models 3 s.h.
7E:262 Advanced Techniques of Teaching and Science in the Elementary School 3 s.h.
Science courses to complete the minimum of 90 semester hours are selected by the candidate in consultation with the academic advisor.
Permanent Professional Teacher certificate:

Have a minimum of four years of successful teaching experience at the elementary or secondary level while holding a valid teaching certificate;

Have earned at least 30 semester hours of graduate credit in a planned program in general school administration at The University of Iowa; and

Have a master's degree (60 semester hours for superintendents).

In addition, each candidate has these requirements:

Elementary Principal (Endorsement 11) and Secondary Principal (Endorsement 22): Completion of a planned M.A. program at The University of Iowa, including successful completion of the core courses for all principalship certification candidates, the core courses for the appropriate certification level, and courses from the elective list approved by the adviser to a minimum total of 32 semester hours. Persons already holding an M.A. degree must satisfy all core requirements for the appropriate certification level and must complete a minimum of 50 semester hours in a planned program at The University of Iowa. Administrative certification at a level different from that characterizing prior student preparation and experience should be planned with an adviser, Supervisor (Endorsement 61): 60 semester hours in a planned 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, certain positions with state departments of education, or positions with area educational agencies. The student may take the program with thesis (30 semester hours minimum) or without thesis (32 semester hours minimum).

Course Requirements

With the aid of an adviser, the student prepares a plan of study including these core requirements:

All Candidates

T0:290 Fundamental Concepts of School Administration

1 s.h.

T0:290 Computer Applications in Education

2-3 s.h.

T0:290 Legal Aspects of School Personnel

2-3 s.h.

T0:383 Supervision of Instruction

2-3 s.h.

T0:143 Introduction to Statistical Methods

3 s.h.

T0:152 Employment Rights

3 s.h.

T0:153 Collective Bargaining

3 s.h.

T0:167 Personnel Management

3 s.h.

T0:168 Curriculum Foundations

2-3 s.h.

T0:242 Explorations in Educational Policy

2-3 s.h.

T0:248 Construction and Use of Evaluation Instruments

3 s.h.

R0:270 Issues and Trends in School Guidance

1-3 s.h.

T0:290 Improving Instruction in the Secondary School

3 s.h.

T0:291 Administration of Professional Personnel

2-3 s.h.

T0:295 Financial Management of Local School Systems

3 s.h.

T0:297 Theory in Administration

3 s.h.

T0:299 Legal Aspects of School Administration

2-3 s.h.

Central Staff Administration

T0:143 Introduction to Statistical Methods

3 s.h.

T0:303 Computer Applications in Education

2-3 s.h.

T0:295 Financial Management of Local School Systems

3 s.h.

Thesis

A student elected the M.A. program with thesis must take T0:383 M.A. Thesis in Education Administration and a final oral examination on the thesis.

Comprehensive Examinations

The student will take three-hour examinations in areas of emphasis with the approval of the his or her adviser.

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 an adviser to meet State of Iowa certification requirements.

Course Requirements

T0:17 Education

3-4 s.h.

T0:117 Philosophy of Education

2 s.h.

T0:131 Educational Psychology

2 s.h.

T0:282 Mental and Emotional Health

2 s.h.

T0:283 The Adolescent and Young Adult

3 s.h.

T0:143 Introduction to Statistical Methods

3 s.h.

T0:152 Employment Rights

3 s.h.

T0:153 Collective Bargaining

3 s.h.

T0:167 Personnel Management

3 s.h.

T0:168 Curriculum Foundations

2-3 s.h.

T0:242 Explorations in Educational Policy

2-3 s.h.

T0:248 Construction and Use of Evaluation Instruments

3 s.h.

R0:270 Issues and Trends in School Guidance

1-3 s.h.

T0:290 Improving Instruction in the Secondary School

3 s.h.

T0:291 Administration of Professional Personnel

2-3 s.h.

T0:295 Financial Management of Local School Systems

3 s.h.

T0:297 Theory in Administration

3 s.h.

T0:299 Legal Aspects of School Administration

2-3 s.h.

Program Emphasis

Students must complete the balance of their minor required hours (minus cognates and electives) in one of the following areas of emphasis. Courses
Electives
The student chooses electives completing the 60-semester-hour requirement for the Ed.D. 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.D. 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.D. degree comprises 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 train students for positions at all levels of school administration, to do research in school 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 best equipping the individual 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 of specialization in at least one area 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 a general and secondary administration must complete a nine-semester-hour cognate outside the College of Education. Proficiency in two tool areas must be demonstrated.

Comprehensive Examinations
Each doctoral student must complete satisfactorily an extensive comprehensive examination in areas approved by the student's adviser and the dissertation chair. The examination will be based on the general field of educational administration and the student's areas of specialization. Students must complete doctoral programs in areas other than educational administration dealing to utilize some aspect of educational administration as an area of concentration for which they would request a comprehensive examination should consult with their advisers. The choice of Educational Administration early in their sequence of studies.

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 specific course registration. The student should complete approximately 12 semester hours in one area of specialization before requesting a comprehensive examination. If the student decides to use a field of educational administration as a related comprehensive area, the student should plan to complete approximately 18 semester hours of diversified course work in educational administration.

Research
Dissertation Prospectus
The student must write a formal dissertation prospectus and submit it to a doctoral committee for approval. The student and adviser determine the time for completing the prospectus. Final evaluation of the prospectus is made at a meeting of the committee.

Completion of the Dissertation and Final Examination
The student must accumulate a minimum of 10 semester hours in research for the dissertation. Work for the dissertation commences in a final oral defense of the dissertation. The student usually takes the examination within a month of her or his anticipated time of graduation. The student must be registered at the University during the session in which he or she graduates.

Admission
Applicants must satisfy minimum requirements of the Graduate College. Candidates are selected through a faculty review process. Factors considered include grade-point average, Graduate Record Examination (GRE) Aptitude Test scores, and other evidence of academic ability and professional promise.

Courses
Educational Administration
To be completed by middle 12th hour.

Other courseships: principles, responsibilities, etc.

Admission policy requirements for teaching certificate students, including the course work, are specified by the College of Education. Students may register for the program and take courses in the College of Education without being admitted. The program must be completed within 60 semester hours of advanced credit.

Specifically listed in each area of specialization are the required courses.

Elementary School Administration

7P: 150 Introduction to Educational Measurement 3 s.h.
7T: 291 Elementary School Organization 3 s.h.
7T: 292 Elementary School Organization Patterns 3 s.h.
7T: 293 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 3 s.h.
7T: 391 Seminar: Administration and Coordination of Curriculum 2-3 s.h.
7T: 392 Seminar: Elementary Supervision and Administration 2-3 s.h.
7T: 391 Seminar: Analysis and Appraisal of Curriculum 2-3 s.h.
7T: 393 Seminar: Supervision of Instruction 2-3 s.h.

Secondary School Administration

7E: 188 Curriculum Foundations 2-3 s.h.
7T: 150 Introduction to Educational Measurement 3 s.h.
7T: 293 Seminar in Curriculum 3 s.h.
7T: 392 Seminar: Secondary School Organization 3 s.h.
7T: 391 Seminar: Secondary School Curriculum 2-3 s.h.
7T: 392 Seminar: Issues and Trends in School Supervision 2-3 s.h.
7P: 143 Introduction to Statistical Methods 3 s.h.

General School Administration

7T: 291 Seminar: Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 3 s.h.
7T: 294 Seminar: Design and Organization of Curriculum for Secondary Schools 3 s.h.
7T: 295 Seminar: Design and Organization of Curriculum for Adult Education 3 s.h.
7T: 291 Seminar: Secondary School Organization 3 s.h.
7T: 293 Seminar: Secondary School Organization Patterns 3 s.h.
7T: 293 Seminar: Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 3 s.h.
7T: 391 Seminar: Administration and Coordination of Curriculum 2-3 s.h.
7T: 392 Seminar: Elementary Supervision and Administration 2-3 s.h.
7T: 391 Seminar: Analysis and Appraisal of Curriculum 2-3 s.h.
7T: 393 Seminar: Supervision of Instruction 2-3 s.h.

Cogner's
The student must complete a minimum of 6 semester hours bearing a cognate relationship to educational administration, subject to the adviser's approval.
Foundations, Postsecondary and Continuing Education

Chair: William E. Dutty

The programs in this division are designed to prepare administrators and professional personnel as well as teachers and researchers in the fields of social foundations and postsecondary and continuing education. The academic programs in the division reflect this diversity of purpose.

Social Foundations of Education

Social Foundations of Education is an interdisciplinary program within the College of Education, which is designed to enable students to better understand the influence of social, historical, and psychological forces upon the formal, educational enterprises. Major areas of specialization within the program are comparative/international education, history of philosophy, sociology of education, and the sociology of education.

General requirements for admission as an M.A. student are as follows: the Graduate College. A personal interview with a member of the social foundations faculty is desirable and may be required. An undergraduate and/or graduate emphasis in philosophy, the humanities, or the social sciences will two years of teaching experience are strongly recommended. Students must maintain a 3.0 overall grade-point average to remain in the program.

Master of Arts

Students in the M.A. program must take a minimum of 18 semester hours of work in social foundations, which should include at least two courses in each of the three of the four offered areas of specialization. The remainder of their required 30 semester hours of course work will be in an area of concentration appropriate to their career and academic goals. For example, a student interested in philosophy of education would normally take these courses in the Department of Philosophy.

Doctor of Philosophy

The Ph.D. program requires a minimum of 90 semester hours. Students are required to take a minimum of 24 semester hours in the area of specialization 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 related fields. 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 an area of concentration, such as 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 course work in depth from at least one other program in the University, such as history, philosophy, political science, and sociology, etc. These experiences are individually tailored by the student with the aid of six or her advisor and suggestions from the appropriate department and/or departments.

Two research tools 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 sequence; philosophy of science and methodology of social science; historiography; foreign language (if appropriate)

In addition, all students are required to successfully complete 7950-10 Seminar: Alternative Research Strategies and 7950 Research in Higher Education. Dissertation research is normally taken for 12 to 15 semester hours of credit.

Postsecondary and Continuing Education

The postsecondary and continuing education in the United States represents an extensive and complex set of phenomena. The academic programs in the division encompass that complexity. Degrees are offered at all levels. There is emphasis upon both research and practice. Preparation for either teaching or administration is available. The teaching, research, and service activities of the faculty, and the work of the graduates of the several degree programs, illustrate that education beyond the high school level continues in a variety of ways for all ages and in many different settings.

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 general education requirements of the College of Education. Students may complete their professional education and additional course work in the health occupations education specialty field and/or supporting areas.

Students intending to apply this program must hold current appropriate certification, licensure, or registry appropriate to the area of health occupations education in which they wish to teach, e.g., dental assisting, medical office assisting, respiratory therapy, and the like. The health occupations education major is granted upon this basis, and prepares well in professional education and the liberal arts education appropriate to teachers who wish to acquire baccalaureate degree.

Applicants to this program must satisfy the requirements for admission to the Teacher Education Program (T.E.P.) of the College of Education.

Program requirements:

- Foundations, Postsecondary and Continuing Education
- Social Foundations of Education
- Master of Arts
- Doctor of Philosophy
- Bachelor of Science in Health Occupations
Course Work in Professional Education
7P-131 Educational Psychology 3-4 s.h.
7P-150 Introduction to Educational Measurement 3 s.h.
Appropriate course work in social foundations
Curriculum and Teaching Procedures
7H-128 Application to Community College and Health Careers 3 s.h.
7H-112 Teaching of Adults 3 s.h.
7H-117 Foundations of Vocational Education 2 s.h.
Additional Requirements
7H-191 Community College Teaching Internship 0 or 18 s.h.
7H-190 Seminar in Health Occupations Education 1-4 s.h.
7X-170 Human Relations for the Classroom Teacher 3 s.h.
Additional specialty course work in health occupations education
Students may avail themselves of special workshops or courses offered by specific health colleges when appropriate prerequisites have been met. In addition, students must meet certification requirements stipulating an American government or U.S. history course.
Course work may also be taken in specific basic sciences supporting health occupations education. In addition to course work in the health specialty and basic sciences, students may also choose electives from the College of Education or other supporting units.
Course work 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 mid-level administrative, curriculum and instruction, or continuing education positions in two- and four-year institutions, and is appropriate for positions such as assistant dean, business manager, development officer, assistant to the president, director, in-service director, and division or program unit in selected areas.
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 provides advanced graduate education in higher education in the areas of administration, curriculum and instruction, community college administration, and continuing education for students not generally planning to continue for the doctorate. The specialist degree may also be awarded upon completion of a joint program in higher education and an academic field comprising a minimum of 60 semester hours of graduate work or upon completion of a higher education sequence following a master's degree program.
Admission
Applicants for admission must satisfy the general requirements for admission to the Graduate College. Candidates will be selected on the basis of grade-point average, Graduate Record Examination (GRE) Aptitude Test scores, and promise for professional growth. Transcripts, GRE scores, and three letters of recommendation are required for regular admission. An interview is recommended.
Major in Higher Education
Requirements for the Ed.S. major in higher education are:
At least 18 semester hours in professional education and related fields including a structured internship determined in consultation with the advisor to be appropriate for one of the following four areas: administration, curriculum and instruction, community college administration, and continuing education; at least 28 semester hours in the area of specialization to be determined in consultation with the advisor; ten semester hours of electives to be approved by the advisor; Research conducted under registration in 7H-301 Educational Specialist Research in Higher Education for four semester hours; two three-hour comprehensive examinations:
An examination to cover the field of higher education in general; and
An examination in one of the four concentrations within higher education, perhaps reflecting an area of specialization within the concentration, followed by an oral examination.
Major in Higher Education with Emphasis in College Teaching
Requirements for the Ed.S. major in higher education with emphasis in college teaching are:
At least 18 semester hours in professional education and related fields appropriate for college teaching including a structured internship; 7H-310 Seminar in Higher Education 3 s.h.
7H-370 College Teaching Internship 9 s.h.
7H-175 Post-High School Staff Development Workshop 1-2 s.h.
7H-390 Academic Equipment for Instruction 1 s.h.
7P-151 Educational Psychology 3 s.h.
At least 28 semester hours in the area of teaching specialization; Ten semester hours of electives to be approved by the candidate's advisor Research conducted under registration in 7H-301 Educational Specialist for Research in Higher Education for four semester hours; Comprehensive Examination:
An examination of the nature of postsecondary institutions and student characteristics, the professional responsibilities of a faculty member, and the candidate's ability to organize the subject matter into select appropriate teaching strategies; An examination in the candidate's teaching field, written and administered by faculty in that field, and followed by oral examination.
Related Field
Students majoring in another field and desiring to specialize in higher education should consult with the higher education adviser early in their studies. Plans of study will be developed individually for each student.
Teaching Internship
Program participants teach a half-time for a full semester at a community college under the supervision of an experienced faculty member. Community college, with field supervision from The University of Iowa. Interns participate as fully as possible in the academic life of the community college, and usually gather data for their Ed.S. research project during the summer.
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, and preference will be given to those willing to travel for that experience.
Doctor of Philosophy
The Ph.D. program continues to attract persons who are likely to serve as administrators, specialists, researchers, and 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 24 semester hours of credit in that area. Ordinarily the candidate chooses a related field of 5-12 semester hours or a minor (approximately 30 semester hours) which must be acceptable to the graduate program in the area of concentration. The dissertation research (12 to 15 semester hours) is expected to deal with a specific problem in the area of concentration. These three components—concentration, minor and/ or related fields, and dissertation research—comprise a major part of the typical doctoral program and, give the student the opportunity to specialize in one or more areas of interest.

While the doctoral program places heavy emphasis on self-identification at both the theoretical and applied levels, the student is expected to take course work outside the division, using the flexibility of the program to develop expertise in such areas as organizational analysis and the design of instruction and evaluation. Comprehensive examinations for the doctoral candidate in education and the candidate's area of concentration, minor and/or related field, and dissertation.

Applicants for admission to the doctoral program must meet the requirements of the Graduate College. Candidates will be selected on the basis of grade-point average, Graduate Record Examination (GRE) scores, and three letters of recommendation. Applicants are urged to submit their applications for regular admission. An interview is recommended and may be required.

Iowa Community College Certification

To qualify for a professional certificate with authorization to teach in arts and sciences fields in an area community college in Iowa, the student must hold a master's degree granted by an approved institution, with specialization in a field of instruction offered in the arts and sciences division of an area college. Prospective applicants must have earned 18 semester hours of professional preparation appropriate for college teachers. Two semester hours of American history or government are required for certification in Iowa.

As of August, 1980, applicants for certification for arts and sciences fields in an area community college in Iowa must hold a master's degree granted by an approved institution, with specialization in a field of instruction offered in the arts and sciences division of an area college. Prospective applicants must have earned 18 semester hours of professional preparation appropriate for college teachers. Two semester hours of American history or government are required for certification in Iowa.

The following courses fulfill the requirement (specific alternatives may be chosen in consultation with the Office of Community College Affairs):

79-12 Teaching of Adults
3 s.h.
79-211 Problems in College Teaching
2 s.h.
A master's degree in the student's teaching area is required for certification in arts and sciences areas.

Special Facilities

A resources and document collection relating to community colleges is available for students doing research or seeking employment information.

Social Foundations and Comparative Education Courses

79-101 Education, Politics, and Culture of Native Southeast Asia
3 s.h.
79-205 History of American Education
3 s.h.
Educational thought and criticism at least 200 years as they have contributed to today's schools in the United States.
79-300 European Schools
5 s.h.
Treatment of contemporary educational changes in the European nations; emphasis on differences and increase between social and cultural ideas in the USSR, Scandinavia, England, France, and Germany, currently as these ideas are on our country.
79-305 Education in the Third World
3 s.h.
Problems and trends of education in selected areas and countries of Latin America, Africa, and southern Asia.
79-306 History of Higher Education
3 s.h.
Historical patterns of education in China, Japan, and Korea, and the effect of religion on the contemporary educational issues in these countries.
79-307 History of Women's Education
3 s.h.
Principal issues in the historical development of educational philosophies and institutions in Western culture; emphasis on religious and social factors in historical development of education in the United States.
79-308 The Evolution of Women's Roles in Education
3 s.h.
Principal issues in the social-emotional roles of women in educational history, emphasizing institutions and practices. Emphasis on the evolution of education across European history as well as in other areas of the world.
79-317 Pedagogy of Education
5 s.h.
Introduction to the principal educational philosophies and pedagogies which have influenced Western education; emphasis on how philosophical ideas and concepts have served to shape educational areas.
79-320 The Educational Romanticism: Reform School Reform of the 80s
15 s.h.
See FY 1-18.
79-321 Introduction to the Politics of Education
3 s.h.
Introduction to the political setting of education at state, local, and national level as well as considerable treatment of how political movements influence educational issues.
79-322 Educational Sociology
3 s.h.
Comparison of the role sociological organizations and related education in social systems; impact of formal education on social stratification, social mobility, and social achievement in the United States and selected countries.
79-325 John Dewey and Education
2 s.h.
An introduction to the philosophy of education* that a special emphasis on the historical ideas, visions, and aesthetics, especially as applied to educational theory and practices.

79-102 See State Stewardship and Subsistence in Education
3 s.h.
Comprehensive examination of the past education plans in the United States for subsistence, social security, and subsistence. Emphasis on the manner of the development and implementation of alternative educational programs and strategies for change. Same as 79-140.
79-200 Introductory Overview of Japan and the Japanese People in the 20th Century
3 s.h.
Introductory overview of Japan and the Japanese People in the 20th Century. Emphasis on the specific developments and the role of the educational system of the country.
79-205 Japanese Education
3 s.h.
Japanese education and the relationship to social, cultural, and economic changes. Emphasis on the role of education in the development of the country.
79-305 Cultural and Social Change
3 s.h.
Cultural and social change in Japan. Emphasis on the role of education in the development of the country. Same as 79-105.
79-107 Social and Educational Change
3 s.h.
Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-106 Sociology of Educational Institutions
3 s.h.
Sociology of educational institutions; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-107 Sociology of Educational Institutions
3 s.h.
Sociology of educational institutions; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-108 Economics of Education
3 s.h.
Economics of education; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-109 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-110 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-111 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-112 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-113 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-114 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-115 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-116 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-117 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-118 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-119 Introduction to Educational Administration
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Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-120 Introduction to Educational Administration
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79-121 Introduction to Educational Administration
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79-122 Introduction to Educational Administration
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Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-123 Introduction to Educational Administration
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Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-124 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-125 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-126 Introduction to Educational Administration
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Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-127 Introduction to Educational Administration
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Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-128 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
79-129 Introduction to Educational Administration
3 s.h.
Introduction to educational administration; their role in society and the profession of teaching and learning. Emphasis on the consequences of social and educational change and the changing role of the individual in society and the profession of teaching and learning.
second, there is some emphasis on both goals in all programs.

Undergraduate Course Work in Educational Psychology, Measurement and Statistical Analysis
The division offers an undergraduate minor in the combined areas of educational psychology, measurement, and statistical analysis.

The purpose of the minor is to provide an enriched background in educational psychology, educational testing, and research methods in education. A division adviser assured 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.

One of the general education requirements for graduation from the College of Liberal Arts is successful completion of a course designed to develop skills in quantitative or formal reasoning (see the "College of Liberal Arts" section of the Catalog). 7P-25 Elementary Statistics and Inference may be used to satisfy this requirement. Students who wish to use the course for this purpose should enroll under its cross-listed number, 225.25.

Master of Arts in Educational Psychology
The program provides an overview of educational psychology as an area of scholarly inquiry. It includes course work in human development, principles of learning and teaching, educational measurement, and research methods. The program is designed to prepare the student for entry into a specific vocation. Rather, it contributes to a broad understanding of the psychology and educational principles on which education builds.

Students may use this degree with or without thesis. The degree without thesis requires a minimum of 32 semester hours of course work. The degree with thesis requires a minimum of 28 semester hours of course work plus 2 to 4 semester hours of thesis credit. Both programs require TP-143 Introduction to Statistical Methods or equivalent.

Students plan the remainder of the program in consultation with their advisers, choosing courses from the following four areas: testing and measurement, human development, educational psychology, measurement and research, and social foundations of education. Students must take at least one course in each of these areas and a concentration (three courses) in at least two areas. The faculty encourages degree candidates to enroll in a course 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 covering 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 38 semester hours of course work plus 1 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 is a graduate-level survey course in educational psychology, elementary and intermediate courses in classical statistical methods, an introduction to Bayesian 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 consist of three hour examinations in educational measurement and in applied statistics (classical or Bayesian). With 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 subject area minor. Three hours of these examinations constitute a minimum of three courses in the area; two-hour examinations assume a minimum of two courses in the area.

Grade-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 section at the Graduate Record Examination (GRE) Aptitude Test is less than 500, the applicant will not be accepted. However, if there is convincing evidence of superior ability, the faculty may approve acceptance on a case-by-case 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 in the prescriptive teaching of reading. Graduates of the nonsite program can qualify for certification as reading clinicians. They typically return to classroom teaching or take positions as reading clinicians, supervisors of reading teachers, or reading specialists. The requirement for the thesis program typically expect to enter doctoral programs in the field of reading.

The nonsite program requires a minimum of 32 semester hours including the following core courses:
7P-177 Introduction to Psychology of Reading 3 s.h.
7P-173 Survey of Diagnostic/ Remedial Approaches to Reading Instruction in Grades K-12 4 s.h.
7P-213 Introduction to Educational Measurement 3 s.h.
7P-251 Individual Intelligence Testing 3 s.h.

Students must also complete at least 4 semester hours of practicum courses, chosen with the adviser's approval from the following:
7E-171 Reading Clinic: Teaching Techniques 2 s.h.
7E-172 Reading Clinic: Teaching Practicum 2-3 s.h.
7E-272 Advanced Reading Clinic Techniques 2-3 s.h.
7E-277 Advanced Reading Clinic Practicum 2-3 s.h.
7E-295 Reading Clinic: Supervision 3 s.h.
7P-370 Teaching in a Reading Laboratory 3 s.h.
7E-299 Reading Clinic: Teaching Practicum—Specialty Level 4 s.h.

All candidates must complete a minimum of 14 semester hours in elective courses.
Choice with the advisor's approval from the list of courses approved by the College of Arts and Sciences. Among these courses, the student may choose a maximum of 30 semester hours. The student must meet the requirements for an undergraduate degree in psychology, special education, or elementary or secondary education.

The thesis program requires a minimum of 30 semester hours, including the following core courses or equivalents:

- 7P:143 Introduction to Statistical Methods (3 s.h.)
- 7P:341 Intermediate Statistical Methods (4 s.h.)
- 7P:375 Advanced Psychology of Reading (4 s.h.)
- 7P:375 Reading Clinic: Diagnostic Practice (3 s.h.)
- 12:7-12:120 Introduction to Linguistics (3 s.h.)
- 7P:395 M.A. Thesis in Educational Psychology, Measurement or Statistics (2-12 s.h.)

Elective courses are chosen from the same field 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 project will involve the investigation of a problem comparable to those encountered by a reading clinician or consultant in the field.

The grade-point-average requirement for admission to the program is the same as that established by the Graduate College. When the student's grade-point average is computed, the total score on the verbal and quantitative parts of the Graduate Record Examination (GRE) Aptitude Test is included, and no offsetting 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 as they are received.

Master of Arts in Instructional Design and Technology

The M.A. in Instructional Design and Technology is a 36-semester-hour program designed to provide basic knowledge and skills required to work in educational settings, including schools, businesses, and other environments. The student must have a grade-point average of at least 2.0 in the previous course work and a Composite GRE (verbal and quantitative) of at least 1000. The student must also complete at least 12 semester hours of prerequisite coursework in psychology, statistics, and other related fields.

Elective courses are chosen from the same field 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 project will involve the investigation of a problem comparable to those encountered by a reading clinician or consultant in the field.

The grade-point-average requirement for admission to the program is the same as that established by the Graduate College. When the student's grade-point average is computed, the total score on the verbal and quantitative parts of the Graduate Record Examination (GRE) Aptitude Test is included, and no offsetting 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 as they are received.

Doctor of Philosophy in Educational Psychology

The doctoral program prepares graduates for a variety of careers that require a strong background in psychological principles to educational practices. The course work required for the program is designed to provide a comprehensive understanding of the field of educational psychology. The program is structured to provide a solid foundation in the major areas of educational psychology, including instructional design, technology, and research methods. The program includes a dissertation, which is a comprehensive study of a specific topic in educational psychology. The dissertation is typically a 90-hour program of study, including coursework, seminars, and independent study. The program is designed to prepare students for careers as researchers, professors, or other professionals in the field of educational psychology.

Educational Specialist in Instructional Design and Technology

The Ed.S. in Instructional Design and Technology is a 36-semester-hour program designed to provide specialized training beyond that provided by the M.A. program. The Ed.S. is ordinarily considered to be a terminal degree. Admission to the Ed.S. program is the same as to the M.A. except that a minimum grade-point average of 3.0 on all previous graduate work is required for regular admission. Applicants seeking admission to the Ed.S. program must submit a letter requesting admission to the dean at the time of filing completed admission forms with the University Graduate Admissions Office. The letter should describe the applicant's interests in the field of study and the program at The University of Iowa, areas of topics of desired study, tentative future plans, and any additional information which may be helpful in the admissions process. The program is designed to provide a comprehensive understanding of the field of educational psychology. The program includes a dissertation, which is a comprehensive study of a specific topic in educational psychology. The dissertation is typically a 90-hour program of study, including coursework, seminars, and independent study. The program is designed to prepare students for careers as researchers, professors, or other professionals in the field of educational psychology.
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 educational and psychological measurement and evaluation, testing and evaluation agencies, consulting firms, training programs, and research centers. The 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 I 4 s.h.
- TP:265 Construction and Use of Evaluation Instruments 4 s.h.
- TP:267 Educational Measurement and Evaluation 5 s.h.
- TP:244 Correlation and Regression 3 s.h.
- TP:246 Design of Experiments 3 s.h.
- TP:230 Program Evaluation 3 s.h.
- TP:280 Educational Research Methodology 3 s.h.

The student's advisor will suggest additional course work in areas appropriate to the student's interests and vocational objectives. These courses typically include additional work in education-mathematical statistics, applied mathematical statistics, scaling, and educational psychology. Students who concentrate in the area of statistics, with the intention 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 doctoral candidates are expected to develop facility with computer programs and techniques for designing and testing instruments in educational research.
Doctor of Philosophy in Educational Psychology with Concentration in Reading Disability

This program prepares graduates for careers as college teachers, as directors of reading clinics, and as supervisors of remedial reading programs in larger school systems. The course requirements are essentially the same as those for the doctoral program in educational psychology. The Doctoral courses, which will also include those pertinent to the area of reading and relevant courses offered by the divisions of Special Education, Early Childhood and Elementary Education, and Secondary Education, are required in 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.

Doctor of Philosophy in Instructional Design and Technology

The Ph.D. in Instructional Design and Technology is a 90-semester-hour program designed to provide a broad background for students interested in teaching, research, and leadership positions in the field. There is a relatively heavy emphasis on helping students acquire the knowledge and skills necessary to expand understanding of learning and instruction and those factors which influence them.

The requirements for the doctor of philosophy degree are the same as for the Ph.D. in educational psychology, except that a minimum grade-point average of 3.0 or higher in all previous graduate work is required for regular admission.

Applicants seeking admission to the Ph.D. program must submit a letter to the division chair at the time of filing completed admission forms with the University's Office of Admissions.

The letter should describe the applicant's interests in the field of study and the program at The University of Iowa, area of topic of dissertation, tentative future plans, and any additional information which may be helpful in the admissions process.

It is also recommended that applicants for the Ph.D. degree arrange a personal interview with the program faculty members before submitting admission forms.

All students in the Ph.D. program must complete the following coursework or approved equivalent:

M.A. core without stating plus:

7TP/143 Introduction to Statistical Methods
7TP/231 Selected Applications of Statistical Methods
7TP/261 Research Methods in Instructional Design and Technology Research-related course

In addition, the program requires completion of 18 semester hours of prescribed course work in one of the following areas:

- Computer applications
- Instructional design
- Media center administration
- Training and human resource development
- Visual studies

All students are also required to complete 2 semester hours in one area outside the College of Education. All students must successfully pass a nine-hour set of final comprehensive examinations. These examinations are divided into 0.4, 0.4, or 0.5 segments distributed as follows:

- General instructional design
  - Area specialization
  - Others

Financial Aid

The division normally employs a number of graduate students as teaching, research, and production assistants. These are normally half-time academic year appointments and holders are permitted to carry a study and/or research load of up to 12 semester hours per semester. Candidates should address inquiries to the chair of the division.

Other types of graduate assistantships are supported by the Iowa Tests of Basic Skills and the Iowa Tests of Educational Development. Duties are varied, including such responsibilities as test development, test editing, and consulting with teachers in the field whose pupils have participated in these testing programs. There are also a few other assistantships supported by the Iowa Tests Programming which are not specific to the programs cited above. Inquiries should be directed to the program directors.

Courses

Educational Psychology, Measurement and Statistics
7TP/201 Research Methods and Statistics (3)
- Statistical techniques for presenting data, descriptive statistics, sampling distribution models, tests of statistical significance, interval estimation procedures, tests of association, correlation and prediction

7TP/251 Educational Psychology, Measurement and Statistics (3)
- Theories of educational research; research methods and their application; probability theory, sampling theory, and statistical inference (eductional, psychological, and sociological models); uses of correlation and regression

7TP/261 Introduction to Statistical Methods
- Sampling and inferential statistical research; descriptive and inferential statistics; theoretical distributions; tests of hypotheses; measures of association and correlation

7TP/262 Psychological Statistics
- Correlation, regression, predictive analysis, analysis of variance, factor analysis, reliability, and validity

7TP/263 Psychological Measurement
- Inference in test construction; construction of test items and test characteristics; methods of scoring and analysis of test data

7TP/264 Educational Measurement
- Inference in test construction; construction of test items and test characteristics; methods of scoring and analysis of test data

7TP/265 Standardized Testing and Public Policy
- Inference in test construction; construction of test items and test characteristics; methods of scoring and analysis of test data

Doctor of Philosophy in Educational Psychology with Concentration in Reading Disability
- Overview of individual differences found to have direct implications for teaching.

7TP/266 Child Development
- An overview of theories of language and environment, learning, and characteristics of children with special needs

7TP/267 Social Psychology of the Schoolchild Child Development
- Social development, social influence, development of attitudes and interests, effects of social class on social development

7TP/268 Understanding Child Behavior
- Techniques for applying psychological state and behavioral, including personal characteristics, thought patterns, social and interest, real-world, motivational, learning, and cognitive perspectives to understanding a child's behavior

7TP/269 The Social Development of Children
- Review of research on physical and social development, including social cognitive, personality, and behavioral factors

7TP/270 Simulating the Intellectual Growth of Children
- Review of research on intellectual development, including the role of language, social interaction, and cognitive development

7TP/271 Understanding and Controlling Human Behavior
- Review of research on behavior modification, social learning, and cognitive processes

7TP/272 The Educational Psychology of Children
- Review of research on the development of children, including cognitive, social, and emotional development

7TP/273 Introduction to Statistical Methods
- Descriptive and inferential statistical research; descriptive and inferential statistics; theoretical distributions; tests of hypotheses; measures of association and correlation

7TP/274 Psychological Measurement
- Analysis of test construction; construction of test items and test characteristics; methods of scoring and analysis of test data

7TP/275 Psychological Statistics
- Correlation, regression, predictive analysis, analysis of variance, factor analysis, reliability, and validity

7TP/276 Educational Measurement
- Inference in test construction; construction of test items and test characteristics; methods of scoring and analysis of test data

7TP/277 Standardized Testing and Public Policy
- Inference in test construction; construction of test items and test characteristics; methods of scoring and analysis of test data
Secondary Education

Chair: Mervin J. Zweg

Teacher Certification

Program Requirements

Undergraduate students seeking secondary school certification are degree candidates in the College of Liberal Arts and must complete the requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies degrees described in the "College of Liberal Arts" section of the Catalog. Graduate students may be admitted to a program leading to teacher certification as "certainly completed" candidates in the Graduate College and are subject to all policies, rules, and regulations of that college.

Certification requires a major of at least 36 credit hours and 24 more course work in a subject area taught in the secondary school. Course requirements for each major are listed in the College of Education's catalog, Teacher Education Programs. Candidates for secondary school teaching certification may also receive approval to teach in additional subject areas by completing an approved program of 20 or more semester hours of course work in these areas.

Secondary School teacher preparation programs are provided in the following areas:

Art 
Athletic training 
 Coaching 
 Communication and Theatre Area (Speech) 
 English 
 Foreign Languages - Spanish, French, German, Russian, and Latin 
 Health Education 
 Home Economics 
 Journalism 
 Mathematics 
 Music 
 Physical Education (two programs: one in the Department of Physical Education-Field House and one in the Department of Physical Education and Device-Haley Gymnasium) 
 "Health 
 Science, including general science, physical science, biology, chemistry, physics, and earth science 
 Social Science, including social studies, economics, geography, history, political science, psychology, and sociology 
 "Available as an additional approval area only. A major in another subject area is required for certification. Students planning to teach art, music, or physical education typically complete a program which prepares them for both elementary and secondary level certification.

Undergraduate candidates for certification to teach in secondary schools must complete the following requirements, in addition to the requirements in their major:

75-79: Pre-Examination Practicum 2 a.h. 
78:100 Introduction to Secondary School Teaching 2 a.h. 
77:76 Educational Psychology and Measurement 3 a.h. 
77:170 Human Relations for the Classroom Teacher 3 a.h. 
NOTE: The methods of teaching courses in the major field 3-4 a.h. 
Student teaching 12-16 a.h. 
With their advisor's approval, graduate students may select equivalent graduate courses in lieu of 75:91, 78:100 and 77:75. Students must complete the methods course in the major field prior to student teaching.

Students in secondary education may do their student teaching at the Center for Urban Teacher Education (CUTE), through the Regents' Exchange Program, via the Consortium for Overseas Student Teaching, in the customary contractual area established by the College of Education. As exception to student teaching in the customary contractual areas will be considered only if the proposed student teaching site (a) provides the student with a specific program opportunity not available in the contractual area or (b) utilizes unique cooperating teacher expertise. Additional information about the various alternatives for student teaching and application procedures may be obtained in the Office of Student Services, N310 Lindquist Center. Application for student teaching must be filed in the Office of Student Services by March 15, prior to the academic year during which student teaching is desired.

Admission

Prior to taking most professional education courses (courses numbered 78, 79 or 7X) undergraduates students must be admitted to the Teacher Education Program (TEP). Students may enroll, however, in 78:100, Introduction to Secondary School Teaching prior to being admitted to the TEP. Application for admission should be made in the College of Liberal Arts Advisory Office, 118 Subeather Hall, in order to be eligible for admission, students must have completed a minimum of 36 semester hours of course work with a minimum cumulative grade point average of 2.3. Admission decisions will also be based on grade-point average in the major, and other criteria relevant to teaching success. Students should consult a College of Education advisor on their subject matter field, or the Division of Secondary Education Office, N305 Lindquist Center for additional information on admission criteria. Graduate students who have been admitted to the Graduate College for "certification only" do not have to apply for admission to the Teacher Education Program. Their admission to "certification only" automatically implies admission to the TEP.

Upon admission to the TEP, students will be assigned an education advisor.

Graduate Programs

The Division of Secondary Education offers degree programs in the College of Liberal Arts, advanced degree programs in the following areas: art education, communication and theatre, counseling and supervision, developmental reading, English education, foreign language education, home economics education, mathematics education, music education, physical education, science education, and social studies education.

In some fields, only master's level programs are offered, whereas in other fields, master's, Specialist and Ph.D. degree programs are also offered. All degree offerings are listed below, grouped by program area.

Art Education

Master of Arts

The master's degree program is administered by the School of Art and Art History with the cooperation of the College of Education. Students make application for admission to the School of Art and Art History.

The purpose of the program is to prepare highly qualified teachers of art for elementary and secondary schools and community colleges. The strong academic emphasis of this program is to assist teachers who are themselves
creativity to become highly literate in the history and language of art. 

Admission
Applicants must have completed the equivalent of the minimum course work in art required for the B.A. or B.F.A. degree in art from The University of Iowa and a certificate or major in art. Applications must be accompanied by a representative portfolio of the candidate's work consisting of eight slide reproductions of art work and one example of written work. The written work may be a paper previously written for a course in art or may be an original paper. This work will be evaluated following admission to permit students to make up required course work concurrent with work for the degree. Candidates must meet Graduate College requirements for admission.

Degree Requirements
Studio and Art History (18 s.h.)—Either 12 semester hours of studio art or 9 semester hours of studio art and 12 semester hours of art history or 8 semester hours of studio art; Art Education Seminars (8 s.h.)—This course 75/357 Seminar. Current Issues in Art Education; Twelve semester hours to be specified after the student begins the program; Thesis—Either a written or oral thesis; if a studio thesis is elected the student must pass M.A. clearance in the School of Art and Art History; Comprehensive Examinations—A written and/or oral examination in art education; the student may elect a three-hour examination or an one-month research question.

Doctor of Philosophy
The doctoral degree program is administered by the Doctoral Committee in Art Education with the cooperation of the School of Art and Art History. Students are required to make application for admission to the College of Education. The purpose of the program is to prepare college teachers and researchers in art education and supervisors of art in state departments of education and school systems. To provide an opportunity for continuous graduate and undergraduate work in art history and in studio.

Admission
Students must meet the general requirements for doctoral students in the Graduate College and have an M.A. degree in art education from the University of Iowa and equivalent degree from an accredited degree college or university. Application to the program should be accompanied by a representative portfolio of the candidate's work, consisting of 12 slide reproductions of art work and two examples of written work. The written work may consist of papers previously written for a course in art or may be original papers. These should be submitted to the office of Art Education, 13 North Hall.

In the case of course work deficiencies, the student will be informed of the number of hours of courses. One year of successful teaching experience in an Elementary or secondary school is required prior to admission to the College of Education and the preparation of the doctoral program.

Degree Requirements
At least 48 semester hours of graduate work beyond the M.A., plus 4 with the student's advisor, including at least 15 semester hours in the School of Art and Art History, 15 semester hours in art education seminars, 15 semester hours in a related area (e.g., aesthetics, anthropology, higher education, early childhood education, psychology, sociology), and 15 semester hours in courses meeting the individual's needs (to be specified after the student begins the program); 75/306 or 75/306 Introduction to Research in Art Education; or 75/357 Seminar Current Issues in Art Education Comprehensive examinations, both oral and written—The written examination consists of an in-depth research problem assigned by the student's committee and to be completed within 14 days after which an oral examination on the project is held. The written portion of the examination is not intended to relate directly to the dissertation project. Satisfactory completion of a written dissertation for at least 12 semester hours, which constitutes a contribution to scholarship, the student is expected to provide a dissertation proposal and defend it before the dissertation committee; an oral examination on the dissertation in the Ph.D. final examination.

Communication and Theatre Arts Education
Master of Arts
The purpose of the program is to prepare teachers and supervisors of speech and theatre for secondary schools.

Admission
Candidates must have a grade-point average of 3.5 for conditional admission and 2.75 for regular admission. Candidates without prior academic background in speech may find it necessary to take additional courses beyond the minimum requirement. Application should be made to the Department of Communication and Theatre Arts, 224 Jessup Hall.

Degree Requirements
At least 30 semester hours of approved graduate courses, at least 24 of them at this institution; A graduate level course in communication education; 96/300 Introduction to Research; A graduate-level seminar in the Department of Communication and Theatre Arts; Six to nine semester hours of graduate courses in education, selected in consultation with the candidate's departmental advisor; A paper or project involving substantial scholarly investigation and writing, which normally will be done in a seminar and presented to the candidate's departmental advisor; A comprehensive examination consisting of three two-hour segments to be defined and limited by the student and his advisor at the time that the plan of study is approved.

Master of Arts in Teaching
Designed for superior liberal arts graduates who have had few or no professional education courses, this program prepares students to enrich their backgrounds by completing graduate course in Art teaching area and graduate education courses which constitute professional preparation leading to secondary teaching certification.

Admission
Applicants must have an accredited bachelor's degree in Liberal Arts or Fine Arts, a course in the basics of speech (voice and phonetics) or evidence of adequate previous training; a grade-point average of 3.2; a grade-point average of 3.2; satisfactory scores on the Graduate Record Examination Aptitude Test. Students must maintain a 3.0 grade-point average in graduate work once they are accepted into the program.

Degree Requirements
A minimum of 18 semester hours of graduate course work in Communication and Theatre Arts, including:
76/300 Introduction to Research (must be taken the semester the course is offered during the student's period of residence) A graduate seminar in any division of the department A graduate course in communication education (not the general communication methods course) Electives chosen in consultation with advisor The following sequence in the College of Education:
Curriculum and Supervision
Master of Arts
The purpose of the program is to prepare teachers and administrators for positions as consultants, directors, and coordinators in secondary school curriculum development.

Admission
Students meet the general requirements of the Graduate College. Teaching experience is desirable.

Degree Requirements
Common Core (22-23 s.h.)
70:198 Curriculum Foundations 2-3 s.h.
70:197 Principles of Education 2 s.h.
70:257 Educational Measurement and Evaluation 3 s.h.
70:256 Teaching and Use of Evaluation Instruments 3 s.h.
70:284 Junior High School and Middle School Curriculum 2-3 s.h.
70:291 Secondary School Curriculum 3 s.h.
70:300 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 3 s.h.
Research (at or selected in consultation with advisor; Cognates (4-6 s.h.)—in a subject field such as English; Electives—selected in consultation with advisor to complete a total of 30-32 s.h.)—for students writing a thesis.
70:393 Master's Degree Thesis 2-4 s.h.
Two three-hour comprehensive examinations or in curriculum and one in a related field in education or in a cognate field or three two-hour examinations.

Doctor of Philosophy
The purpose of the program is to prepare students for leadership positions in the field of curriculum for secondary schools, state departments, interstate systems, and college teaching.

Admission
Students must meet the general requirements of the Graduate College, hold a valid teaching certificate, and have at least two years of teaching experience. Applicants must be approved for admission by a faculty review committee.

Degree Requirements
Common Core (22-23 s.h.)
70:196 Curriculum Foundations 2-3 s.h.
70:291 Secondary School Curriculum 3 s.h.
70:200 Design and Organization of Curriculum for Early Childhood, Elementary, and Middle Schools 3 s.h.
70:391 Problems of Curriculum Planning 3 s.h.
At least two advanced supervision courses in secondary or elementary school subject fields 6 s.h.
70:257 Educational Measurement and Evaluation 3 s.h.
70:256 Construction and Use of Evaluation Instruments 3 s.h.
70:390 Problems in supervision 2 s.h.
70:130 Educational Sociology 2 s.h.
70:117 Philosophy of Education 2 s.h.
70:131 Educational Psychology 3 s.h.
70:170 Introduction to Psychology of Reading 3 s.h.
70:242 Selected Applications of Statistical Techniques 3 s.h.
70:203 Computer Applications in Education 3 s.h.
70:267 Theory in Administration 3 s.h.
70:260 Secondary School Principal 3 s.h.
70:261 Junior High School and Middle School Curriculum 2-3 s.h.
70:120 Introduction to Instructional Design and Technology 3 s.h.
70:150 Exceptional Persons 3 s.h.
All doctoral candidates are required to complete at least 8 semester hours of cognate work, preferably in psychology, sociology, political science; a dissertation and research tools dealing with a problem approved by the student's major advisor in the area of curriculum and instruction. Two research tools must be selected with the approval of the students' advisor.
70:450 Ph.D. Thesis 10-18 s.h.
Candidates take three three-hour comprehensive examinations in secondary school curriculum and secondary school administration, and one related field in education or in a cognate field.

Developmental Reading
Master of Arts
The program is designed to prepare graduate students for positions as reading specialists in kindergarten and grades 1 through 12. Successful completion of this program, combined with four years successful teaching experience qualifies the student for certification as a reading specialist. See Early Childhood and Elementary Education for a complete description of this program.

English Education
Master of Arts in English with Specialization in English Education
The purpose of the program is to provide specialization in subject matter and professional concerns of teaching for secondary school classroom teachers. Applications should be made to the director of graduate studies, Department of English.

Admission
A secondary school teaching certificate is required. A major in English, preferred; undergraduate grade-point average of 3.0 in English and 3.0 GPA. Applicants test score above the fiftieth percentile on the verbal examination. Students must maintain a 3.0 grade-point average while they are in the program.

Degree Requirements
A minimum of 30 semester hours in courses offered by the Department of English. Students must complete courses in professional education courses; and Regular written comprehensive examinations administered to all M.A. candidates in English.

Master of Arts
The purpose of the program is to prepare supervisors of English, department chairs, and curriculum specialists for secondary schools, and to prepare teachers of specialized areas. Application should be made to the College of Education.

Admission
Students must meet the general requirements of the Graduate College, hold a secondary school teaching certificate, and have acquired a minimum of 30 semester hours in English. Preferred applicants will have a grade-point average of 3.0 or above and
a verbal score above the national percentile on the GRE Aptitude Test. Students must maintain a 3.0 grade-point average while they are in the program.

Degree Requirements

A student will specialize in English education and one or two other areas. The other area(s) may be: a literary field, junior-high school teaching, curriculum, reading, composition, speech and drama, language development, visual and auditory literacy, literature for children and adolescents. An advisor and the student will plan the program of study. The student will demonstrate competence in chosen areas by participating in a seminar in each area. Nine semester hours must be taken in courses numbered 200 or above. The student will take a comprehensive examination in English education and in his/her chosen area(s).

Master of Arts in Teaching

The M.A.T. degree program is designed for students with an undergraduate degree in English, but who have had few or no professional education courses. Successful completion of the program enables the student to receive certification as a secondary school teacher of English.

Admission

Applicants must have a bachelor's degree in English and have a minimum undergraduate grade-point average of 3.0. Since this is a certification program, candidates cannot have qualified for certification previously. They are expected to have no more than 6 hours of coursework from any professional education courses prior to admission.

Degree Requirements

A minimum total of 45 semester hours; At least 18 semester hours of graduate courses offered by the Department of English, with the advisor's approval, for up to 12 semester hours of 500-level education courses; 7P:131 Educational Psychology 3 s.h.
7P:107 History of Western Education 3 s.h.
7P:117 Philosophies of Education 3 s.h.
7S:9 Pre-education Practicum 1-2 s.h.
7X:170 Human Relations for the Classroom Teacher 3 s.h.
7S:104 Methods: High School Reading 3 s.h.
7S:115 Methods: English 3 s.h.
7S:191-192 Observation and Laboratory Practice in the Secondary School 12 s.h.

A two-part comprehensive examination; one in writing methods, materials, and curriculum for high school English and the second part covering one-half of the Department of English's M.A. reading list.

Doctor of Philosophy

The purpose of the program is to prepare teacher education in English, specialists in literature for young people, specialists in reading in secondary and junior college levels, and coordinators/supervisors of secondary arts programs.

Admission

Students must meet the requirements of the Graduate College for admission to a doctoral program. In addition they must have a secondary school teaching certificate, grade-point average of 3.0 and GRE Aptitude Test score above the fiftieth percentile on verbal and quantitative sections. Students must maintain a 3.0 grade-point average while they are in the program. Their candidacy is revocable if necessary.

Degree Requirements

Area of Specialization: Teaching of English (0-18 s.h.), including four of the following courses:
7E:290 Supervision of Elementary School Language Arts 3 s.h.
7E:300 Seminar: Research and Current Issues 3 s.h.
7E:315 Seminar: Teaching English in Middle School and Junior High School 3 s.h.
7P:170 M.A. Seminar: English Education 3 s.h.
7S:145 Ph.D. Seminar: English Education 2-4 s.h. (required for two or more registrations)

Cognates and electives (56-83 s.h.) may include reading, school curriculum, literature for young people, literature of a particular period or genre, educational psychology, special education, educational media, rhetoric, composition, dramatic arts, education. Students and advisor will select two areas of specialization in addition to the teaching of English. Areas of specialization will typically require a minimum of 6 semester hours of work in an area.

Facility in a research tool agreed upon by the student and advisor, which will help the student achieve professional objectives.

Students will take comprehensive examinations in the three areas: the teaching of English, a cognate area, and an elective area. The minimal requirements for eligibility to write comprehensive examinations vary; the general requirement is three courses in an area.

Dissertation (typically 12 s.h.).

Foreign Language Education

Master of Arts in Teaching

The M.A. program in Teaching Foreign Languages is offered in French and German, exclusively. The M.A.T. program is designed for superior liberal arts graduates who have had few or no professional education courses. Successful completion of the program leads to secondary school teacher certification.

Admission

A bachelor's degree with a major in French or German and a 3.0 undergraduate grade-point average is required.

Degree Requirements

At least 18 semester hours of graduate courses in French or German and the following 24 semester hours of professional education courses:
7P:151 Educational Psychology 3 s.h.
7F:107 History of Western Education 3 s.h.
7P:117 Philosophies of Education 2 s.h.
7S:118 Methods of Foreign Language Instruction 3 s.h.
7S:191-192 Observation and Laboratory Practice in the Secondary School 12 s.h.
7P:187 Seminar in Curriculum and Student Teaching 1 s.h.
7P:170 Hymes Relations for the Classroom Teacher 3 s.h.

A four-part comprehensive examination covering the candidate's knowledge of the two languages, proficiency in French or German, and an area of foreign language education.

Home Economics Education

Master of Arts

The M.A. program is administered by the Department of Home Economics and is described in the "College of Liberal Arts" section of the Catalog.

Master of Arts in Teaching

Admission to the M.A.T. program is through the College of Education, however, the program requirements are given under the "Department of Home Economics" in the "College of Liberal Arts" section of the Catalog.

Mathematics Education

Master of Arts

The purpose of the program is to provide aged students with advanced professional training in mathematics and education as a better foundation for teaching at the secondary level.
Admission
Candidates must meet the admission requirements of the Graduate College and except in unusual cases, hold a professional certificate to teach secondary school mathematics.

Degree Requirements
A minimum of 10 semester hours of course work in mathematics approved by the student’s advisor.

A minimum of three courses in mathematics education selected from the following:
- 75:331 Teaching Computer Programming in Secondary School Mathematics 3 s.h.
- 75:225 Current Issues, Approaches, and Materials in Secondary School Mathematics Teaching 3-1 s.h.
- 75:326 The Teaching of Geometry 3 s.h.
- 75:237 Teaching Mathematics in the Intermediate and Junior High School 2-3 s.h.
- 75:228 Teaching the Low Achiever in Mathematics 2-3 s.h.
- 75:339 Teaching of Algebra 4 s.h.
- 75:350 Seminar: Mathematics Education 2 s.h.

Note: Additional courses may be available later.

Two courses from a cognate area in education. Suggested areas are educational psychology, educational statistics and measurement, secondary school administration, and special education.

Sufficient electives in mathematics and education selected with the approval of the advisor to complete 32 semester hours of credit.

Three two-hour comprehensive examinations in secondary mathematics education, the second in mathematics, and the third in a related area.

Master of Science in Mathematics with Education Option
The purpose of the program is to prepare candidates for teaching positions in schools with advanced specialization in mathematics and mathematics education. This program is especially recommended for students continuing work for the Ph.D. in Mathematics Education. This program is administered by the Department of Mathematics. Application should be made to the Department of Mathematics.

Admission Requirements are the same as for the M.A. in Education.

Degree Requirements
Minimum of 24 semester hours in the Division of Mathematical Sciences including a two-semester sequence in algebra and a two-semester sequence in geometry.

Two courses in mathematics education; Comprehensive examination of six hours over the required courses in analysis, algebra, statistics, and education. The examination will assess the degree's knowledge of mathematics and his or her understanding of the relevance of specific concepts relating to the teaching of secondary school mathematics.

Doctor of Philosophy
The program for a Ph.D. in mathematics education is administered by the College of Education. The 72 semester hours include work taken toward the master's degree. (All credit must be validated if taken more than 10 years previously.) Minimum course requirements are for exceptional students. Typically, a program will involve 80 to 90 semester hours.

The purpose of the program is to prepare educators, teacher education personnel, practicing teachers, and researchers in mathematics education.

Admission
Applicants must have an undergraduate major in mathematics or the equivalent; a master's degree in mathematics, mathematics education or education; a 3.0 grade-point average or above; a current teaching certificate; and a minimum of two years of teaching experience.

Degree Requirements
The mathematics education program has the following degree options:

- A minimum of 36 semester hours of graduate work in the Division of Mathematical Sciences (mathematics, statistics, and computer science).

- A minimum of 18 credits in mathematics and 18 credits in education

Courses jointly listed in the catalog fulfill this requirement. Students who have completed their mathematics major at another institution must complete a minimum of 6 additional semester hours of course work in mathematics at The University of Iowa which must be chosen with the approval of the advisor.

Competency in two areas of mathematics including statistics and computer science, and algebra or analysis (both may be chosen). This competency will be determined by satisfactory performance on master's degree examinations or their equivalent.

A minimum of 24 semester hours of course work in the College of Education. Courses meeting the requirement are to be selected from mathematics education and from other professional education courses appropriate to the candidate's career plans.

At the completion of the program, the student must:

Have a cumulative grade-point average of 3.0 or above in all graduate work in mathematics;

Have a grade-point average of 3.0 on all University of Iowa graduate work in mathematics;

Have a cumulative grade-point average of 3.0 on all graduate work;

Have a cumulative grade-point average of 3.0 or above in all University of Iowa graduate work in mathematics.

Three three-hour written comprehensive examinations, one in mathematics education and two examinations selected from other tests of education or mathematics. An oral examination follows the written examinations. It is the student's responsibility to plan a program with faculty members in the cognate area to select courses which will prepare the student for these examinations. Competency in one computer language and in educational statistics is required.

A dissertation on a research problem in mathematics education. An oral examination will be conducted in defense of the dissertation. Normally, a student will be expected to earn a minimum of 18 semester hours of dissertation credit.

Music Education
Both the Master of Arts and Doctor of Philosophy degree programs in music education are administered by the College of Education. Application is made to the School of Music.

Master of Arts
The Master of Arts program is designed to provide students with deeper insights into music, the theory and practice of music education, and the role of music in the liberal arts curriculum.

Admission
The student must: be a certified music teacher in Iowa; be in the process of completing certification requirements. A grade-point average of 3.5, excluding grades in ensemble, is required for admission to regular status.

Degree Requirements
General requirement:

25:321 Introduction to Graduate Study in Music 2 s.h.

Music theory:

25:145 Counterpoint Forms 3 s.h.

25:147 Tonal Forms 3 s.h.

25:148 Analytical Specific field hours and course requirements in the theory area are determined by
scores on the advisory examinations. Music History and Literature
Music I 26:301 Advanced History and Literature of Music I 3 s.h.
Music II 26:302 Advanced History and Literature of Music II 3 s.h.

Specific hour and course requirements in the advisory examinations are determined by scores on the advisory examinations.
Music Education 25:244 Supervision and Administration of Music Programs 3 s.h.
26:344 Clinical Workshops in Music 1 s.h.

Electives to be selected from music education consultation with the advisor 4-6 s.h.
Two semester hours of ensemble credit.
Two to four semester hours of applied music.

The amount of elective credit applicable toward the M.A. degree is dependent upon the scores earned on the music advisory examinations and the amount of credit earned in music education elective courses.
In the semester in which the student expects to complete the degree, the candidate must take a final written master's examination (12 semester hours). Areas of concentration in which the major examinations may be written are commonly general music education, music education, music history and literature.

Doctor of Philosophy
The purpose of the program is to prepare students for teaching, research, or other professional functions in the following type of positions:
College positions—teachers of music in music education classes and activities; band, chorus, and orchestra directors; and administrators of music departments and schools of music; Public school positions—music supervisors, research and curriculum consultants, and directors of city or district school music programs.

Admission
Application is made to the School of Music. For admission to the Ph.D. program in music education, a student must have a 3.0 grade-point average (excluding grades in ensembles), have a score above the fiftieth percentile on the verbal ability section of the GRE Aptitude Test, and be qualified for a valid teaching certificate, and have a minimum of two years of successful music teaching experience.

In addition to the specific admission requirements stated above, an appraisal of teaching success, academic potential, and writing ability is made by the music education faculty before qualifications for admission are finally determined.

Degree Requirements
The Ph.D. degree is granted on the basis of achievement (as determined by course grades and evaluations on both the comprehensive and final examinations) and completion of the minimum hours required.

Course requirements and semester hours listed below are to be considered minimum requirements for the typical student in preparation for the satisfactory passing of the comprehensive and final examinations.

Music (2-29 s.h.)
General
*25:321 Introduction to Graduate Study in Music 8 s.h.
*26:205 Physics of Sound and Music 3 s.h.
*25:145 Counterpoint I 3 s.h.
*25:147 figured bass 3 s.h.
*Elective (15:145-163) 3 s.h.

Music History and Literature
*25:301 Advanced History and Literature of the Music I 3 s.h.
*26:302 Advanced History and Literature of the Music II 3 s.h.
Elective (25:303-314) 3 s.h.
*Applied and Ensembles 4 s.h.
*Electives 0-2 s.h.

Music Education (25-26 s.h.)
*75:240 Supervision and Administration of Music Programs 3 s.h.
*75:444 Psychology of Music 2 s.h.
*Electives 4-6 s.h.

75:440 Social and Psychological Factors in Music Education 3 s.h.
75:141 Seminar: Contemporary Music Education 3 s.h.
75:342 Seminar: Special Topics in Music Education 3 s.h.

Education (8 s.h.)
*77:143 Introduction to Statistical Methods 3 s.h.
*77:242 Selected Applications of Statistical Techniques 2 s.h.
*Electives 0-2 s.h.

M.A. level requirements
Electives
Selected in consultation with the student's advisor on the basis of advisory examination scores with the student's professional needs and goals. Students take courses from applied music, ensemble, theory, history and literature, music education, education, statistics, and psychology to total 10 to 25 semester hours.

Dissertation
Students earn a minimum of 12 semester hours for work on a dissertation.

Comprehensive Examinations
The comprehensive examination is an in-depth evaluation of the student's knowledge of selected fields of study. The candidate must demonstrate maturity and scholarship in the areas of theory and practice of music education, research design and technique, and specialization in music performance, history and literature of music, and music theory and analysis.

The examination is divided into two parts: music education theory and practice and research techniques, music theory and analysis, music history and literature, and specialized music performance area.

Physical Education and Dance
Master of Arts
Requirements for this program are described in the "College of Liberal Arts" section of the Catalog. See "Department of Physical Education and Dance—Hayley Gym." Doctor of Philosophy
This program is also described in the "College of Liberal Arts" section of the Catalog.

Field House Program in Physical Education
Master of Arts
See "Physical Education—Field House" in the "College of Liberal Arts" section of the Catalog.

Doctor of Philosophy
The Ph.D. in Physical Education—Field House program is also described in the "College of Liberal Arts" section of the Catalog.

Science Education
The following advanced degrees are offered in Science Education:
Master of Arts in Teaching
Master of Science (with or without thesis)
Educational Specialist
Doctor of Philosophy
All programs are described in the "College of Liberal Arts" section of the Catalog under "Science Education."

Social Studies Education
Master of Arts
The purpose of the program is to provide an opportunity for interdisciplinary work in history, social sciences, or related areas for classroom teachers, high school department chairs, and supervisors, as well as others interested in acquiring greater competency in the social sciences and greater proficiency in teaching and evaluating students.

Admission
Applicants must have a minimum of 20 semester hours of undergraduate credit in the area of history and/or the social sciences from an accredited institution, a cumulative grade-point average of 3.0;
3.0 grade-point average in history and 2.0 grade-point average in another elective course, plus 2.0 grade-point average in history.

Thesis: A thesis consists of a research project in history, the social sciences, or related areas. A thesis is required of all students in the College of Arts and Sciences.

Doctor of Philosophy

The purpose of the program is to prepare secondary school, supervisory, curriculum directors, teacher education personnel, and college instructors in the social sciences and pedagogy.

Admission

Applicants must have a bachelor’s degree in history or the social sciences, or a related area. They must also meet the requirements for admission to a doctoral program in the Graduate College. A minimum grade-point average of 3.0 is required.

Degree Requirements

A minimum of 90 semester hours of coursework and dissertation credit beyond the bachelor’s degree is required. The following requirements are in addition to those of the graduate college.

75 percent of the total 90 semester hours: work in disciplines chosen will constitute 75 percent of the total.

70 semester hours distributed among history, social sciences, or related areas, with a minimum of 10 semester hours in each of the fields chosen, or

Thirty-eight semester hours distributed among disciplines listed above and education.

Nine semester hours of the total 38 semester hours must consist of graduate courses numbered 200 or above, distributed in the five fields selected for concentration. A minimum of 2 to 3 semester hours of 98:201, 98:202, or 75:203 must be completed with one of the faculty members in social studies education, unless other coursework with these faculty members has been completed.

Thesis (if this option is selected)—A research or investigative project in history, the social sciences, or related areas in which the thesis director will be a member of the appropriate department; or an investigative project in social studies education, in which case the thesis director will be a member of the College of Education; or comprehensive examinations—A test written examination in each of the five fields of concentration. The oral examination will be conducted by the candidate’s committee as a whole.

Doctor of Education

The purpose of the program is to prepare educational leaders, supervisors, teachers, and university faculty in the areas of educational administration and supervision.

Admission

Applicants must have a bachelor’s degree in history, social sciences, or related areas. They must meet the requirements for admission to a doctoral program in the Graduate College. A minimum grade-point average of 3.0 is required.

Degree Requirements

A minimum of 90 semester hours of coursework and dissertation credit beyond the bachelor’s degree is required. The following requirements are in addition to those of the graduate college.

75 percent of the total 90 semester hours: work in disciplines chosen will constitute 75 percent of the total.

70 semester hours distributed among history, social sciences, or related areas, with a minimum of 10 semester hours in each of the fields chosen, or

Thirty-eight semester hours distributed among disciplines listed above and education.

Nine semester hours of the total 38 semester hours must consist of graduate courses numbered 200 or above, distributed in the five fields selected for concentration. A minimum of 2 to 3 semester hours of 98:201, 98:202, or 75:203 must be completed with one of the faculty members in social studies education, unless other coursework with these faculty members has been completed.

Thesis (if this option is selected)—A research or investigative project in history, the social sciences, or related areas in which the thesis director will be a member of the appropriate department; or an investigative project in social studies education, in which case the thesis director will be a member of the College of Education; or comprehensive examinations—A test written examination in each of the five fields of concentration. The oral examination will be conducted by the candidate’s committee as a whole.

Doctor of Philosophy

The purpose of the program is to prepare secondary school, supervisory, curriculum directors, teacher education personnel, and college instructors in the social sciences and pedagogy.

Admission

Applicants must have a bachelor’s degree in history or the social sciences, or related areas. They must meet the requirements for admission to a doctoral program in the Graduate College. A minimum grade-point average of 3.0 is required.

Degree Requirements

A minimum of 90 semester hours of coursework and dissertation credit beyond the bachelor’s degree is required. The following requirements are in addition to those of the graduate college.

75 percent of the total 90 semester hours: work in disciplines chosen will constitute 75 percent of the total.

70 semester hours distributed among history, social sciences, or related areas, and education. Work in the disciplines chosen will constitute 75 percent of the total.

Courses

78:01 Pre-Education Practicum 1.0 h.

78:11 Old Testament Survey 3.0 h.


78:13 Bible in the New Testament 1.0 h.

78:14 Bible in the Old Testament 1.0 h.

78:15 Biblical Theology 1.0 h.

78:16 Historical Theology 1.0 h.

78:17 Sociology of Religion 1.0 h.

78:18 Religious Education 1.0 h.

78:19 Church History 1.0 h.

78:20 Church History 1.0 h.

78:21 Church History 1.0 h.

78:22 Church History 1.0 h.

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78:47 Church History 1.0 h.

78:48 Church History 1.0 h.

78:49 Church History 1.0 h.

78:50 Church History 1.0 h.
70817 Foundational Education 1.5 h
Introduction to a broad understanding in the areas of education and behavior, with an emphasis on effective teaching practices. This course requires a focus on the role of the arts and the development of foundational skills in the classroom environment. (3:0:0)

70818 Teaching Practice 1.5 h
Supervised observation and practice in teaching under the direction of experienced teachers in real classroom settings. Emphasis on the development of classroom management skills and the ability to plan and deliver effective instruction. (3:0:0)

70819 Special Topics in Secondary Education 1.5 h
Concentration on special topics of interest to secondary education professionals. Topics may be selected from a variety of areas prior to registration. May be repeated.

70820 General Music in the Public Schools 1.5 h
Curriculum development, instrumentation, and materials. Emphasis on current teaching methods and techniques. Required of all graduate students in music education; available to other graduate students with permission of instructor. See 72E855.

70821 Secondary Teaching in Middle School and Junior High School 1.5 h
Consideration of current approaches. Offered irregularly at departmental discretion.

70822 Problems in Teaching of English 1.5 h
Framework for studying current issues in language arts. Issues examined. Technical English must be submitted and topic to provide quality instruction for educators.

70823 Writing for Professional Education 1.5 h
Writing seminar for publication in education journals. Offered irregularly at departmental discretion. See 82F321.

70824 Workshop in Secondary School Mathematics 1.5 h
Practical 1-3 weeks of intensive examination of and experiment with major developments in methods of teaching secondary school mathematics. Course may be repeated. May be under a specific instructor.

70825 Teaching Comprehensive Programming in Secondary School Mathematics 1.5 h
Improvement of teaching techniques; development of instructional packages; assignment of instructional activities. May be repeated. Offered with permission of instructor.

70826 Teaching Comprehensive Programming in Elementary School Mathematics 1.5 h
Improvement of teaching techniques; development of instructional packages; assignment of instructional activities. May be repeated. Offered with permission of instructor.

70827 Teaching the Teaching of Mathematics 1.5 h
Consideration of methods to improve secondary school and junior high school mathematics and the evaluation of those methods. Offered each summer session.

70828 Teaching the Teaching of Science 1.5 h
Consideration of methods to improve secondary school and junior high school science and the evaluation of those methods. Offered each summer session.

70829 Teaching Science in Middle School and Junior High 1.5 h
Survey of methods, instruction, and current curriculum development for junior high school science, including teaching of problem solving, scientific reasoning, and the evaluation of instructional materials. Offered each summer session.

70830 Teaching the Law and Education 1.5 h
Incorporating science instruction into the educational model. Offered each summer session.

70831 Instrumental Music Workshop 1.5 h
Emphasis on elementary and intermediate band instrumentation, teaching instrumental methods in public schools and colleges. Offered during summer sessions and irregularly during the academic year. May be repeated. See 82E055.

70832 Supervision of Physical Education 1.5 h
Preparation for administration, research, and graduate students in the field of administration, supervision, and evaluation. Prerequisite: admission to school of education. Offered each spring semester.

70833 Supervision and Curriculum Development in Art Education 1.5 h
Principles and responsibilities of art supervision and administration. Emphasis on curriculum development, teaching, supervision, remedial counseling, and reporting. Study of factors influencing the curriculum: curriculum analysis, selection, organization, preparation, and evaluation. See 72E243, 82G021.

70834 Individual Projects in Music Education 1.5 h
Concurrent projects of special concern to individual music teachers in the public school.

70835 Studio Workshop: Individual Projects 1.5 h
Specific applications of innovative practices to local school settings. Concentrated preparation in K-12 music programs. Emphasis on student performance and evaluation: 72E855, 70834. Offered during summer sessions and irregularly during the academic year. May be repeated.

70836 Program and Research Problems in Science Education 1.5 h
Identification of a program and research problem. Emphasis on preparation of student teachers. Offered during summer sessions.

70837 Preparation of Curriculum Materials for Secondary School Science 1.5 h
Research methods and materials for science courses. Course may be repeated.

70838 Integrating Strategies for Science Instruction 1.5 h
Integration of innovative strategies in science instruction. Offered during summer sessions.

70839 Recent Curriculum Development in Science 1.5 h
Review of recent curriculum efforts for science teachers, including major influences on teaching strategies. Offered during summer sessions.

70840 Supervision and Administration 18-19 School Programs 1.5 h
Review of administration and supervision of 18-19 school programs. Emphasis on the supervision of student teachers and advanced students. May be repeated. Offered during spring semesters and summer sessions.

70841 Social Sciences Education Issues and Challenges 1.5 h
Interdisciplinary topics in philosophy and psychology, with an emphasis on the social sciences. Offered fall semesters.

70842 Psychology, Philosophy, and the Nature of Science 1.5 h
An examination of the psychological and philosophical understanding of the nature of science and the epistemological implications of that understanding. Emphasis on the role of science in society. Offered spring semesters. Prerequisite: permission in history or philosophy of science.

70843 Science Education Teaching, Learning, and Curriculum Models 1.5 h
Theory and techniques for designing printed and electronic teaching/curriculum models. Offered fall semesters. See 72E857.

70844 Science Education Research Models and Conceptual Schemes 1.5 h
See 72E155.

70845 Curriculum Development in the Social Sciences 1.5 h
Study of the status of the social sciences curriculum in the nation's schools; design and assessment of new materials; problem solving in curriculum development. Offered spring semesters of odd years.

70846 Current Issues, Approaches, and Implications in Social Science Teaching 1.5 h
Examination of the role of the social sciences in current educational and social issues. Offered during summer sessions and irregularly during the academic year.

70847 Seminar in Social Science Education 1.5 h
Conferences on selected topics of interest to graduate students in social science education; emphasis on the periodical literature trends, curriculum developments, and research in various aspects of social science education. Offered fall semesters. See 82E021.

70848 Teaching Mathematics in College and University 1.5 h
Recent developments and problems in the teaching of mathematics. Offered each summer session.

70849 Junior High and Middle School Curriculum 1.5 h
Consideration of current trends, philosophy of education, and curriculum development: history of the field in special subject areas; current trends; curriculum planning.

70850 Secondary School Curriculum 1.5 h
Theory and development of secondary school curriculum: analysis of components of curriculum, study and discussion of practices and policies in various subject areas.

70851 Individual Instructors in Secondary Education 1.5 h
Prerequisite: consent of instructor.

70852 Seminar Secondary Teaching 1.5 h
Analysis and evaluation of relevant research in secondary reading existing historical and biographical procedures. Prerequisite: 78E184 and 82E018 of Institute.

70853 Reading: Ohioan: Teaching Practice—Secondary Level 1.5 h
Examines special topics in the diagnosis of reading difficulties. Special emphasis given to various techniques including diagnosis with planning and participation in an internship. Prerequisite: M.A. in reading.

70854 Supervision Methods to Improve Student Teaching 1.5 h
Examines and evaluates current methods of supervision, with emphasis on student teaching, field experiences, professional competency, class procedures, and evaluation training. Emphasis on the development and maintenance of effective teaching. Appropriate for recent teacher education candidates, field supervisory, principles, supervisors, and board members.

70855 Introduction to Research in Art Education 1.5 h
Emphasis on the design and implementation of research projects. See 72E180, 72E181, 72E182, 72E183, 72E184.

70856 Art Education 1.5 h
Theory of aesthetics as related to teaching; principles of esthetics, history of esthetics, and the role of art in society. Emphasis on the arts and education, in addition to other disciplines in education. Course may be repeated.

70857 Interdisciplinary Art Education 1.5 h
See 72E183.

70858 Aesthetics and Education 1.5 h
See 72E180.

70861 Art Education 1.5 h
Focuses on the role of visual arts in education and society. Emphasis on the role of art education in society and the role of the arts in education. See 72E180.

70862 Visual Arts Education 1.5 h
See 72E181.

70863 Aesthetics and Education 1.5 h
See 72E180.

70864 Visual Arts Education 1.5 h
See 72E181.

70865 Art Education 1.5 h
See 72E180.

70866 Visual Arts Education 1.5 h
See 72E181.

70867 Recent Developments in Art Education 1.5 h
See 72E182.

70868 Teaching-Media Education 1.5 h
See 72E183.

70869 Recent Developments in Art Education 1.5 h
See 72E182.

70870 Interdisciplinary Art Education 1.5 h
See 72E183.

70871 Recent Developments in Art Education 1.5 h
See 72E182.

70872 Current Issues, Approaches, and Implications in Social Science Teaching 1.5 h
Examination of the role of the social sciences in current educational and social issues. Offered during summer sessions and irregularly during the academic year.

70873 Seminar: Social Science Education 1.5 h
See 70847.

70874 Teaching Mathematics in College and University 1.5 h
See 70848.

70875 Junior High and Middle School Curriculum 1.5 h
See 70849.

70876 Secondary School Curriculum 1.5 h
See 70850.

70877 Theory and Development of Secondary School Curriculum: Analysis of Components of Curriculum, Study and Discussion of Practices and Policies in Various Subject Areas 1.5 h
See 70851.

70878 Individual Instructors in Secondary Education 1.5 h
See 70851.

70879 Seminar Secondary Teaching 1.5 h
See 70852.

70880 Supervision Methods to Improve Student Teaching 1.5 h
See 70854.

70881 Art Education 1.5 h
See 70857.

70882 Visual Arts Education 1.5 h
See 70861.

70883 Aesthetics and Education 1.5 h
See 70858.

70884 Visual Arts Education 1.5 h
See 70862.

70885 Aesthetics and Education 1.5 h
See 70858.

70886 Visual Arts Education 1.5 h
See 70862.

70887 Aesthetics and Education 1.5 h
See 70858.

70888 Visual Arts Education 1.5 h
See 70862.
Special Education/EDUCATION

75-483 Seminar: Special Topics in Music Education 2 h. Synthesis of research or topics pertaining to music education. Prerequisite: approval of all doctoral students in music education; available to other graduate students with permission of instructors.

75-483A Seminar: Basic Workshop 1 h. Methods and innovative instructional procedures for teaching deaf-blind in public schools and community residential programs. Offered every semester and irregularly during the summer years. May be repeated.

75-483 Seminar: Special Topics in Music Education 2 h. Tapping of current content in the hearing and speech curriculum for individuals with hearing impairments. Offered every semester and irregularly during the summer years. May be repeated.


75-330 Seminar: Science Education 0-6 h. Discussion of currently related fields and educational candidates: research: national issues: program innovations.

75-330 Structures of Science and the Application in Science Teaching 2 h. A research problem in cooperation with a science mentor; preparation of the dissertation prospectus for approval for dissertation committee.

75-334A History of Science and Its Role in Science Education 2 h. Same as 275-334A.

75-356 Science Education Issues, History, and National: International 2 h. Same as 275-356.

75-358 Science Education Nature of Science: International 2 h. Same as 275-358.

75-359 Science Education Teaching, Learning and Curriculum Internship 1 h. Same as 275-359.

75-360 Science Education Research Models and Conceptual Science Internship 2 h. Same as 275-360.


75-372 Seminar: Research Issues in Special Education 3 h. Review of significant contemporary research programs in the education of the handicapped. Prerequisite: 275-330.


75-381 Problems of Curriculum Planning 2 h. Curriculum planning for the handicapped: selection, modification, implementation techniques for developing curriculum materials. Same as 275-381.

75-382 Final Service Seminar in Special Education 2 h. Preparation: presentation: evaluation: of instruction. Prerequisite: 275-330.

75-390 Special Education: Doctoral Thesis 1-6 h. Research: practice: case study. Prerequisite: consent of instructor.


75-404 Research in Art Education 3 h. Individual research under supervision; applicable to thesis preparation and dissertation research development. May be repeated.

75-407 Research Science Education 1 h. Planning, conducting research projects by M.A. and Ph.D. candidates. Prerequisite: consent of instructor.

75-455 Ph.D. Seminar: English Education 2 h. Discussion and evaluation of recent research and theory in education as it affects English in the secondary schools. May be repeated. Prerequisite: consent of instructor. Same as 275-455.

75-456 Music Education: Advanced Observation and Lab Praxis 2 h. Graduate students interested in planning and teaching units in special education classes and in the observation of unusual students. May be repeated.

75-457 Social and Criminology of Factors in Music Education 2 h. A socio-cultural approach which examines various sociocultural and environmental factors of music education and relates them to the needs of the individual within the framework of music education.

75-465A Seminar: Research in Secondary Education 2 h. Identification of problems for research and development plans of current research activities. May be repeated.

75-480 Ph.D. Thesis 2 h. Prerequisite: consent of instructor.

The Division of Special Education expects its graduates will continue to find opportunities as teachers of special classes in the public schools or as resource persons for teachers working with handicapped children in regular classrooms. Opportunities in the latter area reflect the trend in special education toward the accommodation of handicapped children in regular classrooms with supplemental help rather than the segregation of handicapped children in special classes.

The University of Iowa program in special education aims to give the B.S. or B.S. student a knowledge of the characteristics of exceptional children, education programs currently provided for exceptional children, methods of teaching exceptional children, and practical experience with exceptional children.

A student majoring in special education may qualify to teach the mentally retarded at the elementary level (State of Iowa Approval 81), to teach the mentally retarded at the secondary level (State of Iowa Approval 81), (Endorsement 203), or to teach the physically handicapped at the elementary level (State of Iowa Approval 84). Both the elementary-level programs require that the student also complete the requirements for certification in elementary education (State of Iowa Endorsement 103). 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/professionally handicapped must also complete a major in elementary or secondary mental retardation.

Program Requirements

Elementary Mental Retardation

First Year

75-39 Introduction to Assessment in Special Education 2 h.
75-130 Exceptional Persons 3 h.
75-130 Mental Retardation 3 h.

Second Year

75-31 Teaching Middly Mentally Retarded: Elementary 3 h.
75-33 Practicum with Physically Handicapped 2 h.
75-130 Teaching Middly Mentally Retarded 2 h.
75-34 Practicum with Physically Handicapped 2 h.

Third Year

75-121 Supervised Teaching with Physically Handicapped 3 h.
Students completing this program will be recommended for the State of Iowa Approval 84 (Mental Disabilities K-9).

Elementary Physically Handicapped

First Year

75-39 Introduction to Assessment in Special Education 2 h.
75-34 Practicum with Physically Handicapped 3 h.
75-130 Orientation to Rehabilitation of Physically Handicapped Child 3 h.
3-15 Introduction to Speech and Hearing Processes and Disorders 3 h.

Second Year

75-130 Methods of Teaching Physically Handicapped 3 h.
75-34 Practicum with Physically Handicapped 2 h.

Third Year

75-191 Supervised Teaching with Physically Handicapped 7 h.
Students completing this program are recommended for State of Iowa Approval 84 (Physical Disabilities K-9).

Satisfaction and the physically handicapped program are eligible to apply for the Janet R. Soder Menorship (available which will be awarded to the student during the junior or senior year). The recipient of this one-semester stipend is chosen on the basis of
financial need, demonstrated scholastic ability, judgment, and promise of success in a professional teaching career in special education.

**Secondary Mental Retardation**

First Year
- 7U:30 Introduction to Assessment in Special Education 2 s.h.
- 7U:130 Exceptional Persons 3 s.h.
- 7U:135 Mental Retardation 3 s.h.
- 7U:120 Introduction: Secondary School Teaching 2 s.h.
- 7V:91 Pre-education Practicum 2 s.h.

**Second Year**
- 7U:32 Teaching Mildly Mentally Retarded: Secondary 3 s.h.
- 7U:33 Practicum with Mildly Handicapped 2 s.h.
- 7U:136 Teaching Moderately Mentally Retarded 2 s.h.
- 7U:34 Practicum with Moderately Handicapped 2 s.h.
- 7U:133 The Culturally Different in Education Settings 3 s.h.
- 7X:103 Facilitating Career Development in Education 3 s.h.
- 7P:170 Introduction to Psychology of Reading 3 s.h.
- 7W:103 Selection and Use of Media for Instruction 3 s.h.
- 34:141 Juvenile Delinquency or 34:142 Criminology 3 s.h.

Third Year
- 7U:120 Supervised Teaching with Mentally Retarded 15 s.h.

Students completing this program are recommended for State of Iowa Endorsement 20 (Secondary Teaching) and Approval 81 (Mental Disabilities 7-12).

**Preschool Handicapped**

First Year
- 7U:130 Exceptional Persons 3 s.h.
- 7U:138 Mental Retardation 3 s.h.
- 7U:139 Orientation to Rehabilitation of Physically Handicapped Child 3 s.h.
- 34:143/144 Introduction to Speech and Hearing Processes and Disorders 3 s.h.

Second Year
- 7U:120 Methods of Teaching Preschool Handicapped 3 s.h.
- 7U:136 Teaching Moderately Mentally Retarded 2 s.h.

Third Year
- 7U:123 Supervised Teaching with Preschool Handicapped 3 s.h.

Students completing this program will be recommended for State of Iowa Certification in Preschool Handicapped, pending program approval by Iowa Department of Public Instruction.

**Severely/Profoundly Handicapped**

First Year
- 7U:134 Teaching Severely/Profoundly Handicapped 3 s.h.
- 7U:35 Practicum with Severely/Profoundly Handicapped 2 s.h.

Second Year
- 7U:123 Teaching Severely/Profoundly Handicapped 3 s.h.

Third Year
- 7U:123 Supervised Teaching with Severely/Profoundly Handicapped 7 s.h.

Students completing this program will be recommended for State of Iowa Certification in Severely/Profoundly Handicapped, pending program approval by Iowa Department of Public Instruction.

**Undergraduate Admission**

Sixty-five students who have completed at least one year of college course work are admitted to special education each year. Admissions decisions are based on cumulative college grade-point average 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 religious organizations, extensive child-sitting experiences with handicapped children, and teacher aid experiences in classes for the handicapped.

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. All applicants to the graduate program have undergraduate preparation as teachers in regular or special education. Applications from students without valid teaching certificates will be reviewed by the division admissions committee. Graduate programs are offered for certification only, and at the M.A., Ed.S., and Ph.D. degrees levels. Initial certifications or additions to present certificates are available at the graduate level in elementary and secondary learning or emotional disabilities, school psychology, work-study coordination, administration of special education and teacher education.

**Masters of Arts**

Most students admitted to the M.A. program are seeking to add an endorsement 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; and a 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. Numbers admitted depend on the resources available.

**Educational Specialist in Special Education**

The purpose of the program is to provide advanced graduate training to 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 38 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, 36 semester hours in full-time teaching experience before admission to the program.

**Educational Specialist in Special Education Administration**

The primary objective of the program is to provide sufficient training and experience to enable graduates to obtain entry-level positions in administration. The career focus of the program is on middle management positions, such as 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 the State 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 60 semester hours of credit.

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 experiences as a teacher.

Educational Specialist in School Psychology

The purpose of this program is to provide course work 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, Department of Education). 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 at least a 3.0 grade-point average upon graduation.

Doctor of Philosophy

The purpose of the Ph.D. program in special education is to prepare students as competent school psychologists. This program requires a candidate to submit a dissertation. Research training in psychology, school psychology, and educational psychology is emphasized. The program is designed to prepare students for careers in educational psychology, school psychology, and related fields.

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Facilities

Special facilities available to students in special education include the University Hospital School (for mentally and physically disabled) with the Associate in Therapies Program, and the 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.S., and Ph.D. programs. The Joanne Zuber 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 include a master's degree and certification in some area of teaching exceptional children, and classroom experience as a teacher.

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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 in our society. This activity demands a high degree of creativity, coupled with a solid understanding of engineering fundamentals, good judgment, and a practical sense of economics.

The College of Engineering prepares young men and women for one or more of the many career opportunities in the engineering profession. Such opportunities include positions in design, production, development, research, and consulting. Engineers are employed in industrial organizations, government agencies, and in private practice.

The College of Engineering has two major responsibilities. The first responsibility is to provide high quality undergraduate engineering programs by maintaining contemporary engineering curricula and laboratories, as well as support services such as academic advising and engineering career counseling. The second responsibility is to provide graduate programs in modern areas of engineering that lead to the Master of Science and Doctor of Philosophy degrees. Graduate education involves intensive study in selected areas of a creative nature which are expected to result in original contributions to the literature at the Ph.D. level.

Programs Offered

The College of Engineering offers programs leading to the Bachelor of Science in Engineering (B.S.E.) degree in the major fields of biomedical engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, and mechanical engineering, as well as a program leading to the B.S.E. degree without designation of a major. 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.

Any of the undergraduate programs offered by the College of Engineering may be combined with a program leading to a bachelor's degree in the College of Liberal Arts and a bachelor's degree in the College of Engineering. The combined degree program may be normally completed in about five years. In addition, a minor in the College of Business Administration or a minor in any degree-granting department or approved program in the College of Liberal Arts may be combined with any of the undergraduate programs offered by the College of Engineering.

The undergraduate programs in 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 (AAES)—formerly the Engineers' Council for Professional Development (ECPD).

Undergraduate Programs

Degree Requirements

The Bachelor of Science in Engineering (B.S.E.) degree requires a minimum of 128 semester hours of credit including satisfaction of the specific requirements of the major program as described in the following sections. The candidate for the B.S.E. 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, or a total of 90 semester hours and must have a minimum grade-point average of 2.00 on all college work used to satisfy the degree requirement as well as on all work undertaken at The University of Iowa. In addition, the candidate must have completed the following engineering Calculus I and Calculus II, or their equivalents, with a grade of C, or better, in each course.

Admission Requirements

To qualify for admission to the College of Engineering, an applicant must have:

Completed the American College Tests 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-half unit of trigonometry; and

Ranks 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 from the college or university attended at least two years. Each applicant should have:

Completed at least one semester of calculus or its equivalent; and
Maintained a cumulative third-point average of at least 2.25, based on a 4-point marking system.

A maximum of 64 semester hours credit (or the equivalent) from a community or junior college will be accepted toward a baccalaureate degree.

Eligibility for admission does not ensure admittance to the College of Engineering. From the applicants, the College of Engineering selects those who appear to be best qualified for the study and practice of engineering.

Undergraduate Curriculum

The undergraduate curriculum programs in engineering are designed to ensure an adequate foundation in mathematics, basic and engineering sciences, the humanities and the social sciences, and engineering design. Added to this base is preparation in an engineering specialty appropriate to the challenge presented by today's complex and difficult technological problems. The overall objective of the curriculum programs is to provide an integrated educational experience and to develop the ability to apply pertinent knowledge, theory, and solution of practical problems in each of the designated areas of engineering specialization. The specific objectives of the curriculum is to prepare students for the practice of engineering.

"The curriculum is structured into four parallel stems extending through the entire four years of undergraduate study. The three areas are basic and engineering sciences, humanities and social sciences, and engineering analysis and design. The mathematics, basic and engineering sciences courses provide a background for engineering. 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 stem. The courses sequence in this stem begins with 506:1 Introduction to Engineering in the first semester of the freshman year and terminates with senior-level design courses during the senior year. Approximately one-half of the courses in the basic and engineering sciences 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 scheduled 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 when eligible, or not declare a major during this period, with only minor adjustments in scheduling. This gives students 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 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 the 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 and are ordinarily taken at the senior level.

The curriculum for the freshman year is:

First Semester
4-13 Principles of Chemistry I 3 a.h.
10:1 Rheologic 4 a.h.
10:5 Rheologic 4 a.h.
23M:36 Engineering Calculus I 4 a.h.
650:4 Engineering Graphics 3 a.h.
Total 15 a.h.

Second Semester
4-18 Principles of Chemistry Lab I 2 a.h.
10:2 Rheologic 4 a.h.
410:12 Principles of Biology 4 a.h.
23M:36 Engineering Calculus II 4 a.h.
650:5 Engineering Computations 3 a.h.
650:7 Statics 3 a.h.
Total 15 a.h.

A maximum of four semester hours is allocated for satisfaction of the rhetoric requirement. Students who qualify for 10:3 are able to satisfy the requirement with this single course, while those required to complete the eight-semester-hour sequence of 10:1-2 may apply only four semester hours toward their engineering program. The courses listed above are required of all students in engineering; 414 Principles of Chemistry II is recommended during the second semester for students who are biomedical or chemical engineering majors. Biological engineering majors should register for 505:15 Materials Science I in place of the humanities or social science elective listed for the second semester.

Humanities and Social Sciences Requirements

The goal of the humanities and social sciences stem is to provide more effective preparation for professional responsibilities by integrating the 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 16 semester hours of humanities and social science electives, which is to include at least six semester hours of courses work in the humanities and at least 10 semester hours in the social sciences. Because the social science coursework is a curricular stem in industrial engineering w specified and are not open for the same selection process, students considering a major in this program should consult the Industrial and management engineering program requirements presented later.

The humanities electives may be selected from those courses approved to satisfy the humanities, historical perspectives, and the foreign civilization and culture requirements of the College of Liberal Arts (general education requirements and/or appropriate courses from any of the following departments and schools: American studies; art and art history; classics; Asian languages and literatures; communication and theatre arts; English; history; literature, science, and the arts; music; speech, language, and linguistics; or other departments approved by the College of Engineering faculty. Students may select courses from departments not开设与 the approval of assistant to the dean. Students shall select a minimum of three semester hours of advanced (100-level) course work in the humanities area to secure sufficient depth of knowledge in an elected subject of study. This advanced coursework must be completed in the first second-year level. Studio courses in art and music will not fulfill the requirement. The social science electives may be selected from those courses approved to satisfy the social sciences requirement of the College of Liberal Arts general education requirements and/or appropriate course from the following departments: anthropology, economics, geography, political science, psychology, sociology, and mass communication. Social work, or other departments approved by the College of Engineering faculty. Students may select courses from departments not开设 with the approval of assistant to the dean. To assure an adequate depth of knowledge in a chosen area of study, students shall
select a minimum of three semester hours of advanced (100-level) courses. This must build on the background previously acquired in an elementary course.

Combined College of Engineering-College of Liberal Arts Program

Students may earn two University of Illinois baccalaureate degrees in a combined curriculum program in the colleges of Engineering and Liberal Arts. To enter this program, a student must be eligible for admission to the College of Engineering but may begin the program in either the College of Liberal Arts or the College of Engineering. Students who enter this program will be advised by the assistant to the dean of the College of Engineering and by an associate dean of the College of Liberal Arts. Students interested in the combined degree program should declare their interest by contacting a representative of the Dean's Office in either the College of Engineering or the College of Liberal Arts. A plan of study must be developed and approved by the advisor from both colleges. It is critical to enroll in the proper mathematics and engineering courses early in the program to minimize the time required to complete the combined degree program. The student in the combined program can normally meet the baccalaureate degree requirements of both colleges in about five academic years. However, the exact length of time to complete the combined degree program will be determined by the major areas of study selected in liberal arts and engineering.

Students selecting this program will be required to complete the general education requirements and the residency requirement in the College of Liberal Arts. The specific engineering courses taken by the student will vary, according to the engineering specialty selected. Since the courses in science, mathematics, and the socio-humanities are required by both colleges, the student is, in many cases, satisfying the requirements for two colleges in the taking of a particular course.

Two Bachelor's Degrees in the College of Engineering

Recent College of Engineering graduates and current students may earn two bachelor degrees in engineering. The requirements for the second degree are: a minimum of 30 additional credit hours of residence courses beyond the requirements of 128 semester hours for the first degree program, with a grade point average of 2.00. The additional credit hours must include courses chosen by the program selected for the second degree, including the senior level design course sequence of the second degree program as well as any specific socio-humanities elective requirements. The technical electives selected for the second degree program must be such a variety and level that the student will meet at least a 120-credit level of competency normally expected of graduates of that program. A student must file an application for admission to the second degree program approved by the faculty of that program and submitted to the Office of the Dean prior to the time the student initiates the coursework in the second degree program. The proposed academic plan should be submitted to the chair of the second program. The plan will include a list of the courses to be taken in the second program along with a list of the courses completed and to be completed for the first engineering degree program. The approved plan will be submitted to the Office of the Dean before the student begins coursework in the second program and will be placed in the student's permanent file. Any changes in the plan must be approved by the student's faculty advisor in the second program and by the program chair (the current petition form may be used for this purpose) and submitted to the Office of the Dean for inclusion in the student's permanent file.

Minor

Students graduating from the College of Engineering may earn a minor in the College of Liberal Arts. The minor may be earned in the form of a minor program in the College of Liberal Arts. Students interested in a chemistry, physics or mathematics minor may earn courses required in the engineering curriculum to satisfy the minor requirements in these three areas. A notation of the minor will be entered on the student's permanent record. Students must inform the Registrar's Office of their intent to earn a minor prior to the time of applying for graduation. A minor designation is included on the graduate's transcript.

Minor in the College of Business Administration

Requirements for the minor are: two economics courses, two accounting courses, a marketing course, a management course, a finance course, and a legal environment course. In addition to these required courses, a student normally would also complete a statistics course, a computer course, and a probability and statistics course. Engineering majors satisfy the mathematics, statistics, and computer science requirements with courses 22M:35, 580:4, and 580:39. A 2.25 grade-point average in the courses applicable to the minor is required. Students who wish to complete a Master of Business Administration degree later should select courses which will satisfy M.B.A. requirements.

Minor in the College of Liberal Arts

Requirements for a minor are: a minimum of 12 semester hours in a liberal arts department, at least 12 of which are in advanced courses acceptable to that academic unit (students should confer with the minor department to identify acceptable courses). The student must achieve a 2.00 grade-point average in the courses applicable to the minor. Courses to be counted toward the minor may not be taken on a pass-fail basis. Students interested in physics, chemistry or a mathematics minor may not use courses required in the engineering curriculum to satisfy the minor requirements in these three areas.

Cooperative Education Program

Cooperative education involves the integration of academic work with practical experience in an organized program. Participating students spend alternate periods in full-time academic study on campus and in full-time engineering-related employment in business, industry, or government. While the student can earn a substantial portion of college expenses during the work periods, the success of the program depends on the work experience having significant educational value as well. This is assured by careful monitoring of the work experience provided by participating employers and by matching student interest and ability to the work situation.

The insight gained by involvement in the practical application of subject matter studied in the classroom usually results in improved motivation during the study periods and an increased awareness of educational needs involved in any engineering project. The co-op phase ordinarily begins during or immediately following the sophomore year and continues until the beginning of the senior year. The total time for the degree program under this option is normally five years and includes the equivalent of at least one full year of work experience. The program is an option available to qualified students on a space available basis.

University Undergraduate Academic Advising Center

The Undergraduate Academic Advising Center fits those who have not selected a program of study. Included in this group are students who may be
considering engineering, among other fields of study, but who are not yet ready to declare a specialization major. For help in choosing a program, students are assigned an adviser from the center rather than from a specific department. Students may change frequently and regularly with their assigned adviser for help with various academic matters. These may range from building a schedule of courses for the next semester to receiving counseling on choosing a career. For the convenience of students, the offices of the advisers are located in the residence halls. For more information, contact the Director, Undergraduate Academic Advising Center, Sieve Hall, The University of Iowa.

Academic Standards

Semester Load Limit
A normal academic load is about 18 semester hours of coursework for a semester, 9 for a summer session. A student may register for more than 18 semester hours in one 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—fewer than 28 semester hours | Sophomore—28 to 55 semester hours | Junior—56 to 89 semester hours | Senior—90 or more semester hours |

Grading System

The college uses the four-point grading system, in which grade points are awarded for each semester hour, as shown in Table A-4. For a full description see the "General Information" section of the Catalog.

Academic Probation and Good Standing

A student enrolled in the College of Engineering who fails to attain the following minimum semester and cumulative grade-point averages based on all work taken at The University of Iowa shall be placed or continued on academic probation:

| Freshman—1.70 | Sophomore—1.80 | Junior—1.85 | Senior—1.90 |

A student whose semester and cumulative grade-point averages equal or fall below these levels, or whose classification is considered to be in good standing, may be removed from, or placed on, academic probation only at the end of a semester. A student will not be permitted to reregister without specific approval from an academic dean unless he has completed two consecutive semesters on probation. A student who has not made satisfactory improvement in scholarship may be dismissed from the college. A student dismissed from the college for poor scholarship may petition the assistant to the dean for permission to re-enroll after an interval of two regular semesters.

Cancellation of Registration

A student in good academic standing who cancels his or her registration during the final four weeks of a regular semester, or during the final three or two weeks of a twelve- or eight-week summer session, respectively, will not be permitted to enroll for the semester immediately following without specific approval from the assistant to the dean. A student on academic probation who cancels his or her registration at any time without good cases will be considered as having been dismissed for poor scholarship.

Cancellation cards for students enrolled in the college will be signed by the assistant to the dean only after recommendation of the student's adviser and program chair.

Credit by Examination

Students who have acquired knowledge in subject matter areas from sources other than course attendance may be granted the opportunity to obtain credit toward graduation by examination. Conditions and limitations of this policy are established by the faculty of the College of Engineering. A student wishing to exercise this opportunity should apply to the assistant to the dean.

Advanced Placement

Under the Advanced Placement Program of the College Entrance Examination Board, a high school graduate may take comprehensive achievement examinations in college credit and advanced placement of students who achieve satisfactory standards in these examinations. For information, write to the College Entrance Examination Board, 801 Seventh Avenue, New York, N.Y. 10019.

Pass-Nonpass Option

A maximum of two courses taken in the college of Liberal Arts or Business Administration on a pass-nonpass basis may be applied toward satisfaction of the humanities and social sciences requirement. Students wishing to take such courses in liberal arts or business administration on a pass-nonpass basis must meet the conditions and follow the procedures specified by those colleges. The pass-nonpass option may not be used for courses taken to satisfy the rhetoric requirement.

Students enrolled in courses taught in the College of Engineering may choose to be graded on a pass-nonpass basis under the following conditions:

The signatures of the adviser and instructor must be obtained on the proper form and the completed form submitted to the registrar by the student within the time limit established by university policy;

The mark of P (pass) will be awarded where the final course grade earned was C+, B, or C. The mark of N (nonpass) will be given for grades of D or F. Marks of P and N will not be used in computing the grade-point average and the mark of N will not count as earned hours;

No course work taken in the College of Engineering under a pass-nonpass option may be used to satisfy requirements for an engineering degree.

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 prereq., the option may be applied to no more than three courses and it may be applied only once to a given course. Transfer students may apply the option on a pro-rated basis. For example, a student with 42 semester hours of applicable engineering course work may use this option for a maximum of three courses, while a student with 42 and 89 semester hours of credit may use this option for no more than two courses, and a student with 42 and 66 semester hours of transfer credit may use this option for only one course. Students wishing to exercise this option should apply to the assistant to the dean.

Satisfactory-Fail Courses

The noncredit professional seminar courses, which are required in each of the professional programs, as well as the noncredit graduate seminar classes with course number 550-191 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 mark of I (incomplete) or O (no report) which is extended upon by a final grade prior to the announced deadline within the final four weeks of regular semester of registration will be replaced by a final grade prior to the final (fall), except that students with incompletes from the spring semester are exempt from
competing the course during the succeeding summer season.

Recognition for Academic Achievement

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

To be eligible for this form of recognition, the student must have his or her final semester hours of study in residence for the college, and must have completed at least 45 semester hours of study in the college before his or her final registration. Students in the combined engineering- liberal arts program are eligible for this recognition regardless of the college in which they complete their residency requirements.

Dean's List

Engineering students achieving grade-point averages of 3.5 or above during a given semester on 12 or more hours of graded work with no 'F' or 'D' still 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 leadership in planning and carrying out activities involving the entire student body. Faculty sponsors and faculty students each hold a spring and spring, the homecoming important event. MECCA Week, and sponsoring of a nationally prominent speaker during National Engineers' Week. The organization also acts on college-wide activities. Engineering students publish their own magazine, "The Engineering Student." 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 Civil Engineers, the American Society of Electrical 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 are research are eligible for election to Sigma Xi, Phi Lambda Upsilon, honorary chemistry and chemical engineering society; Chi Epsilon, honorary civil engineering society; Alpha Pi Mu, honorary industrial engineering society, and Pi Tau Sigma, honorary mechanical engineering society, recognize the work of outstanding students in their respective fields.

Student organizations dedicated to providing support and assistance in the development of more suitable enrollments of women and minorities in the college are the Black Students in Engineering and the student chapter of the Society of Women Engineers. A local chapter of the Theta Tau, a national professional engineering fraternity, is active in 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 include graduate 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 procedure is the Iowa Board of Engineering Examiners. The first step in the procedure for students enrolled in an accredited engineering program is the written examination on engineering fundamentals given at the university near the end of the first year. (Graduates of unaccredited programs must complete at least one year of professional experience to be eligible to take the engineering fundamentals exam.) Followed graduation and the successful completion of the engineering fundamentals exam, the graduate receives an Engineer-in-Training (E.I.T.) certificate. The next step in the process is to pass the advanced exam in a specialty followed by a minimum of four years of approved professional experience. At this point the graduate engineer is eligible for registration "Professional Engineer."

Graduate Programs

The general rules and regulations for the graduate programs are established by the Graduate College. However, the specific admissions and degree requirements for each graduate engineering program are indicated in the sections devoted to the individual programs. Also included in these 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

Engineering Library

The Engineering Library is a center of college activity. Its collection includes 50,000 books and 300 periodicals, is equipped with microfilm and microfiche readers, and provides study spaces for 150 library users.

Computer Aided Engineering Instructional Laboratory

This college facility is used for teaching computer-aided engineering. The laboratory contains interactive computer graphics terminals connected to a superminicomputer, graphics printers, terminals, digital tablets, a line graser and a protection system. It also contains several stand-alone microcomputers which are connected to a microcomputer to transfer data from one system to another. Information is given in computer-aided graphics and design at both the undergraduate and graduate level. Software is available for graphics applications, optimal design, finite element analysis, structural analysis and design, and dynamic analysis of mechanical and structural systems.

Computer Based Education (CBE) Laboratory

The Computer Based Education Laboratory provides computing and batch computing capabilities with the University's IBM 360, IBM 1130, Prime 750, and HP-2000 computer systems via video display and hardcopy terminals. The laboratory also contains the printing unit for students and faculty for printed output as well as video equipment for instructional demonstrations.

Computer Services

Services of the Weing Computing Center are used extensively by students and faculty of the college under the auspices of the college computer center. The computer center contains terminals and remote printers for access to the University's computer systems in the CBE Laboratory. In addition, a number of small microcomputers are available within the college for specialized use by students

Employment Placement Services

The placement services of the engineering college are available to both current students and to alumni. The services include on-campus interviews for full-time and co-op employment, written and audio-visual company literature for more than 300 business, directories, open positions
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 practices and by the increasing complexities of technology. The college has responded to these demands by departing from the traditional pattern of organizational structure of engineering colleges. It has organized its faculty and facilities into different types of collegiate sub-units—academic programs, divisions, as institute, and two centers.

Academic Programs

The academic program units are the degree-granting units, while the divisions are the administrative units that allocate the resources of the college. Each faculty member is a member of at least one academic program, but only one division.

The academic program units are biomedical engineering, chemical and materials engineering, civil engineering, environmental engineering, electrical and computer engineering, engineering management, and mechanical engineering. The faculty in each program unit are responsible for the curricula at all degree levels offered by the program. In addition, the faculty teach courses, advise, and counsel students, and provide general support services for the students in each of the program units. The chief administrative officer of a program is the program chair.

Divisions

The divisions are identified as energy engineering, information engineering, materials engineering, and systems engineering. These units are the basic operating units of the college and consist of faculty and facilities organized according to broad functional areas of modern engineering endeavor. Each division is responsible for the development and operation of all laboratories at all levels of activity and for all purposes; for the content, teaching, and scheduling of all academic courses; and for the conduct of all research programs. The chief administrative officer of a division is the division chair.

This grouping of resources combined with strong formal curricular programs provides for the student a clear insight of the interdisciplinary nature of modern engineering while he or she is engaged in formal academic studies. Additionally, this functional arrangement broadens the educational scope of the college and encourages interdisciplinary and innovative programs.

Iowa Institute of Hydraulic Research

The Iowa Institute of Hydraulic Research (IIHR) is widely acknowledged to be one of the world's leading organizations in the areas of basic and applied fluids research. The institute conducts programs of fundamental research and advanced design and analysis in the areas of environmental pollution, bioengineering, naval hydrodynamics, river mechanics, ice hydraulics, hydrology, water resources, hydraulic structures, fluid mechanics, and advanced instrumentation and data handling techniques for fluids research.

Direct 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 was founded on the philosophy that technologies of the future require the integration of a variety of disciplines in order to transcend traditional methods of research and development.

The center is at present strongly focused on programs of fundamental and applied research in biomedical engineering with particular emphasis on biomaterials. Sponsored projects include: traumatic head and spinal injuries, hemodynamics, cardiac mechanics, prosthetic heart valves, bone and ligament biomechanics, bone cement, and biomedical image analysis and processing.

Student participation in interdisciplinary research and development is encouraged and supported by the center. The faculty members of the center also engage in a number of research activities for industry, government, and other universities.

Center for Computer Aided Design

The Center for Computer Aided Design was founded for the purpose of enhancing research and development of design methods utilizing modern computer technology.

The research program of the center is focused on mechanical system dynamic analysis and design, control system analysis, structural optimization and dynamic computer graphics. A research facility consisting of a PRIME 750 super minicomputer, a dynamic graphics system, and other related computer support equipment supports the faculty, staff, and students associated with the center.

Faculty, staff, and students participating in the center are developing and distributing computer software to government and industrial agencies for use in a broad spectrum of mechanical and structural design activities.

Course Numbering System

The nite of each course offered by the College of Engineering is preceded by a 2-digit prefix and a 3-digit suffix separated by a colon.

The first digit of the prefix is 0, 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:

- 0: Energy engineering
- 4: Information engineering
- 6: Materials engineering
- 8: Systems engineering

The third digit of the prefix identifies the engineering core courses or the course offered by the division for a specific curricular program, with the correspondence between the third digit and the curricular 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
- 6: Industrial and management engineering
- 7: Division specialty programs
- 8: Other programs

The three-digit suffix of a course number identifies the level and type of course. Generally, the suffix numbers below 100 designate courses primarily for undergraduates; numbers 100 to 199 designate courses for undergraduates and graduates; and numbers 300 and above designate courses primarily for graduates. The table below provides further means of conveying information on the level and type of courses:

- 001-099: Freshman core courses
- 100-199: Sophomore core courses
- 200-299: Junior core courses
- 300-399: Required courses in undergraduate programs
- 400-499: Undergraduate professional program seminars
- 085-097: Contemporary topics courses for undergraduates
- 088-099: Investigation courses
for undergraduates
101-106—Courses to which little or no engineering major, or mathematics background is required
110-119—Undergraduate elective or lower-division graduate course
190—Residence courses for non-engineering majors
191-194—Seminars for undergraduates and graduates
195-199—Courses for undergraduate and graduate students
198—Individual investigations for graduates
199—M.S. thesis research
201-206—Upper-level graduate courses
209-204—Seminars for graduates
246-247—Contemporary topics courses for graduates
290—Ph.D. thesis research

The courses offered by each division are listed within each division's section by disciplinary area, starting with the lowest level course and proceeding to the highest level course.

Most courses have prerequisites stated in terms of courses at this university. Equivalent academic background may have been obtained by a student through previous course work at other colleges and universities. The student should consult with the course instructor or the academic advising office concerning the academic background needed for a particular course, and the student should obtain the consent of the instructor to register in the course. A student may enroll in any course in the College of Engineering if the student receives the consent of the instructor. Consent of the instructor will be based on space availability, as well as on the student's performance in the mathematics, science, and engineering prerequisites background of the student and consideration necessary to satisfactorily undertake the course work.

### Biomedical Engineering

Program chair: Hsin-Nan Yeh

Faculty: professors Clyde M. Berry, Diping C. Chen, Hsin-Nan Yeh, John G. Messinger, Donald D. Weismer, Ken Yeh, associate professors Roy Fiore, Lawrence K. Hackett, Don Schueller, David L. Tussler, William Way, and William Zangari.

The past two decades have seen a remarkable increase in biomedical engineering activity in biology and medicine. As engineering activity has become increasingly involved with projects in the life and health sciences, there has been 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 designed to bridge the gap between the life sciences and engineering—"the biomedical engineering profession. The undergraduate biomedical engineering program is a curricular option offered within the Bachelor of Science program in engineering.

Students who complete this program may pursue career opportunities in industry (the design and development of biomedical instrumentation, diagnostic and life support systems, prosthesis and orthotic devices, man-machine systems, etc.), in government (Veterans Administration, Environmental Protection Agency, Food and Drug Administration, etc.), or they may elect to continue 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 with college faculty members 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 'B' in the third position of the course prefix. Course descriptions are provided in this Catalogue, with the section devoted to the Division of Information and Materials Engineering. The curriculum described below is based 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 requirements of the Graduate College and the colleges of Medicine, Dentistry, etc.

### Curriculum

#### Sophomore Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>201-204</td>
<td>Introduction to Electrical Systems</td>
<td>4.0 s.h.</td>
</tr>
<tr>
<td>205-206</td>
<td>Dynamics</td>
<td>3.0 s.h.</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

#### Junior Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>201-204</td>
<td>Biomechanics</td>
<td>4.0 s.h.</td>
</tr>
<tr>
<td>205-206</td>
<td>Linear Systems Analysis</td>
<td>4.0 s.h.</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>201-204</td>
<td>Thermodynamics</td>
<td>4.0 s.h.</td>
</tr>
<tr>
<td>205-206</td>
<td>Clinical Systems Analysis</td>
<td>4.0 s.h.</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>
Chemical and Materials Engineering

Prerequisite: San-Tak Hsung

Chemical and materials engineering is the art and science of engineering applied to industrial processes in which raw materials are changed or separated into useful products. Chemical and materials engineers develop, design, 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, development, and product design, chemical 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 5 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.

Undergraduate Program

The Bachelor of Science in Engineering degree is designed for the prospective student for work in design, speciation, 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

4 s.h.

225.37 Engineering Calculus III

560.10 Materials Science I

4 s.h.

540.11 Introduction to Electrical Science

3 s.h.

560.10 Materials Science I

3 s.h.

Humans or social science elective

3 s.h.

Total

16 s.h.

Second Semester

225.38 Differential Equations for Engineers

540.12 Linear Systems Analysis

520.80 Mechanics of Fluids and Transfer Processes

562-42 Process Calculations

28.81 Intermediate Engineering Physics I

17 s.h.

Junior Year

First Semester

4-131 Physical Chemistry I

28.82 Intermediate Engineering Physics II

560.31 Principles of Design I

562-43 Design for Energy and Motion Transfer

540-18 Principles of Electronic Instrumentation

562-31 Professional Seminar

18 s.h.

Second Semester

4-133 Physical Chemistry II

4-143 Advanced Chemistry Laboratory I

562-41 Chemical Engineering Thermodynamics

562-44 Mass Transfer Operations

562-91 Professional Seminar

18 s.h.

Senior Year

First Semester

4-121 Organic Chemistry I

562-45 Chemical Reaction Kinetics

562-48 Economics in Design

562-47 Unit Operations Lab I

14 s.h.

Humans or social science elective

562-91 Professional Seminar

Total

Second Semester

4-122 Organic Chemistry II

4-141 Intermediate Chemistry Laboratory I

562-48 Unit Operations Lab II

562-48 Chemical Engineering Process Design

18 s.h.

Humans and social science elective

562-91 Professional Seminar

Total

17 s.h.

Graduate Program

The Chemical and Materials Engineering Program offers curricula leading to the Master or Doctor of Philosophy degrees. Through coursework and research, students gain an understanding of the principles of engineering science and then apply these principles to contemporary problems of such energy, environment, and materials. The emphasis is on research since most of the opportunities for graduates are in industry. The growth and development of the chemical and materials program is devoted to a research project, a thesis, and a committee comprised of selected faculty members. All candidates enrolled in advanced degree programs are required to assist faculty members in teaching or research as part of the graduate training. Research is currently being carried out in air pollution, chemical kinetics, diffusion, fluid flow through porous media, membrane separations, fine particles, reaction kinetics, and transport phenomena. Many research projects are funded by external agencies such as the National Science Foundation, NASA, and private industries. Some funded projects are described briefly below.

Air Pollution

The study of transport phenomena of atmospheric pollutants including the analysis and numerical modeling of chemically reactive fluids and chemical and thermal reaction of the atmosphere and air pollutants. Emission and removal of trace gases and their behavior.

Fine Particles

A problem of interest to both students and graduate students is engaged in research on materials in finely divided form such as dust, powders, and aerosols. The degree of the group is to describe mathematical models and compare and then to relate these to the physical processes and then to the behavior. Potential applications include atmospheric pollution phenomena, chemical reactions, and chemical and thermal reaction of the atmosphere and air pollutants. Emission and removal of trace gases and their behavior.

Flow through Porous Media

Knudsen flow and surface diffusion through various microporous media are being studied. Practical applications are gas separation, catalysis, and solar radiation. Currently a solar energy application is being investigated.

Reaction Kinetics and Catalysis

Hybrid multiphase catalysts are being investigated which combine the advantages of both homogeneous and heterogeneous catalysts. Other topics of current interest include fluid-solid
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 processes. A number of industrial gases as well as natural gas can be purified by these processes. These membrane processes can also be applied to separations of liquid mixtures such as alcohol and water.

Mechanical Behavior of Cast Steel

Quantitative, optical, and scanning electron micrograph and metallographic analysis 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, etc.

Master of Science

A thesis and a minimum of 30 semester hours of graduate credit are required, including at least 24 semester hours com substitutions in residence at the University of Iowa. Work completed in Saturday sections as residence credit may not exceed eight semester hours. However, six semester hours may be completed in residence at another recognized graduate college or by correspondence study at The University of Iowa. The minimum course work requirement is 24 semester hours (about eight courses), and the remainder of the 30 semester hours must be approved to research. To be eligible for the M.S. degree, the student is expected to maintain a minimum grade-point average of 3.0 in the graduate courses; he or she must also maintain a minimum grade-point average of 3.0 in the graduate courses. The thesis or the comprehensive examination must be a satisfactory grade of at least B+. The thesis is required for all students, and the comprehensive examination is required for students in the Industrial and Materials Engineering program. A grade-point average of at least 2.5 is required for condition admission. All applicants should take the verbal, quantitative, and advanced parts of the Graduate Record Examination (GRE) and the General Test, and scores of this test should be submitted with the application. Graduate courses in chemical and materials engineering are designed for the student with a strong undergraduate background in chemical engineering or the materials sciences including meturgy. However, exceptional students from other areas may apply for admission to the M.S. or even the Ph.D. program in chemical and materials engineering. Such a student needs to take certain undergraduate courses as background to allow him or her to perform in the graduate courses with a minimum difficulty. Since these undergraduate courses are in the nature of a make-up course, they must not carry credit toward a graduate degree.

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 or she 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 doctoral students are required to pass a written and 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 supervised. The rules for the comprehensive examination may be found in the bulletin of the Graduate College. There is no foreign language requirement. A final examination, which is a defense of the thesis, completes the doctoral program.

Graduate Admission Requirements

Graduate study is open to students having a B.S. degree in chemical engineering with satisfactory grades from a recognized American college or university. Graduates from foreign universities are also accepted, depending on an evaluation of their records. For the M.S. program, a grade-point average of at least 2.5 based on a maximum of 4.0 is required; for the Ph.D. program, the minimum grade-point average is 3.2 based on completed graduate work. Conditional admission may be granted if the above requirements are not fulfilled and approval is obtained from the chair of the chemical and materials engineering program. A grade-point average of at least 2.5 is required for conditional admission. Also, applicants should take the verbal, quantitative, and advanced parts of the Graduate Record Examination (GRE) and the General Test, and scores of this test should be submitted with the application. Graduate courses in chemical and materials engineering are designed for the student with a strong undergraduate background in chemical engineering or the materials sciences including metalurgy. However, exceptional students from other areas may apply for admission to the M.S. or even the Ph.D. program in chemical and materials engineering. Such a student needs to take certain undergraduate courses as background to allow him or her to perform in the graduate courses with a minimum difficulty. Since these undergraduate courses are in the nature of a make-up course, they must not carry credit toward a graduate degree.

Financial Aid

A number of fellowships, assistantships, and scholarships are available to graduate students who qualify. These are awarded on a competitive basis.

Civil and Environmental Engineering

Program chair: Charles Karasek

The Civil and Environmental Engineering program is the oldest and one of the three largest fields of engineering. It traditionally has been concerned with facilities which are both large-scale and vast, such as bridges, highways, public transit systems, railways, harbors, airports, seaports, and even spaceports; large-scale structures and office buildings to provide enclosed working and living space; and environmental systems to provide clean water and air, including filtration plants and distribution systems for municipal and industrial waste treatment plants, dams, levees, and irrigation systems.

In fact, if something is one of a kind, large, and important in the daily lives of a great many people, the chances are it was planned, designed, and constructed by civil engineers.

The continuing need for these and associated modern life facilities is an ever-present demand for civil engineers through both government and private work, and the variety of tasks that the individual civil engineer is called on to perform, as well as ensure his or her career feasibility and the capacity to match the shifting demands.

In planning and design, the civil and environmental engineers work with architects, landscape architects, planners, economists, financiers, sociologists, buyers, and other specialists as members of the design team. They are also engaged in the development of the projects they have designed. These field assignments, many of which are in remote and fascinating parts of the world, are particularly appealing to many civil engineers.

Courses designed primarily for the civil and environmental engineering program are identified by the digit 3 in the third position of the course number prefix. Course descriptions are provided in the catalog within the sections devoted to the divisions of Energy, Materials, and Systems Engineering. Undergraduate
and graduate handbooks describing program policies and requirements in detail are available upon request.

Undergraduate Program
Civil engineering courses build on the College of Engineering core curriculum and are designed to give the student a broad educational background essential to modern civil engineering practice. Courses in the senior year permit greater breadth or additional concentration in such areas as specialization as structural and foundation engineering, environmental engineering, hydraulic engineering, and transportation engineering.

Curriculum
Sophomore Year
First Semester
22M:37 Engineering Calculus III 4.5 s.h.
590:10 Dynamics 3.5 s.h.
540:11 Introduction to Electrical Science 3 s.h.
560:15 Materials Science I 3.5 s.h.
520:16 Thermodynamics I 4 s.h.
Total 17 s.h.
Second Semester
22M:38 Differential Equations for Engineers 4 s.h.
540:12 Linear Systems Analysis 3.5 s.h.
560:19 Mechanics of Deformable Bodies 3 s.h.
520:20 Mechanics of Fluids and Transfer Processes 4 s.h.
29:81 Intermediate Engineering Physics I 3 s.h.
Total 17 s.h.
Junior Year
First Semester
29:82 Intermediate Engineering Physics II 3 s.h.
590:21 Principles of Design I 3 s.h.
560:20 Probabilities and Statistics for Engineering and Physical Sciences 3.5 s.h.
563:31 Structural Analysis I 4 s.h.
563:58 Soil Mechanics 3 s.h.
563:91 Professional Seminar 0.5 s.h.
Total 18 s.h.
Second Semester
540:16 Principles of Electronic Instrumentation 4 s.h.
563:22 Principles of Design II 5 s.h.
563:35 Design of Steel Structures 2.5 s.h.
523:80 Principles of Hydraulics 4 s.h.
563:88 Elements of Surveying 1 s.h.
563:91 Professional Seminar 0.5 s.h.
Humanities and social science elective 3 s.h.
Total 18 s.h.

Senior Year
First Semester
563:38 Reinforced Concrete Structures 3 s.h.
562:73 Transportation Engineering 3 s.h.
523:54 Hydrologic Design 3 s.h.
563:31 Professional Seminar 0 s.h.
563:100 Principles of Environmental Engineering 3 s.h.
Humanities and social science elective 3 s.h.
Total 18 s.h.
Second Semester
563:74 Transportation Systems Design 3 s.h.
563:91 Professional Seminar 0 s.h.
Technical electives 6 s.h.
Humanities and social science electives 6 s.h.
Total 18 s.h.

The humanities and social sciences requirements include three courses in the College of Engineering.

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 34 full-time faculty members of the institute and professors in other departments also have active research programs and devote 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 use of digital computers in mathematical modeling and in the acquisition and presentation of data. The water resources curriculum also has ties to the Institute of Economic Research, the Institute of Urban and Regional Research, and the college 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 streams, one engineering and the other applied sciences. 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 Ag-Cultural Medicine and Environmental Health, the Institute of Urban and Regional Planning, and the colleges of business, law, and Liberal Arts. Course work and research permit a general program of study or specialization in one of these areas: water quality management, air quality management, waste management, environmental engineering, and science courses are described in the "Division of Energy Engineering" section of the Catalog.

Structures, Mechanics and Materials
The structures, 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, computer-aided design, soil behavior, and constitutive equations for metals and geotechnical materials. Course work and research in structural analysis, structural design, soil mechanics and foundations, and design, and mechanics of 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.

Facilities
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 courses are offered in advanced technical problems in industry, consulting firms, or government, or they may continue their graduate study. Current and proposed demand for M.S. graduates is uncertain.

In general, the claim of study, with or without thesis, must include a minimum of 30 credit hours, 15 of which must be in graduate credit, with not more than 6 semester hours of credit awarded for the thesis. An additional 6s.
Electrical and Computer Engineering

Admission

Each curriculum in the program is quite flexible, and students may be admitted from all disciplines of engineering as well as from the mathematical and basic sciences.

An applicant for the master's degree program is expected to have a cumulative undergraduate grade point average of at least 2.5, usually 3.0 is preferred. For admission to candidacy for the doctorate, the minimum grade point average is 3.2 based upon previous graduate study. All applicants whose grade point average are slightly lower must justify their candidacy 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 assistantships are available on a variety of research projects, as are a limited number of teaching assistantships and fellowships. Selection of recipients is usually based on scholastic achievement and research interest.

Electrical and Computer Engineering

The doctoral degree is granted primarily on the basis of achievement, rather than on a prescribed course of study. Requirements to as semester hours of course work 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 knowledge in the field. In some specialty areas, a qualifying examination is required during the second semester for students who have not earned a 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. This examination is normally taken when substantiality all of the student's course work has been completed.

The program culminates in a final examination, which is weighted to indicate decisively whether he or her examination.

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 (see the "Division of Mathematical Sciences" section in "Liberal Arts").

Curriculum

Sophomore Year

First Semester

552:10 Dynamics 3 a.h.
529:37 Engineering Calculus III 4 a.h.
530:16 Thermodynamics I 4 a.h.
560:15 Materials Science I 3 a.h.
540:11 Introduction to Electrical Science 3 a.h.
Total 17 h.

Second Semester

26:81 Intermediate Engineering Physics I 3 a.h.
223:36 Differential Equations for Engineers 4 a.h.
540:12 Linear Systems Analysis 3 a.h.
540:18 Principles of Electronic Instrumentation 4 a.h.
540:31 Introduction to Computers in Electrical Engineering 3 a.h.
Total 17 h.

Junior Year

First Semester

26:82 Intermediate Engineering Physics II 3 a.h.
530:38 Material and Statistica for Engineering and Physical Science 3 a.h.
540:32 Introduction to Digital Design 3 a.h.
540:40 Electronic Circuits 3 a.h.
540:80 Control Systems 3 a.h.
*540:91 Professional Seminar 0 a.h.
Total 15 h.

Second Semester

24:89 Modern Physics 3 a.h.
540:33 Introduction to Software Design 3 a.h.
540:60 Communication Systems 3 a.h.
540:72 Electromagnetic Theory 3 a.h.
540:84 Principles of Electrical Engineering Design I 3 a.h.
*540:91 Professional Seminar 0 a.h.
Humanities or social science elective 3 a.h.
Total 18 h.

Senior Year

First Semester

540:35 Electronic Engineering Materials and Devices 3 a.h.
540:85 Principles of Electrical Engineering Design II 2 a.h.
*540:91 Professional Seminar 0 a.h.
**Technical electives 3 a.h.
Total 8 a.h.
forces, and body acceleration. The student who understands the principles of motion and forces can predict the motion of objects and analyze the effects of external forces on those objects.

**Laboratory:**
- Experiments on simple and compound machines.
- Study of friction, work, energy, and power.
- Exploration of kinematics and dynamics in various contexts.

**Computer Applications:**
- Use of software for data analysis and simulation.
- Developing algorithms to solve problems related to motion and forces.

Graduate Program

The electrical and computer engineering program offers two tracks leading to the Master of Science and Doctor of Philosophy degrees. Students may select M.S. or Ph.D. programs, and either may pursue an M.S. degree.

Excellence in scholarship and research is stimulated through close contact with the faculty throughout the period of graduate study and through programs tailored to fit individual needs. Each student must be 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 based only by a few broad guidelines imposed by the Graduate and by the program. Foreign languages 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 in light of the student's goals.

The basic program, which is fundamental to electrical and computer engineering, has wide application, and 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-qualified and funded research laboratories exist in the following areas:

**Waves and Materials**
- Plasma physics, electro-optics, and acoustics investigations utilize specialized laboratories in both the Engineering Building and in the physics research building. Typical projects involve nonlinear wave interaction, plasma instabilities, laser optics, acoustic wave behavior, and ultrasonics.

**Engineering in Biology and Medicine**
- Ultrasound imaging, image processing and speech processing are currently active areas. Research facilities in the Computer Engineering Laboratory, and in the Cardiovascular Image Processing Laboratory, Ultrasound Imaging, and Microprocessor Laboratories are used in these projects.

**Controls and Systems**
- Mathematical theory of optimal control, time delay system, adaptive control, applications of modern control theory to robotics and real-time digital computer implementation of various control schemes are under investigation. Minicomputers are utilized in the control laboratory to investigate real-time digital control, nonlinear system theory, and digital estimation. Other topics include applications of automatic processes to problems in control and communication systems. Current investigations emphasize estimation, identification, and control for stochastic 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 research areas.

In cooperation with 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 advisor and the graduate committee. This includes at least 12 semester hours of course work in electrical and computer engineering, not including courses required for electrical engineering undergraduates.

With thesis, up to 6 semester hours of the 30 semester hours may be research credit.

Without thesis, at least 3 semester hours of 547:198 Individual Investigations are required in addition to the 12 semester hours in electrical and computer engineering. This independent study is to be a special project completed under the supervision of the electrical and computer engineering advisor.

The candidate for the master's degree is expected to complete a final examination which is conducted by a committee of at least three faculty members, of which the advisor is chair. One part of the final examination must consist of an oral defense of the thesis, for thesis candidates, or of the material in 547:198 Individual Investigations, for nonthesis candidates.

At the time of graduation, the candidate for the master's degree must have acquired a cumulative grade-point average of 3.00 or higher.

**Doctor of Philosophy**

Requirements are:

- Selection of a program advisor 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 advisor 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 547.
- Successful completion of the Ph.D. qualifying examination.
- Successful completion of the Ph.D. comprehensive examination.
- Successful completion of a research program.
- Successful completion of a final oral defense of the thesis and a cumulative grade-point average of 3.25 or higher.

**Graduate Admission**

The normal requirement for admission to the graduate program is at least a 2.7 grade-point average in courses in electrical and computer engineering, mathematics, and physics. In addition, for U.S. students, 3.0 for Ph.D. students. An M.S. student's grade-point average less than 2.7 but better than 2.5 is courses in electrical and computer engineering, mathematics, and physics may be admitted. Students with baccalaureate degrees in related areas (e.g., physics, mathematics, and computer science) may be admitted. In such cases, additional course work without graduate credit may be required.

Each application is reviewed on an individual basis. Extended or limited 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
Progress chair: George M. Lewis
Faculty professors: Bui-Tay Leung, Arthur Kopp, George Lurie, Howard M. McCleary associate professors: James B. Jordan, K. B. Chaudhuri
Assistant professors: James Mohler, H. S. F. Richardson
Degree offered: S.B., without designation of a major.

The increasing emphasis on interdisciplinary and nontraditional 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 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 engineering program is to provide the opportunity for each student to develop an individually-tailored course of study. However, a proper balance between breadth and depth must be maintained in order to result in a well-balanced 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 of the four-quarter period that includes the engineering core courses. In consultation with an adviser, the student's elective sequence is planned to achieve a coordinated 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 Department reserves the right to require students to maintain a minimum GPA of 2.0 in all courses, with particular emphasis on those required in the fields of engineering science.

Curriculum
Sophomore Year
First Semester
22M:37 Engineering Calculus III 4 a.h.
520:16 Thermodynamics I 4 a.h.
540:11 Introduction to Electrical Science 3 a.h.
560:15 Materials Science I 3 a.h.
560:10 Dynamics 3 a.h.
Total 17 a.h.
Second Semester
22M:38 Differential Equations for Engineers 4 a.h.
540:12 Linear Systems Analysis 3 a.h.
560:19 Mechanics of Deformable Bodies 3 a.h.
540:18 Principles of Electronic Instrumentation 4 a.h.
33:81 Intermediate Electromagnetism 4 a.h.
Total 17 a.h.
Junior Year
First Year
22M:39 Probability and Statistics for Engineering and Physical Sciences 3 a.h.
22M:33 Intermediate Engineering Physics I 3 a.h.
322:20 Mechanics of Fluids and Transfer Processes 4 a.h.
560:21 Principles of Design I 3 a.h.
*Humanities or social science elective 3 a.h.
Total 16 a.h.
Second Semester
22M:39 Modern Physics 3 a.h.
560:22 Principles of Design II 3 a.h.
550:37 Engineering Management Science 3 a.h.
Technical elective 3 a.h.
*Humanities or social science elective 4 a.h.
Total 18 a.h.
Senior Year
First Semester
Design course 3 a.h.
Technical electives 12 a.h.
*Humanities or social science elective 3 a.h.
Total 18 a.h.
Second Semester
Design course 3 a.h.
Technical electives 9 a.h.
*Humanities or social science elective 3 a.h.
Total 15 a.h.
*The humanities and social science electives must be selected to satisfy the requirements and social science requirements of the College of Engineering.

Industrial and Management Engineering
Program chair: J.R. Ross
Program assistant: R. C. Beal, J. D. Luchsinger, J. R. Taylor

The industrial and management engineering program offers 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 engineering program is intended for students who wish to position themselves to make high-level decisions and to be in line with participating directly in management decisions. Representative job titles include industrial engineer, systems analyst, or engineer, operations research analyst, internal consultant, human factors engineer, supervisor, or manager. The industrial and management engineering program is designed to prepare students for management positions in industry, government, or public service organizations. The curriculum provides courses in a broad range of courses in areas such as finance, law, and ethics.

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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 factors engineering, and information systems.

Curriculum

Sophomore Year

First Semester
580:10 Dynamics 3 s.h.
540:11 Introduction to Electrical Science 3 s.h.
580:15 Materials Science I 3 s.h.
580:27 Engineering Management Science 3 s.h.
223:37 Engineering Calculus III 4 s.h.
Total 16 s.h.

Second Semester
540:12 Linear Systems Analysis 3 s.h.
520:16 Thermodynamics I 4 s.h.
223:38 Differential Equations for Engineers 4 s.h.
580:76 Materials Science II 3 s.h.
580:38 Economics electives 3 s.h.
Total 17 s.h.

Junior Year

First Semester
131:11 Elementary Psychology 4 s.h.
260:1 Intermediate Engineering/Physics 3 s.h.
580:21 Principles of Design I 3 s.h.
580:39 Probability and Statistics for Engineering and Physical Science 3 s.h.
580:71 Materials Processing I 3 s.h.
580:91 Professional Seminar 0 s.h.
Total 16 s.h.

Second Semester
580:22 Principles of Design II 3 s.h.
29:82 Intermediate Engineering/Physics II 3 s.h.
580:81 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.
540:18 Principles of Electronic Instrumentation 4 s.h.
Total 16 s.h.

Senior Year

First Semester
580:91 Professional Seminar 0 s.h.
580:182 Information Systems Design 3 s.h.
131:108 Psychology in Management 3 s.h.
***Technical electives 9 s.h.
Total 15 s.h.

Second Semester
580:91 Professional Seminar 1 s.h.
580:125 Operational Systems Design 3 s.h.
580:135 Quality Control, Reliability, and Engineering Statistics 3 s.h.
"Humanities elective" 3 s.h.
Science elective 3 s.h.
"Technical elective" 3 s.h.
Total 16 s.h.

The economics elective may be selected from:
6E:100 Price, Employment, and Production Theory 3 s.h.
6E:103 Microeconomics 3 s.h.
6E:111 Labor Economics 3 s.h.
6E:173 Managerial Economics 3 s.h.
The science elective may be selected from:
580:10 Mechanics of Deformable Bodies 3 s.h.
520:20 Mechanics of Flows and Transfer Processes 4 s.h.
29:83 Modern Physics 3 s.h.
A biological science course 3 s.h.
*Strongly recommended +total 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 (3 semester hours) is to be chosen with the approval of the academic advisor.
580:141 Operations Research I 3 s.h.
580:142 Production-Inventory Analysis 3 s.h.
580:143 Quantitative Investment Analysis 3 s.h.
580:144 Engineering Economic Decisions 3 s.h.
580:145 Digital Systems Simulation I 3 s.h.
580:157 Advanced Managerial Psychology 3 s.h.
580:158 Advanced Human Engineering 3 s.h.
667:86 Individual Investigations 3 s.h.
667:88 Individual Investigations 3 s.h.

Graduate Program

Graduate programs in industrial and management engineering are tailored to meet the needs of the individual. Each student's program of study will be based on his or her background, career objectives, and sound academic practice. The curriculum is highly flexible, the goal is academic excellence.
There are three areas of academic focus: operations research and applied statistics; production management, and human factors/ergonomics. Many M.S. graduate students wish to concentrate on one or two areas; whereas others wish a more general program with only moderate specialization. Ph.D. students are expected to have a breadth of background as well as a strong research specialization. Graduate students interested in transportation and logistics may also participate in a program which is jointly administered with the Program in Urban Transportation.

Master of Science

Two M.S. programs are available, a thesis and a non-thesis option. Students considering eventual admission to a Ph.D. program are strongly advised to select the thesis option. The M.S. thesis option requires a minimum of 30 semester credits of course work of 100 or 200 level courses. Including at most eight semester credit hours of research. These students who elect the non-thesis option are required to complete a minimum of 30 semester credits of course work at the 100 or 200 level including at least nine credits at either the 200 level or at the 100 level but with the designee "advanced" in the course title. A tentative plan of study for each student is determined through consultation with his or her advisor; the final plan of study is reviewed by the student's examining committee, approved by the Industrial and Management Engineering Department chair, and by the Graduate College dean.

Entering students in all programs will review an extensive analysis of programming, probability, statistics and numerical analysis, at a level that is expected to be completed in undergraduate engineering programs. Both oral and written skills in the English language are essential. Engineering Management and Human Factors students will find elementary psychology and engineering economics useful preparation. Computing course work may be required for students with non-engineering backgrounds.
The student is required to maintain a cumulative grade point average of 3.0 on all graduate coursework (both 100 and 200 level courses) at The University of Iowa to be eligible for the M.S. degree. The nature of the final examination will be specified by the examining committee. It 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 72 hours of study including the dissertation. Completely part-time Ph.D. study is discouraged. There is no foreign language requirement or special requirements on research tools.
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


Graduate Admissions

Students with an M.S. objective may be admitted from an ABET-accredited Bachelor's curriculum in any engineering discipline or in the mathematical or physical sciences with a minimum grade-point average of 3.0 and/or an acceptable score on the Graduate Record Examination (GRE) Aptitude Test (quantitative, at least 300 verbal, 650 quantitative). Applicants from non-U.S. institutions must meet English language requirements for regular admission. Students may be considered for regular admission at any time with a lower grade-point average and lesser GRE scores. Students from business or social sciences programs who have adequate mathematical preparation may also be considered for regular or conditional admission. The student's condition must achieve regular status within two semesters of registration or attaining a grade-point average of at least 3.0 and regular acceptance by the industrial and management engineering program faculty or be dismissed. Admissions may be limited to the number of faculty and other available resources.

Students with a Ph.D. objective may be admitted from an ABET-accredited Bachelor's or a post-Bachelor's curriculum in any engineering discipline or the mathematical and physical sciences with a minimum grade-point average of 3.0 or an acceptable GRE Score (Typically, at least 600 verbal, 650 quantitative). Applicants from outside the U.S. must have an equivalent grade-point average for regular admission as determined by this University. Students may also be admitted from business or social sciences programs on an individual basis. Students with a Ph.D. objective and a B.S. degree or an M.S. degree with at least 2 years of full-time experience are usually first admitted to the M.S. program.

Curriculum

Sophomore Year

First Semester

231.37 Engineering Calculus III
592.10 Dynamics
592.11 Introduction to Electrical Science
592.15 Materials Science
592.16 Thermodynamics
4 Total

Second Semester

231.38 Differential Equations for Engineers
652.12 Linear Systems Analysis
592.18 Principles of Electronic Instrumentation
592.19 Mechanics of Deformable Bodies
29.81 Intermediate Engineering Physics I
5 Total

Junior Year

First Semester

600.39 Probability and Statistics for Engineers
29.82 Intermediate Engineering Physics II
29.82 Principles of Design I
529.91 Professional Seminar
3 Total

Second Semester

29.83 Modern Physics
580.22 Principles of Design II
580.23 Experimental Engineering
582.40 Thermodynamics
5 Total

Senior Year

First Semester

529.45 Heat Transfer
592.32 Mechanical Systems Design I
5 Total

Second Semester

592.91 Professional Seminar
5 Total

Graduate Program

The graduate 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 humanities and social science areas. Technical electives are selected to provide in-depth knowledge, in at least one of the major disciplines of mechanical engineering. All apprentices students undertake a design project. A handbook describing the curriculum and program requirements is available in the program office.
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.

Student programs emphasizing fluid mechanics, heat transfer and energy conversion, biomechanics, or mechanical systems may be developed from courses offered by the mechanical engineering program faculty. M.S. students selecting a more general program may combine these emphases, while those desiring more specialization may accommodate these preferences through the combination of program courses. First-year students choose from appropriate electives from other programs and departments of the College of Engineering and the University. Ph.D. student programs may be selected to fit any of these areas, through the choice of appropriate courses and research activities.

A graduate 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 or better may be considered for admission to the Master of Science degree program in mechanical engineering.

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, but the latter must be completed within the first two years of the two-year program. To earn the M.S. degree, the student must complete and submit a minimum grade-point average of 3.0 on a minimum of 30 semester hours of graduate work to 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 between 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 or physical sciences may be admitted as Ph.D. students if they have a minimum undergraduate grade-point average of 3.0. Reference letters, scores on the Graduate Record Examination (GRE) Aptitude Test, student research interests, previous graduate study grade-point average, and other factors may also be considered in making the decision to admit a student. Usually, students without 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 60 semester hours of credit, including research for the dissertation, beyond the baccalaureate degree. There is no foreign language requirement. Part-time Ph.D. 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 has successfully completed 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 graduating 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 chair. At the time the student is admitted, a Ph.D. committee is selected by the student and his or her advisor, and approved by the program chair and the graduate dean. The committee shall include at least five faculty members, of whom two must be 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, in addition to the requirements of the course work specified in the plan of study and upon the Ph.D. student's recommendation, the student will be admitted to the comprehensive examination given by the student's committee. The comprehensive
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 teaching and scholarship 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 biology, chemistry, fluid, and thermal sciences to the design of engineering components and projects; to the production, distribution, and utilization of water, energy, and materials; 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 core courses, electives, and the major. In addition to serving students in all engineering curriculums through the core program, the division offers specialized concentrations in biocatalysis, biotechnology, civil, chemical, and mechanical engineering.

The course offerings in fluid sciences, environmental engineering, fluid mechanics, hydraulic engineering, and water resources for students pursuing 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 components
- Transport in porous and fractured rocks
- Experimental and theoretical studies of turbulent boundary layers

**Weakes, nite, and plumes: atmospheric dispersion; acid rain; unsteady turbulent and transition flows; statistical and numerical solutions of problems in ship hydrodynamics; algae in lake systems; physiological flow phenomena in streams; study of all systems; wind loads on structures; detection and removal of radon in air; turbine; rate- and hot-wire anemometry; real-time acquisition and processing of data.

**Thermal Sciences**

- Biological heat transfer; dynamic of aerosol cloud physics; radiant heat transfer through real gases; radiative properties of rough surfaces; remote sensing of weather, dust, performance, and heat transfer studies of solar-thermal collectors and thermal storage systems; smoke transfer in energy systems; numerical methods in heat transfer; computation of biomass to fuel; power-steam cooling systems; economics of power production.

**Hydraulic Engineering**

- Design, modeling, and on-site testing of pipe and outlet structures; river management; thermal discharges into natural water bodies; cooling tower performance; sediment transport; formation of ice covers and ice jams; strength of ice; 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 pollutants in water treatment; kinetics of nitrification in streams; study of water pollution in wastewater treatment; disposal of sewage from septic tanks and wastewater treatment; aerobic treatment of septic systems; gas scrubber wastes; aerobic treatment of high strength thermal sludge conditioning wastes; toxicity of toxic and hazardous wastes; acid rain.

**Water Resources**

- Hydrology of water supply; management of reservoirs; stochastic hydrology; systems analysis; watershed modeling; water utility by waste heat management.

**Special Laboratories and Facilities**

- Undergraduate instruction
- The appointees for undergraduate instruction in fluid and thermal sciences is located in the Engineering Building and contains a water table, a water table, various air, water, and oil flow devices; and facilities for numerous small-scale experiments which demonstrate the principles of mass, momentum, and energy transfer. More specialized experiments are also performed in the other laboratories of the division and with the facilities of the Iowa Institute of Hydraulic Research. Experiments in the environmental sciences are performed at the laboratories in the University Water Plant and the P. M. P. Morgan Sanitary Engineering Laboratory.

**Fluids and Hydraulics Laboratories**

- Since most members of the senior research staff of the Institute of Hydraulic Research hold professorial 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 aspects of thermal sciences related to diffusion and dispersal of waste heat in water.

- The institute houses some of the most modern research facilities in the world, including a 300-foot tow tank, several hydraulic flumes and wind tunnels, a dispersion flume, a wael tank, two special low-temperature flow facilities for investigation of ice phenomena, and an environmental hydraulic flume for modeling of atmospheric flow. A new refrigerated wind tunnel is under construction. The institute is also equipped with data acquisition and control systems based on HP-1000 computers for real-time recording, storage, and processing of data. A large amount of data gathered as various projects in the laboratory.

**Environmental Engineering Laboratories**

- Environmental research is conducted in the solar energy, thermal radiation, and heat transfer laboratories located in the Engineering Building. These are served by a central computer equipped with terminals and a computer-based data acquisition system that permits data to be collected in the University computing center. Specialized equipment consists of a solar-collector test stand with environmental control, and a simultaneous evaluation of several collectors, solar-energy thermal storage facility, a solar-assisted distillation column, electric and acoustic aerosol/photocatalysis apparatus, an NF membrane facility with spectrophotometric diagnostic equipment, a spectral bidirectional reflectance factor for radiant property measurements, and two-chamber air- and laser anemometers.

- Research in environmental engineering is conducted in the Division of Environmental Engineering and Research Laboratory at the Iowa City Municipal Water Reclamation Plant, and in the water plant laboratory at the University Water Treatment Plant.
Division of Energy Engineering/ENGINEERING

3.15 Environmental Microbiology
3.15.1 Theory and applications with applications to water quality and wastewater treatment systems.

3.15.2 Ethology
3.15.3 Biophysics and biophysical characteristics of natural water with emphasis on the relationship between behavior and environmental factors, Prerequisite: 3.15.2

3.15.5 Environmental Engineering Design
3.15.6 Principles of design or water and wastewater treatment systems.
Prerequisites: 3.15.2, 3.15.3, and 3.15.4.

3.15.7 Environmental Engineering
3.15.8 Principles of design or water and wastewater treatment systems.
Prerequisites: 3.15.2, 3.15.3, and 3.15.4.

3.15.9 Soil and Solid Waste
3.15.10 Sources, generation, and methods for the assessment of environmental quality of soil pollutants and solid waste.
Prerequisites: 3.15.8, 3.15.9, and 3.15.10.

3.15.11 Advanced Environmental Systems Design
3.15.12 Physical, chemical, and transport aspects of natural ground and surface waters, and the effects of pollutants discharge on water quality.
Prerequisites: 3.15.12 and 3.15.13.

3.15.13 Environmental System Modeling
3.15.14 Mathematical modeling of environmental processes, including aquatic, atmospheric, terrestrial, and solid waste systems.
Prerequisite: 3.15.12.

3.15.15 Advanced Environmental Chemistry
3.15.16 Chemical oxidation and reduction methods and instrumental methods in the analysis of water and solid waste.
Prerequisites: 3.15.12 and 3.15.13.

3.15.17 Advanced Methods and Instrumental Techniques in Environmental Science
3.15.18 Studies of projects on complex environmental topics relating environmental instrumentation and environmental science.
Prerequisite: 3.15.16.

3.15.19 Industrial Water Quality Control
3.15.20 Quality, quantity, and treatment of water for industrial processes.
Prerequisites: 3.15.12 and 3.15.13.

Fluid Mechanics
3.15.21 Intermediate Mechanics of Fluids
3.15.22 Conservation of mass, momentum, and energy principles; fluid forces on solid boundaries; fluid dynamics.
Prerequisite: 3.15.12.

3.15.23 Intermediate Mechanics of Fluids II
3.15.24 Kinematic and dynamic concepts, fluid boundary layers, vortices, and jet dynamics.
Prerequisite: 3.15.22.

3.15.25 Experimental Methods in Fluid Mechanics
3.15.26 Design and execution of several experiments; design and execution of additional experimental studies.
Prerequisite: 3.15.24.

3.15.27 Fluid Dynamics
3.15.28 Thermodynamics of compressible fluid flow with applications to turbomachinery, modern, and energy applications; flow with variable and constant area, with and without friction, and with and without heat transfer.
Prerequisites: 3.15.24 and 3.15.25.

3.15.29 Compressible Fluid Flow
3.15.30 Basic phenomena in compressible fluid; shock waves and expansion waves; method of characteristics, similarity solutions, and gasdynamics.
Prerequisite: 3.15.28.

3.15.31 Subsonic Gas Flows
3.15.32 Review of thermodynamics and fluid mechanics of subsonic, supersonic, and transonic fluids; compressible fluid mechanics.
Prerequisite: 3.15.28.

3.15.33 Transonic Flows
3.15.34 Transonic theory of compressible flows; waves and disturbances, shock waves, and disturbances; methods of analysis.
Prerequisite: 3.15.28.

3.15.35 Gas Dynamics
3.15.36 Waves and shock waves, supersonic and hypersonic flow, gasdynamics.
Prerequisite: 3.15.28.

3.15.37 Boundary Layer Theory
3.15.38 In-depth boundary layer theory, including influence of compressibility, heat and mass transfer, turbulence, and shock waves.
Prerequisites: 3.15.22 and 3.15.24.

3.15.39 Hydrodynamics II
3.15.40 Forces and motions acting on bodies and lines in a fluid moving in a linear, irrotational, and non-compressible fluid.
Prerequisite: 3.15.22.

3.15.41 Hydrodynamics
3.15.42 Forces and motions acting on bodies and lines in a fluid moving in a linear, irrotational, and non-compressible fluid.
Prerequisite: 3.15.22.

3.15.43 Stability Theory in Fluid Mechanics
3.15.44 Stability of shear flows, boundary layer separation, and transition.
Prerequisite: 3.15.28.

3.15.45 Surface Tension
3.15.46 Interfacial and thin liquid films; higher-order boundary layers; thermocapillary, and capillary instabilities; micromechanical studies.
Prerequisite: 3.15.22.

3.15.47 Capillarity and Electrophoretic Fluid Dynamics
3.15.48 Diffusion of charged particles due to electric fields, heat, and light, and other mechanisms.
Prerequisite: 3.15.22.

3.15.49 Electrophoretic Fluid Dynamics
3.15.50 Movement of charged particles due to electric fields, heat, and light, and other mechanisms.
Prerequisite: 3.15.22.

3.15.51 Environmental Scavenging Processes
3.15.52 Movement of charged particles due to electric fields, heat, and light, and other mechanisms.
Prerequisite: 3.15.22.

3.15.53 Environmental Engineering
3.15.54 Movement of charged particles due to electric fields, heat, and light, and other mechanisms.
Prerequisite: 3.15.22.

3.15.55 Environmental Engineering
3.15.56 Movement of charged particles due to electric fields, heat, and light, and other mechanisms.
Prerequisite: 3.15.22.
Division of Information Engineering

Chair: Sufiokazi M. Rabito
Faculty: Junqi Zhao, James C. Sheard, Carl E. Dyson, Adrian J. Hare, Ralf R. Langner, Heber F. Mikk, Sufiokazi M. Rabito, John P. Robinson

PhD Program in Computer Science

Computer Systems
Fault-tolerant subsystem design and - reliable-system configurations are typical project areas. Other topics include hardware security, data communications, networks, and self-checking systems.

Facilities
The Computer Engineering Laboratory supports undergraduate and graduate teaching and research in the area of real-time computer applications. This laboratory is built around PDP 11/04 minicomputers with magnetic tape, disk storage, multiple terminals, a line printer, and a graphics terminal. Other peripherals include A/D converters, D/A converters, real-time clocks, and digital input/output interfaces. This laboratory also supports research and teaching in image processing and includes a video camera for digitizing images, a frame store processing system with a high resolution color monitor, and a digitizing graphics tablet. This laboratory is connected to the campus computer communications network.

The Microprocessor Laboratory supports teaching and research activities in microprocessors and their applications. The laboratory has a broad range of commercially available microprocessor systems. These include both complete development systems and assembly board processors. This laboratory also supports research in applications, compilers, and signal processing.

The Electro-optic Laboratory is utilized for demonstrations and graduate research in coherent optics. Typical projects concerned with the applications of laser communications, technology, signal processing, and ultrasonic waves.

The Physics Laboratory operates in conjunction with the Department of Physics, Astronomy. Experiments are performed in several large double lab spaces and include confinement devices. Investigations are carried out on small-signal, instability, double layers, linear and nonlinear waves, scattering, and wave-wave interactions.

The Hybrid Microelectronics Laboratory has facilities for fabricating thick- and thin-film hybrid circuits. The laboratory is used for teaching and research in the areas of integrated electronic circuits, microelectronics, planar devices, and transistors.

The Ultrasonic Imaging Laboratory is used for teaching and research in engineering solutions in the area of non-invasive ultrasonic imaging of soft tissues. Ongoing projects include ultrasonic properties of soft tissues,
Biomechanical Engineering Laboratories

The Biomechanics Laboratory is equipped for research in various specialties and modeling associated with biomechanical systems. Equipment includes a photo-electric digitizing system, a 12-inch wide X-ray machine, a 20-channel EEG machine, a variety of mechanical and electronic recording systems, and a variety of other equipment.

The Biofluidodynamics Laboratory is equipped for research in cardiovascular fluid dynamics. Equipment includes a low-speed wind tunnel, a water tunnel, a variety of high-speed cameras, a variety of mechanical and electronic recording systems, and a variety of other equipment.

Chemical Engineering Laboratory

Located in the Chemistry-Engineering Building, this laboratory includes pilot-plant equipment for the study of industrial processes, including distillation, reaction, and separation. The laboratory is equipped with a variety of equipment, including a variety of high-speed cameras, a variety of mechanical and electronic recording systems, and a variety of other equipment.

Electron Microscope Laboratory

This laboratory is equipped with an RAC-330 electron microscope, a scanning electron microscope, and a variety of other equipment. The laboratory is equipped with a variety of high-speed cameras, a variety of mechanical and electronic recording systems, and a variety of other equipment.

Electronic Materials Processing Laboratory

This laboratory is equipped with a variety of equipment for the study of electronic materials, including a variety of high-speed cameras, a variety of mechanical and electronic recording systems, and a variety of other equipment.

Mechanical Engineering Laboratories

The mechanical engineering laboratories are equipped with a variety of equipment for the study of mechanical systems, including a variety of high-speed cameras, a variety of mechanical and electronic recording systems, and a variety of other equipment.

Powders and Particles Laboratory

This laboratory is equipped with a variety of equipment for the study of powders and particles, including a variety of high-speed cameras, a variety of mechanical and electronic recording systems, and a variety of other equipment.

Structural Testing Laboratory

This laboratory is equipped with a variety of equipment for the study of structural systems, including a variety of high-speed cameras, a variety of mechanical and electronic recording systems, and a variety of other equipment.

Courses

Engineering Core

1. Introduction to Engineering
2. Basic Electrical Engineering
3. Basic Electronics
4. Mechanical Engineering
5. Materials Science
6. Computer Science
7. Mathematics
8. Physics

Materials Science

1. Introduction to Materials Science
2. Basic Materials Science
3. Advanced Materials Science
4. Materials Processing

Special Program Courses

1. Cooperative Education Program
2. Honors Program
3. Study Abroad
4. Internship Program
5. Research Assistantship
6. Teaching Assistantship
7. Graduate Assistantship
8. Undergraduate Research Assistantship
9. Summer Research Assistantship
10. Thesis Research Assistantship
11. Dissertation Research Assistantship
12. Special Topics

Division of Materials Engineering/ENGINEERING

317
Division of Systems Engineering

Chair: J.R. Black
Faculty: professors J.R. Black, J.M. Litchfield, J.R. Eshen, R.A. Taff, R.A. Zerbe
Associate professors: M.R. Bell, J.A. Druke, J.J. Druke, J.J. Druck, J.J. Druck, J.J. Druck
Instructors: R.A. Taff, T. Taff, R.A. Zerbe

The Division of Systems Engineering is an administrative division of the College of Engineering which develops, coordinates, and administers teaching, laboratories, and research in areas associated with large-scale system analysis and design. Faculty of the division develop and provide courses primarily in support of the undergraduate program in industrial engineering, graduate program in industrial and management engineering, and the transportation portion of the civil engineering degree program, and part of the college undergraduate core curriculum.

Instruction and Research

Teaching and research interests of the faculty are centered in areas associated with production and quality management, human factors/economics, health care, operations research, applied statistics, computer-aided design, and other technology. Specific research projects recently completed, or ongoing, include the study of computerized optimization problems, economics or scale, the use of data base systems in simulation programming languages, human information processing with visual and auditory displays, improved regression model parameter estimation, linguistic disambiguation, industrial accident analysis, ergonomic aiding in design and teaching, computer-aided design, manufacturing, operations research, and computer-aided design and teaching.

Facilities

The Division of Systems Engineering is responsible for development and operation of the College of Engineering's Computer-Based Education (CBE) Laboratory. This laboratory provides on-line instruction, with the University's computer terminals via video display and hard copy terminals. The laboratory also contains computer access equipment such as kaypros and line printers, as well as video equipment for instructional purposes.

The division also is equipped with a highly modern human-factors laboratory with real-time data acquisition and computer capability.

The division occupies remodeled fourth-floor space in the Engineering-2 building. Special teaching and design laboratories and graduate student offices are provided.

Courses

Engineering Core and General

SE 101 Engineering Calculations

Digital language and design utilizing FORTRAN, assembly language, and logic design and programming. Lab and design aspects. Introduction to computer software and hardware. Prerequisite: SE 101.

SE 102 Numerical Methods

Numerical methods and design of engineering experiments. Linear and non-linear systems, error analysis, finite elements, and design and manufacturing. Prerequisite: SE 101.

SE 103 Engineering Graphics

Computer-aided design and drafting. Development of engineering design skills, including computer software and hardware. Prerequisite: SE 101.

SE 104 Engineering Design

Principles and applications of engineering design. Development of systematic methods and practices in engineering design. Prerequisite: SE 101.

SE 105 Project Engineering


SE 106 Computer-aided Engineering


SE 107 Engineering Management Science

An introduction to management science techniques for addressing and solving complex engineering problems. Includes an overview of the role of management science in engineering practice, stochastic models and decision-making, linear and integer programming, and simulation. Prerequisites: SE 101 and MATH 402.
The University of Iowa has been a leading center of advanced study for three-quarters of a century. Presently, nearly one-fourth of its students is enrolled 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 the administration of scholarship, fellowship, and research funds, the Graduate College encourages research and strengthening of departments. It offers 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 12-member Graduate Council elected from and by the graduate faculty and the Graduate Student Senate is the executive committee of the graduate faculty and is advisory to the dean of the Graduate College.

Degree Programs

The Graduate College confers the Master of Arts (M.A.), Master of Science (M.S.), Master of Business Administration (M.B.A.), Master of 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.
Chemistry—M.S.*, Ph.D.
Civil and Environmental Engineering—M.S., Ph.D.
Classics—M.A.*, Ph.D.
Communication—M.A.*, Ph.D.
Communication and Theatre Arts—M.A.*, Ph.D.
Comparative Law—M.D., Ph.D.
Comparative Literature—M.A.*, Ph.D.
Computer Science—M.S.*, Ph.D.
Criminal Justice and Corrections—M.A.*
Dental Hygiene—M.S.
Economics—M.A.*, Ph.D.
Education—M.A.*, M.A.T.*, Ed.S.*, Ph.D.
Electrical and Computer Engineering—M.S., Ph.D.
Endodontics—M.S.
English—M.A.*, M.F.A., Ph.D.
Fixed Prosthodontics—M.S.
French—M.A.*, Ph.D.
Genetics—Ph.D.
Geography—M.A.*, Ph.D.
Geology—M.S.*, Ph.D.
German—M.A., Ph.D.
Greek—M.A.*
History—M.A.*, Ph.D.
Home Economics—M.A.*, M.S.*
Hospital and Health Administration—M.A.
Industrial and Management Engineering—M.S., Ph.D.
Journalism—M.A.*
Latin—M.A.*
Library Science—M.A.*
Linguistics—M.A.*, Ph.D.
Mass Communications—Ph.D.
Mathematics—M.S.*, Ph.D.
Mechanical Engineering—M.S.*, Ph.D.
Mechanics and Hydraulics—M.S.*
Ad Hoc Interdisciplinary Ph.D. Programs

In addition to the degree programs listed above, the graduate faculty has authorized the awarding of ad hoc interdisciplinary Ph.D. degrees. There are no prerequisites for ad hoc interdisciplinary Ph.D. programs. Students seeking approval for ad hoc interdisciplinary Ph.D. programs must previously have been admitted to and enrolled in a departmental program in the Graduate College. For details, see Section XII.E. in "Rules and Regulations of the Graduate College" in this section of the Catalog.

Aging Studies Program

The Aging Studies program is a multidisciplinary, nondegree program administered by the College of Liberal Arts in cooperation with other colleges of The University of Iowa. The program is designed to encourage graduate degree programs for students with academic, professional, research, or service careers interested in aging. An entry is made on the student's transcript carrying completion of an approved curriculum in Aging Studies. For further details, see "Aging Studies Program" in the "College of Liberal Arts" section of the Catalog.

Applied Mathematical Science

The program in applied mathematical science is a broadly-based interdisciplinary program leading to the Ph.D. degree. The student combines study of advanced mathematics, one science, (behavioral, biological, engineering, physical, or medical), and the methods of applied mathematics. See "Applied Mathematical Science" in the "College of Liberal Arts" section of the Catalog for a list of faculty and a further description of the program.

Committee on International and Comparative Studies

The Committee on International and Comparative Studies was established in 1961, to coordinate and support international studies at The University of Iowa. The committee, through the CICS, embraces five interdisciplinary programs: Asian Civilizations, Latin American Studies, Social Studies, Women in Development, and the Center for Development and the Sciences. Faculty participants in these programs are drawn from several departments across the University.

Three of the five programs in CICS are primarily instructional in nature: Asian Civilizations, Latin American Studies, and Social Studies (for further details, see the appropriate sections of this Catalog under "College of Liberal Arts"). The Center for Development Studies and the Women in Development program concern themselves with faculty research. CICS support of the research programs consists of sponsoring more than thirty public lectures on international topics during the academic year, organizing faculty research conferences, maintaining a small library of periodicals on international affairs, providing study fellowships and grants. CICS also publishes the International Studies Newsletter six times a year.

Evolutionary Ecology and Behavior

Program co-chair: Hugh Dingle. Stephen Handlin Faculty: Jonathen Howard V. Benda (Zoology), Robert B. Cook (Zoology), Hugh Dingle (Zoology), Robert H. Brown (Zoology), Bernard C. Stone (Zoology), Kay A. McAlpine (Biology), Walter Storer (Zoology), Susan Weir (Zoology), Paul Wilmshurst (Marine Biology), Janet N. Cheung (Zoology), Seeley H. Fowl (Zoology), Louise H. L. Kritzer (Zoology), Homeyra N. J. Kritzer (Zoology). Appointees: Nels G. Smith (Biology), Jonathan Poston (Biology), Don W. Walker (Zoology).

Program and Facilities

The departments of Botany and Zoology offer courses in a study leading to the B.S., M.B., and Ph.D. degrees in five major areas of specialization: evolutionary biology, emphasizing adaptation, the genetic basis of adaptation, and natural selection.

Program and Facilities

The departments of Botany and Zoology offer courses in a study leading to the B.S., M.B., and Ph.D. degrees with specialization in ecology and behavior, emphasizing adaptation, the genetic basis of adaptation, and natural selection.

Particular strengths of the program are behavioral and quantitative genetics, quantitative methods in ecology and behavioral ecology, plant-animal interactions, and tropical biology. There is real and strong emphasis on reliance between controlled experimentation and field observation. Laboratory research may include controlled breeding experiments in which heritability, genotype-environment interactions, and genetic covariance of neurophysiological, behavioral, life history, or other traits is investigated. Field research involves the adaptive significance of traits.

Opportunities for field research are provided by the Marine Sciences Campus just outside Iowa City, with lakes, temperate hardwood forest, and old fields. The Iowa Lakeside Laboratory on Lake Okoboji has year-round research facilities, housing, and a research vessel, and provides the opportunity to study undisturbed prairie, marshland, and lake ecosystems. Three graduate field courses are offered by the faculty, with trips to the Smokies, the Everglades, and the desert, the prairie, and other sites. Texts courses as professional as well as introductory, since research projects are original and have led to publication.

Fieldwork by faculty and students also takes place worldwide. Recent studies have been conducted in East Africa, Thailand, Belize, Costa Rica, the Caribbean, Brazil, Mexico, Central America, the Great Smoky Mountains, the Sonoran Desert, the American Rockies, and the Florida Keys. The Smithsonian Institution Laboratory on Barco Colorado Island in Panama, the Panama National Research Station in Costa Rica, and the Mukhet Marine Biological Station are among the sites used by staff and students.

The University of Iowa is a member of the Quekairion for Tropical Studies and regularly sends students to the Tropical Studies Center in Costa Rica. In addition, the JTL
cooperative program with the University of the Andes in Merida, Venezuela.

Indoor facilities permit a wide range of studies, with varied equipment for observation and analysis, such as video-recorders, movie cameras, walk-in environment chambers, computer terminals, a 3C-M3, and a POP-12 computer. There is ample space for housing a variety of organisms including molluscs, mites, prairie dogs, milkwees, orchids, insects, leaf-cutting ants, marine and freshwater invertebrates, tadpoles, and pond and reed-fragment fish. The botanical greenhouse contains not only experimental plants, but also a large collection of desert, jungle, aquatic, meadow, and ornamental flora. In the botanical herbarium are more than 200,000 specimens, including the Conrad herbarium of bromeliads and the Martin collection of fungi and slime molds. The Museum of Natural History, a institutional member of the American Association of Systematics Collections, houses more than 900,000 natural science specimens, with birds and mammals particularly well represented among the varietates.

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

Students may design their graduate programs to take advantage of collaboration, consultation, coursework, and cooperation opportunities with members of the faculty in human anthropology, archaeology, anthropoid paleoecology, ecology, computer science, biomedicine, botany, zoology, and psychology. Students are encouraged to participate in departmental affairs and may hold positions of responsibility on faculty committees.

Financial Support
All students are offered financial support. Teaching assistantships, research assistantships, tuition scholarships, and predoctoral training fellowships are available. In addition, each year two outstanding incoming graduate students are selected one in botany and one in zoology, for the TRF award, a teaching/research fellowship. The Bodine Fund assists student travel for study. Predoctoral students may apply for the Postdoctoral Assistant-in-Instruction Program of the NSF for fellowships for students in behavior. Predoctoral students may compete for seed grant money from the University. Computer funds are available for graduate students, postdoctoral, and faculty. For further information and application materials, contact the Department of Zoology or the Department of Botany.

Genetics
The Ph.D. program in genetics is an interdisciplinary program involving members of the departments of Biochemistry, Botany, Microbiology, and Zoology, as well as a number of faculty members in clinical departments. See "Genetics" in the "College of Liberal Arts" section of the Catalog for a list of participating faculty, degree requirements, and courses offered.

Joint Law and Graduate Degree Programs
Joint programs with the College of Law and a number of departments in the Graduate College have been developed under which students can simultaneously pursue degrees in both colleges. For further details see "College of Law" section of the Catalog.

Joint Programs within the Graduate College
Various joint programs have been developed whereby students simultaneously work toward two graduate degrees. Consult the appropriate sections of this Catalog for further information. Established joint programs include:
- Business Administration/Library Science
- Hospital and Health Administration/Urban and Regional Planning
- Social Work/Urban and Regional Planning
- Preventive Medicine and Environmental Health/Urban and Regional Planning

Medical Scientist Training Program
The MSTP is an interdisciplinary M.D.-Ph.D. program offered jointly by the College of Medicine and the Graduate College. See "Medical Scientist Training Program" in the "College of Medicine" section of the Catalog.

Neural and Behavioral Sciences
Program chair: John R. Harvey
Program director: Susan Binns (Animal Behavior), Randel X. Seidner (Pharmacology), Michael J. Surprenant (Physiology and Biophysics), Richard A. DeMers (Behavioral Neuroscience), High Tide Stein (Zoology), Robert E. Foltz (Physiology and Biophysics), David E. Gaskill (Pharmacology), Mohamed M. Tohamy (Anatomy), Louis W. Seiden (Pharmacology), John A. Harvey (Psychology), Joseph F. Hegmann (Behavioral Neuroscience), A. Virginia C. Wang (Psychology), and Christy V. Hildebrandt (Psychology). Also K. Johnson (Psychology), J. B. Kamer (Zoology), John F. Knudsen (Psychology), J. J. Kolb (Zoology), John P. Leggo (Zoology), Walter L. Raskin (Psychology), Eugene Sparrman (Zoology), Barbara Hey (Zoology), Gary W. Van Houweling (Zoology), Terence H. Williams (Anatomy) associate professors (by rotation) (Pharmacology), Peter A. Gertig (Physiology and Biophysics), Bing-Yee (Cao (Pharmacology), Leslie K. Johnson (Zoology), Ronald W. Jenner (Physiology and Biophysics), Edward A. Wasserman (Physiology and Biophysics), and Martha Montez (Pharmacology), James R. House (Anatomy) instructors (by rotation) (Pharmacology), and John S. Creamer (Anatomy) (by rotation) (Pharmacology). The program is administered by the Neural and Behavioral Sciences Committee.

Predoctoral students are Ph.D. candidates appointed for two years by the graduate program and postdoctoral trainees are identified jointly appointed by the faculty from those departments. All trainees participate in an advanced seminar course and a seminar in which current literature is considered. Trainees pursue interested, integrated studies in laboratories with various training emphases.

Admission
The program admits predoctoral students after they have been accepted for Ph.D. study in a department of the University. Students are admitted to the program following review of their academic records by the Neural and Behavioral Sciences Committee. The review includes consideration of Graduate Record Examination (GRE) Aptitude Test scores, a full academic transcript, letters of recommendation, and a written statement detailing the applicant's specific interests in neural and behavioral sciences.

The Neural and Behavioral Sciences Program admits postdoctoral fellows after they have arranged for a faculty sponsor and contingent on successful competitive review based on their GRE Aptitude Test scores, a full academic transcript, letters of recommendation, and a written statement of their
Urban Transportation
This is an interdisciplinary, onedegree graduate program dealing with the interactions of society and the various modes of passenger and freight transportation. Students participate in the program in conjunction with work toward a graduate degree in any one of a number of departments. When the graduate degree is awarded, an entry is also made on the student's transcript certifying completion of the Urban Transportation program. For further details, see "Urban Transportation" in the "College of Liberal Arts" section of the Catalog.

Research Resources
The many and diverse research activities of the University are centrally administered by the Office of the Vice President for Educational Development and Research, which has an interworking relationship with the Graduate College. For further information, see "Research Activities."

Financial Assistance
Approximately half of the University's graduate students receive some form of University-administered financial assistance. Eligibility requirements and application procedures are set forth in "Section VI, Graduate Appointments in Rules and Regulations of the Graduate College." There are the primary sources of assistance:

Teaching and Research Assistantships
Available in most departments: stipends typically range between $6,000 and $7,000 per year. Assistantships are eligible for tuition scholarships, nonresident assistantships (one-quarter time or more) and fees are reduced to resident rates.

University Teaching-Research Fellowships
For first-year graduate students entering doctoral programs; typical stipends are $7,700 a year or a year-round basis, with all tuition paid, for as many as four years; recipients have teaching and research assignments, but may carry full course loads at the same time; one year out of four and all summers, recipients have time to pursue studies, research, or writing.

Scholarships
Up to full tuition and fees.

Graduate Fellowships
$8,000 for the academic year.

Other Sources
University and National Direct student loans are available through the University's Office of Student Financial Aid.

Many departments offer additional support through teaching assistantships, part-time employment in research or part-time teaching appointments. The Office of the Vice President for Educational Development and Research maintains a library of information on public and private agencies which provide funds for research and graduate study. A considerable amount of material has been collected concerning awards for overseas study.

Graduate Student Senate
The Graduate Student Senate is the University graduate student body's representative organization. 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. Admission 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. Admission to the graduate program may be in any of the 16 graduate colleges. Admission by examination, on the basis of examinations given to entering students, is permitted in each case. Applications for admission must be submitted to the Admissions Office before the student is permitted to register for courses.

In addition to these forms, official transcripts from each undergraduate and graduate institution attended must be submitted to the director of admissions by the designated deadline prior to the time, the student is admitted. Applications must be submitted no later than March 15 for the fall semester, December 1 for the spring semester, and May 1 for the summer session. The deadline is not relative to graduation; students must meet the deadline for admission.

B. Graduate Record Examination
All applicants prior to consideration for admission should take the Graduate Record Examination.
E. Candidacy
Admission to the Graduate College is not the equivalent of acceptance as a candidate for an advanced degree, which must be earned through work successfully completed under the direction of the University of Iowa. (See "Section X. Master's Degrees," "Section XI. Two-Year Degrees," and "Section XII. Doctor's Degrees").

F. Declaration of Major and Degree
Every applicant for admission must indicate on the application form the department or program of major interest and the degree, certificate, or professional objective 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 International Department program, for work leading to a graduate degree or certificate or professional (or personal) improvement.
2. Conditional—Students who are interested in working toward a graduate degree or certificate but who are required by a department to demonstrate their ability to do satisfactory graduate work before being admitted to regular status. To be admitted on a conditional basis, the student must be recommended by a department, which shall assume responsibility for advising him or her. (See minimum grade-point requirements, "Section IA.") The student on conditional status must maintain regular status within two years of registration in the Graduate College by making a grade-point average of at least 2.5 (G.0) for doctoral students and acceptable by the major department, or be dismissed.
3. Special—Students with a valid bachelor's degree and at least a 2.3 grade-point average who wish to register for no more than two courses 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 admissions. 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 2.3 grade-point average may register for only one summer session without being accepted by a department or program. (See "Section 11" below.) The deadline for application for admission to the summer session is June 1st. Students who do not receive admission to any subsequent session, including 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. For nondoctoral students, 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 on graduate work 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 on 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 the minimum designated by the Graduate College dean, his or her papers shall be forwarded for consideration and decision.

Students applying to be admitted 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. The entire record of college work completed. Departments, or committees in charge of international department programs, may, and often do, set higher minimum academic requirements for these set forth above for the Graduate College as a whole, but it is understood that the individual departmental or program requirements may be obtained directly from the executive of the department concerned.

For State Board of Regents' formal approval of these requirements, see "Appendix to the Catalog.

I. Admission of Faculty Members to Graduate College
Persons who hold faculty rank as 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 register as a guest or for a one-semester appointment except in the department of his or her appointment or a closely related department. Such petitions must have prior approval of the department of appointment, dean of the college of appointment, the department in which study is to be pursued, and the Graduate Council.

J. Readmission

Students who are admitted to and enroll in the Graduate College, but who then fall to register for a period of 12 months or more, must apply for readmission. Their acceptance is dependent upon departmental approval for the session in which readmission is desired. Consideration of the application for readmission will be governed by the departmental and Graduate College admissions standards in effect at the time of reapplication.

Section II. Registration

A. Standard Schedule

Students registered in the Graduate College may register for no more than 15 semester hours of credit in graduate courses, in a schedule of mixed graduate and undergraduate courses, two hours of undergraduate credit may be substituted for one hour of graduate credit in no more than one semester hour of credit. The equivalence applies to courses in an academic department's course catalog.

B. 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. No semester hour of credit in the eight-week session will be considered full-time registration. (In the case of courses in the teacher constitute full-time registration. (In the summer semester, at least nine semester hours during a semester as a condition of their appointments.) One-quarter time and one-third time appointments are permitted to register for the maximum 15 semester hours per semester and eight semester hours during the eight-week summer session.

B. Courses Not Included in Total Registration

In addition to a full schedule, a graduate student may register for courses printed in the Schedule of Courses, even though the course may be carrying zero semester hours credit.

C. Changes in Announced Credit

Graduate students may not register for more credit in any course than that printed in the Schedule of Courses, but may register for less credit, or no credit, by permission of the instructor. The number of courses a graduate student may take for limited or no credit is subject to the consent of the advisor and the approval of the dean of the Graduate College.

D. Reduced Schedules for Teaching and Research Assistants and Other Appointment

1. One-half-time appointees may register for not more than 12 semester hours during a semester or five semester hours during the eight-week summer session.

2. Five-eighths-time appointees may register for not more than 10 semester hours during a semester or five semester hours during the eight-week summer session.

3. Two-thirds- and three-quarter-time appointees may register for not more than nine semester hours during a semester or five semester hours during the eight-week summer session.

4. Seven-eighths-time appointees may register for not more than seven semester hours during a semester or 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.

6. Retrospective Registration

The form of retrospective registration is permitted.

F. Registration for Part of a Session

A graduate student may register at any time during the semester or the eight-week summer session for not more than one semester hour of credit for each of the remaining weeks of classes (not including the examination period) in the term. The total registration may not exceed the 15 semester hours permitted for a semester and the eight semester hours permitted for the eight-week summer session. Registration after the last day of the third week of a semester or the third day of the second week of a summer session is permitted only in courses involving special projects, readings, individual study, thesis, or research, with the signed approval of the instructor; concerned and the Graduate College dean.

G. Extramural Registration

After admission to a departmental program in the Graduate College, registration for work done off campus is accepted for residence credit under the following circumstances:

1. Traveling Scholar Program of the Committee on Cooperative Education (See "Section III").

2. Research at approved locations under the direction of members of the

Graduate faculty of The University of Iowa.

3. Field work as part of a regularly scheduled course or research program.

4. Courses taught off campus by members of the graduate faculty (see "Section X.D" and "Section XII.C" for minimum semester hours required on campus for the master's and doctor's degrees).

5. Residence graduate credit from another 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 Regent's 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. Course won transferred from another institution.

2. Correspondence courses.

H. Extramural Fees and Privileges

Extramural courses may be counted as residence credit only if the student has been admitted to a departmental program in the Graduate College (see "Section I.C") and pays established fees. (See "Section III.E" for special fees applicable to postcomprehensive registration, which should not be confused with an annual registration fee for residence credit.)

I. Correspondence Courses

Correspondence study credits do not count as residence credit or the student for nine semester hours of graduate correspondence work can be applied toward an advanced degree. Such credit must be acceptable to the student's plan of study and must be earned after the student has enrolled in the Graduate College. In some instances, graduate-level correspondence study credits earned after a student has received a bachelor's degree but before enrolling in the Graduate College may be counted toward an advanced degree with the approval of the Graduate College dean upon recommendation of the major department. A graduate student may not register for correspondence courses without the approval of the executive of his or her major department and the Graduate College dean.

J. System of Course Numbers

Courses primarily for graduate students are numbered as shown in both the department. Courses open to and carrying credit for both graduate and undergraduate students are numbered from 100 to 199. Courses below 100 are not considered graduate credit. Graduate credit may not be earned for taking courses numbered below 100 by registering in such courses as readings.
special projects, or independent study having course numbers of 100 or above.

K. Auditing of Courses

Upon the request of the instructor and the advisor, the dean of the Graduate College, upon receipt of permission to graduate students to audit courses for zero credit, auditing is permitted only for a student who is currently registered.

L. Dropping of Courses

All graduate students who drop courses after the deadline date established by the dean of the Graduate College for each session and published by the registrar shall receive the grade of F unless the 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 Director of Counseling Services. If a student cancels her or his registration, or the registration is canceled by the Registrar, after the deadline date, the student must sign permission from the dean of the Graduate College before being permitted to reenroll.

Section IV. 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 outside of their home campus and extends opportunities, unique laboratory, and library collections.

B. Procedure

1. A CIC Traveling Scholar first must be recommended by his or her own graduate advisor, who will approach an appropriate faculty member at the possible host university or college to be notified of the student's request to visit a visiting arrangement.

2. After agreement by the student's advisor and the faculty member at the host institution, graduate dean at both institutions will be fully informed by the advisor and have the power to approve or disapprove.

3. A CIC Traveling Scholar will be registered at the home university and bear with the CIC Traveling Scholar at The University of Illinois.

4. Credit for the work taken will be recorded at the home university.

5. Those looking for additional information should inquire at the office of the Graduate College.

C. Conditions

CIC Traveling Scholars will normally be limited to two semesters or three quarters on another campus. Each university retains its full right to except or reject any student who wishes to study under its auspices.

Section IV. Academic Standing, Probation, and Dismissal

A. Nondismissal of Students

A student, except one on probation, shall be placed on probation if, after completing eight semester hours of graduate work, his or her cumulative grade-point average on graduate work with a grade-point average below 2.5. If, after completing eight semester hours of graduate work at a University, his or her grade-point average remains below 2.5, he or she must be placed on probation to rectify; otherwise, the student shall be returned to good standing.

B. Doctoral Students

A doctoral student in good standing 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 3.0. If, after completing eight semester hours of graduate work at the University, the student's cumulative grade-point average remains below the required level, the student shall be dropped from the graduate program and denied permission to rectify unless he or she applied and is accepted for a nondegree or certificate program. If, after the second eight semester hours, the cumulative grade-point average is at least 3.0, 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 a 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-mentioned requirements, departments may establish further requirements which then 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 available for students in the departmental office, and departments shall make 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 alter standards for a given program, the new regulations will not apply retroactively to the disenrollment of those already in the program. In addition to notifying students that they are subject to the revised 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 with all required courses acceptable 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 registration policies, departmental grade-point requirements, requirements for changing from one degree program to another within the department, especially from the master's to the Ph.D., departmental "probation and dismissal policies and procedures (see "E" following), and other matters 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 within 30 days. If the student is found not to be making satisfactory progress, a letter informing the student of this fact shall be provided a reasonable amount of time to meet the standards prior to departmental dismissal. If conditions such as student performance or probation are imposed, the department shall provide a written explanation of the status and its time limits. A student will not be permitted to register for failure to meet standards unless adverse action is notified in writing with reasons for the action provided. Such dismissal or probation must be in writing and in a formal evaluation. If a student judge the dismissal decision improper, the student has a right to a review. Each department shall establish procedures for handling such reviews. The procedures are to be approved by the Graduate College dean, and shall afford a fair and expedient review. A description of these procedures shall be included in the departmental regulations as described above. (See "Section IV.D."").
Section V. Credits

A. Transfer of Graduate Credit
Graduate work at other institutions will be entered on the student's permanent record by the registrar and a report of this action will be sent to the student, his or her major department, and the dean of the Graduate College. Credit for these courses toward an advanced degree at Iowa must have the approval of the major department and the dean of the Graduate College.

B. Residence Transfer Credit
After admission to a departmental program in the Graduate College, residence graduate credit from another Iowa Regents' university may be counted as residence credit at this institution, provided such credit is acceptable to the student's major department on the basis of the department's determination of its applicability toward the degree. (See "Sec. 4C." for minimum 900-hour requirements on campus for the major and doctoral degree.)

C. Reduction in Credit
For courses or seminars in independent study that do not meet the regular graduate requirements, a maximum of 30 semester-hour credits may be used toward the degree. Individual departments may have different policies for courses included in 300-hour requirements. (See "Sec. 4C." for minimum 900-hour requirements on campus for the major and doctoral degree.)

D. Graduate Credit for Veterans
Credit may be granted for studies pursued in the armed services and similar 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 the special needs of individual students. The value of each credit in satisfying requirements for a degree will be determined by the major department with the approval of the dean.

E. Cancellation of Registration and Proportional Credit for Students Entering Military Service
1. Students who leave within the first six weeks of the semester receive no credit.
2. Students who leave within the period of seven to nine weeks receive one-half credit.
3. Students who leave within the period of 10 to 12 weeks receive two-thirds credit.
4. Grade reports for the one-and-one-half-credit periods: (a) instructors report grades only as satisfactory or unsatisfactory; (b) credit is to be assigned on the basis of total registration minus thesis and seminar; (c) courses are to be counted toward specific degree requirements only after the student returns and then only with the approval of the dean.
5. Students who complete the twelfth week receive full credit.
6. Grade reports for the full credit period: (a) grades are to be reported only at the end of the semester; (b) credit is to be reported in specific courses.
7. If in any 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 zero credit may be assigned.

Section VI. Marking System

A. Marks Carrying Advanced Degree Credit
These are A, B, C, and D—satisfactory.

B. Marks Carrying No Credit for Advanced Degrees
These are D—poor, F—failed, I—Incomplete (W—withdrawn credit), N—unsatisfactory.

C. Audit
It is assigned when a student registered for a no credit course 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 semester cannot be completed because of illness, accident, or other circumstances beyond the student's control. In registrations for thesis, research, or independent study, the B/U grades may be applied. (See next paragraph, "E.") Students who receive the grade 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 else the grade becomes F, except that students with I's from the spring semester are exempt from re-registering during 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 in each session and printed in the academic calendar. Course reports may not be returned to incomplete; removal of an I is accomplished only through completion of the specific work for which the mark is given.

Grades of S and U may be used for registrations in thesis, research, 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, the Graduate Council 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 semester and must be reviewed by the Graduate Council before being granted for longer periods. The type of grading system to be used in the above cases should always be mutually understood by the instructor and student.

F. Grading Policies for S and U
S and U may be used for courses taken by a graduate student outside the major department of the student's graduate degree program provided that the instructor of the course and the student's graduate adviser approve the registration. Arrangements for B/U grading in these courses are accomplished by filing a card with appropriate signature in the Registrar's Office at the time of registration, or no later than the last day of the third week of the semester or the third day of the second summer session. No changes from letter grades to B/U grades in these courses will be allowed after these dates.

In the College of Education and the Graduate College in general, the traditional letter grades are used in this section; however, in certain instances, departments having major areas of administrative difference in students, differing degrees of effort may be defined as the Graduate Council to allow students majors in one area to register in courses in another area within the same department or program on an S/U basis. In these instances, S/U cards will be used as described in the preceding paragraph.

G. Computed Grade-Point Average
This is based only upon work graded A, B, C, D, and F. (A=4, B=3, C=2, D=1, F=0)
Section VII. Graduate Appointments

A. Scholarships

Scholarships may be 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; and (d) a satisfactory rate of progress in completing the program for the degree.

2. Preference will be given to candidates for the doctoral degree.

3. Recommendations for graduate scholarships may be made to the Graduate College by the appropriate department executive, director, or dean. A graduate scholarship may be awarded whether or not a student holds an assistantship. The amount of scholarship for the academic year may vary, but 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 an advanced student to complete his or her dissertation or creative project and take the degree. Other terms of the award will be established by the Graduate College and consultation with the Graduate Council.

C. Faculty Research Assistantships

Faculty research assistantships are awarded to qualified graduate students and serve two purposes: to provide research support for faculty members of the academic staff and to provide apprentice experience for graduate students who are in training in research. In no case may 30 hours of service per week be required of a half-time assistant. Other part-time service is subject to approval, and limited academic service is permitted (see "Section IV.C."). Appointments ordinarily are made for the nine-month academic year, but appointments may be made for other periods of time by special arrangement. Stipends vary with the qualifications of the appointee and the amount of services rendered. Faculty research assistantships appointed by the Graduate College pay their own fees. Graduate appointments beginning in August are usually made by the Graduate College. A letter of recommendation of the department, although applications may be considered, may be required. All stipulations should be made on the form provided by the Graduate College, and should be accompanied by recommendations and/or a letter summarizing the student's qualifications.

D. Graduate Assistantships

These assistantships have two purposes: assistance in the instructional program of the University and the preparation of future college teachers. In order to achieve both aims, academically superior graduate students who show exceptional promise as teachers are selected for graduate assistantships. All appointments are made by the dean of the appropriate college on recommendation of the department.

E. Eligibility for Scholarships, Fellowships, and Research Assistantships

Scholarships, fellowships, and faculty research assistantships on the Graduate College budget must be registered as regular students in good standing in order to hold such appointments. Appointments will be terminated when registration, and/or student status is terminated. In no instance may a student be promoted or tendered an appointment until after approval for admission 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 Associateships and Postdoctoral Fellowships

These provide for independent research. Appointment is made through the Office of the Vice President for Academic Affairs.

H. Credit

No academic credit is allowed for the teaching or research for which the assistant 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 teach assistantships, part-time employment on research programs, or various teaching or research assistantships. Inquiries should be directed 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 forecast 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 fall semester or one week after the start of the summer session in which the degree will be conferred. Students must have the application signed by a faculty advisor. Failure to file the application by the deadline will result in postponement of graduation to a subsequent session.

B. Enrollment in Final Session

The student must be enrolled during the session in which the degree is to be conferred, except as noted in the following paragraph. Students who must register for the session in which the degree is to be conferred but are away from the University campus during that session may meet 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 000:001:016's Final Registration at a fee equivalent to the "postcomprehensive registration." If such registration is appropriate. Registration in the postcomprehensive course will not satisfy this requirement.

Students completing all requirements (including the final examination and thesis deposit) for a graduate degree who are unable to complete their final session may receive their degrees in the following semester without additional registration.

Section X. Master's Degrees

A. Kinds of Degrees

Master's programs require 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 plan for a master's degree must be a plan of study approved by the adviser and the department chairman. The plan for study permitted by the Graduate College within the session in which the course is to be offered must be established by the Graduate College dean. The plan must 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 a graduate program in the College of Graduate Study, various forms of external registration may qualify toward fulfillment of the 24-hour residence requirement (see "Section II. External Registration") in addition to regular on-campus registration. However, at least eight semester hours on campus are required, except for those departmental programs which ensure sufficient interaction between the student 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 shall not count toward fulfillment of degree requirements. This rule may be waived by the dean in cases affected by military service.

F. Limit on Law, Medical, or Dental Degrees
Work taken by a student in the colleges of Dentalistry, Law, or Medicine while enrolled for a professional degree may be credited to a graduate program leading to a master's degree if it is taken after the student has earned a bachelor's degree in another field of study and has the consent of the professional college. 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 advisor and the major department. Work completed while the student is registered for an appropriate 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 both degrees separately, including two theses where a thesis is required for each, and two examinations, with a minimum combined total of 80 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. The thesis may be a scholarly study or an artistic production.

One copy of the thesis, in typewritten manuscript or print, must be presented to the Graduate College for a check for formal characteristics, not later than four weeks before the graduation date on 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 "K. Examining Committee.")

I. Master's Degree without Thesis
A master's degree without thesis, consisting of at least 30 semester hours of graduate study, may be awarded upon the completion of a 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 examination fail. The report of the final examination is due in the Graduate College not later than 48 hours after the date of the examination. If the department so recommends, a candidate who fails the examination may present himself or herself for reexamination on not more than the next regularly scheduled examination period in the same academic session, the examination may be repeated only once.

Upon recommendation of a department, the comprehensive examination for a doctoral degree may be substituted for the master's examination.

K. Examining Committee
The examining committee for the master's degree consists of at least three members of the faculty, appointed by the Dean of the Graduate College. Upon recommendation of the major department or program, at least two of whom are from the major department. If the examination committee is another department, one member of the committee must be from that department. Upon recommendation of the major department, the dean may appoint additional qualified persons (not necessarily members of the graduate faculty) to serve as voting members of the examining committee, and, at his or her discretion, the Graduate College dean may add a member to the committee.

Section XI. Two-Year Degrees
A. Master of Fine Arts Degree
This degree is awarded for creative work in the visual arts, dramatic art, music, or literature. It is designed for students preparing themselves professionally in such fields as painting, design, mural decoration, sculpture, playwriting, acting, producing, stage design, musical performances, 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 degree requires at least two years of residence credit in a graduate college. The student must complete at least 30 semester hours of graduate credit, at least 24 of which must qualify for residence credit at this University. A Master of Arts degree may be awarded while the student is working toward the Master of Fine Arts degree, but the student must meet all requirements 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 Fields," "E. Reduction of Old Credits," "H. Master's Degree with Thesis," "J. Final Examination," and "K. Examining Committee."

B. Specialist in Education Degree
This degree is granted upon completion by a student of two master's degrees with postbaccalaureate program designed for students preparing themselves professionally in such fields as teaching, administrative supervision, and special services.

Of the minimum of 80 semester hours required for the degree, at least 24 semester hours must be completed in residence at this University, of which 15 semester hours must be earned while the student is on campus within one 12-month period or during two summer sessions.

Twenty-eight of the 80 semester hours are prescribed in the area of specialization. The remaining hours are in cognate fields, supervised experience, and electives. Four semester hours of residence credit is required.

Courses successfully completed 10 or more years prior to the final examinations
Section XII. Doctor's Degrees

A. Character of Degree

The Graduate College awards two doctorates, the Doctor of Philosophy and the Doctor of Musical Arts. The doctorate is the highest degree awarded by the University. The Doctor of Philosophy degree indicates marked excellence in research or other creative work, and superior comprehension in the discipline. The Doctor of Musical Arts degree indicates marked excellence in performance and pedagogy.

B. Prerequisites

The candidate must present evidence of having completed a satisfactory amount of undergraduate work in the subject proposed for investigation or, in the case of deficiency, must register for prerequisite courses.

C. Residence Requirement

The doctorate is granted primarily on the basis of achievement 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 (nine semester hours minimum) in each of two semesters or (2) enrollment for a minimum of six semester hours in each of three semesters during which the student holds at least a one-third assistantship or fellowship.

D. Plan of Study

The development of a plan of study at the doctoral level is the responsibility of the student working together with his or her advisor. A formal plan of study must be approved by the departmental chair and submitted to the Graduate College for permission to conduct the comprehensive examination. The plan will provide a listing of all graduate courses taken which apply toward the degree and a listing of courses in progress or to be completed after the comprehensive examination.

E. Ad Hoc Interdisciplinary Programs

A student may 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 and 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 Law, Medical, or Dental Courses

Work taken by a student in the colleges of Dentistry, Law, or Medicine while enrolled for a professional degree may be credited to a graduate program leading to a doctoral degree if it is taken after the student has earned a bachelor's degree. The work completed in such a program is equivalent to that required for a bachelor's degree at The University of Iowa. The work accepted from the professional colleges must be directly related to the student's major field of study in the Graduate College, and the plan of study is the responsibility of the student's advisor and the major department. A student who is concurrently enrolled while registered for a professional degree in law, medicine, or dentistry will not be counted as part of the academic year which must be spent in residence as a doctoral student on the campus of the University of Iowa.

H. Joint Program for Master's and Doctoral Degrees

This program enables a student to continue their training through the doctoral degree, based on the joint programs proposed by 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 examinations for the master's degree end 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 do require competence in one or more foreign languages establish standards as to the extent and level of competence, as well

Department name: GRADUATE COLLEGE

Page number: 332

Document type: PAPER
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 requiring completion of requirements to the registrar for entering on the student's record.

Specifications of departmental requirements in foreign languages are listed in the Graduate College office and may be procured upon the initiative of the department.

J. Comprehensive Examination

The candidate must pass a comprehensive examination, consisting of written or oral tests, and pass both at the discretion of the major department. Admission to the comprehensive examination is granted upon the recommendation of the major department, the filing of the plan of study, and the approval of the dean of the Graduate College. A student must be registered in the Graduate College at the time of the comprehensive examination, which must be passed not later than the session prior to the session of graduation. This examination, administered only on campus, is intended to be an inclusive evaluation of the candidate's mastery of the major and related fields of study, including the tools of research in which competence has been certified.

The comprehensive examination is not a deferred qualifying examination. It is intended to be an inclusive examination of the extent to which the student has mastered the subject or subjects on the plan of study. The comprehensive examination will be given the first week of the term in which the candidate will defend his dissertation. The comprehensive examination and the final examination, which is taken to determine the defense of the thesis and related subjects, are the two major examinations for the doctoral degree.

The comprehensive examination will be evaluated by the committee and reported as satisfactory, satisfactory with reservations, or unsatisfactory to the Graduate College on or within 14 days after the completion of the examination. Two "unsatisfactory" votes will make the committee report unsatisfactory.

In the event of a report of unsatisfactory, the exact stipulations of the committee shall be recorded with the report form. If the stipulations involve more than one of the particular area of study, the statement should be specific in defining the area, and should be outlined by means of other procedures, and in specifying the time and manner of the required examination. The candidate will not be admitted to the final oral examination until such stipulations have been satisfied. The executive officer of the major department will promptly send a written report to the Graduate College giving the 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 not sooner than four months after the first examination. The examination may be repeated only once, at the option of the department.

K. Postcomprehensive Registration

The student is required to register each semester after passing the comprehensive examination until the degree is awarded. If a student fails to register, the student may be readmitted to candidacy until the student has submitted an application which has been approved by the department's executive officer, the departmental executive, and the Graduate College dean.

At registrations should accurately reflect the amount and type of work undertaken, the use of University facilities, and the amount of consultation with the faculty. The student should register for the courses, research, and thesis necessary to complete the plan of study.

When the registrations required for the plan of study have been completed, the student may meet the continuing registration requirement by registering for 690/900 in the postcomprehensive Registration and paying a special minimum fee for any semester in which the department (i.e., department chair or director of graduate studies) and the student's advisor determine that the student is neither making significant use of University facilities (except library privileges) nor partaking of consultation with the faculty. It is understood that no registration for a summer session is required when the student takes no use of University resources, unless the student is taking a degree at the end of that session or unless enrollment is required by the department.

L. Dissertation for the Doctorate

A copy of the dissertation must be presented at the offices of the Graduate College not later than four weeks before the graduation date on which the degree is to be conferred and two copies deposited within 10 days before graduation.

Regulations regarding preparation of the dissertation copy shall be promulgated by the dean of the Graduate College. Dissertations will be microfilmed and thus made available on a permanent basis. As abstract of the dissertation, not to exceed 300 words of text, is to be deposited with the dissertation. The abstract must be approved and signed by the dissertation 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 nonscript form (e.g., painting, stage performance in music) the librarian will help the student and faculty advisor work out an appropriate method of preparing the work, if such help is needed. Once the accompanying manuscript is accepted, it is treated the same as any other thesis.

Written dissertations shall be made available to all members of the examining committee not later than two weeks before the date of the examination.

II. Dissertation Fee

A nonrefundable dissertation fee is charged each candidate to cover the cost of processing the dissertation and abstract.

III. Final Examination

The work for the degree culminates in a final oral examination administered on campus. This examination should include:

1) critical inquiry into the purposes, methods, and results of the Investigation—not a mere reproduction of the procedures followed—and
2) intensive questioning on areas of knowledge constituting the immediate context of the investigation.

The final examination must be passed before the student may be awarded the degree. The meeting of the dissertation at the Graduate College; however, a student must pass the final examination no later than five years after the dissertation 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 qualifying examination. (See "III. Comprehensive Examination.")

Final examinations for the doctorate are open to the public. Members of the faculty of the Graduate College are especially invited to attend and are subject to the approval of the chair, to participate in the examination.

The report of the final examination is due in the Graduate College office not later than 48 hours after the examination. The final examination will be considered as passing or unsatisfactory. Two unsatisfactory votes will make the candidate 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 department.
Examinating Committees
The comprehensive and final examinations are conducted by committees of no fewer than five members of the graduate faculty appointed by the Graduate College dean upon recommendation of the major department, except that departments may request the dean's permission to 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 examinations. 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
- 020-000 Ph.D. Precomprehensive Examination 0 s.h.
- 030-001 Master's Final Examination 0 s.h.
- 040-000 CGS Scholar 0 s.h.
College of Law

Program Objectives

The overriding objective of formal legal education is to establish a solid foundation for the pursuit of professional growth. The educational elements necessary to build this foundation are varied. Thorough familiarity with the substance or legal principles and with the operation of legal institutions are important components, etc. The University of Iowa program places an equal emphasis on the development of fundamental lawyers' 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 participation in the learning process and creates regular opportunities for individuals and small groups to confront challenging teachers who genuinely are interested in each student's professional development.

While many law schools rely heavily upon graduate assistants or adjunct instructors to teach lawyers' skills, The University of Iowa is virtually unique in the extent of its commitment of full-time faculty to the development of professional skills in a small-group, individualized instruction format.

The University of Iowa College of Law confers 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 course work, and complete all required courses, achieve a cumulative grade point average of 60, 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 education when they are devoting substantially all of their time to educational pursuits. For this reason, students are expected to pursue their law studies on a full-time basis. This policy coincides with the accreditation 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. Students who believe they may be unable to attend on a full-time basis should contact the dean's office before registering for classes.

Options for Full-Time Study

The college offers two starting classes to entering students: late May (at the beginning of the summer semester) or late August (at the beginning of the fall semester). Most students elect to enter law school in the fall and expect to graduate in May of their third year of study; these students also may attend summer school at any point during their careers. An entering class of up to 49 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 fall semester, 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 1983 may graduate in August 1986. 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 less than 12 hours per semester or 13 hours in summer school without permission of the dean.

Summer Session

There are two three-week sessions of five or one-half weeks during which six to eight upperclassmen and three to four first-year courses regularly 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 is 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 analysis, argumentation, research, and writing.
in the fall semester (or summer for accelerated students), the entering class is divided into sections of approximately 30 students. In the spring (or fall for accelerated students), each section contains approximately 20 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 designed to test their understanding of various subjects, and the program is evaluated in terms of the scores they achieve on tests. Throughout their first year at the college, students are encouraged to ask questions in class and to identify any questions or problems that may arise. The academic advisor provides a list of faculty members who are available to help with academic problems.

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 on course work or writing and research opportunities in particular areas of interest (e.g., through specialized courses and seminars), and to expand their training in oral and written advocacy skills. In interviewing and counseling, and in litigation, few courses are required in the second and third years, but all students must take 9:100 Advocacy I in the second year, and before graduating must take 9:232 Constitutional Law II and an upper-class small section course. The latter requirement assures students the opportunity to develop advocacy skills in a small class (usually 30 students) in a variety of substantive areas in addition to the substantive material, they 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 through participation in the construction of the 9:120 Appellate Advocacy I and the upper-class small section course. He or she can earn the remaining three credits through any combination of appropriate writing activities that carry writing credit, including seminar papers, independent research papers, Law Review, Journal of Corporate Law, 9:140-411 Client Counseling, 9:142 Most Court Board, and 9:121 Appellate Advocacy II.

Legal Clinic

Students who have completed one-half of the work toward their J.D. degree are eligible to participate in the College of Law's Legal Clinic Program, which offers faculty-advised 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 at 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.

Student Life

There are currently several student organizations at the college, three co- operating programs, and various faculty and student-produced scholarly journals. The college operates a placement office to assist students 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 commencing work in the College of Law. The College of Law has a robust and diverse body of full-time law faculty and a faculty of part-time faculty. All applicants for admission must have completed a full-time college course of study and a degree from a fully accredited law school. The College of Law may be called upon to perform the same 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. In the absence of faculty advisors, each student should develop an undergraduate program which explores and develops that student's particular intellectual interests. There are three basic objectives, however, as recommended by a committee of the Association of American Law Schools which currently form the mission of the College of Law. The college should keep in mind in planning an undergraduate course of study: education for comprehension and expression in work; education for a greater understanding of human institutions and values; and education for greater power in thinking. That committee strongly emphasized that understanding for students for a full life through liberal education is far more important than education directed too pointlessly 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: Director of Admissions, College of Law, The University of Iowa, Iowa City, Iowa 52242. A 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, Carson 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 (LSDAS), Box 2000, New York, NY 10086-440. The College of Law must receive the applicant's LSDAS report prior to March 1 deadline for submission of applications.

An LSDAS registration packet contains Law School Application Matching Forms. To preserve the right to privacy, ETS has agreed not to release LSDAS reports to any school that does not furnish ETS with a Law School Application Matching Form.

The University of Iowa cannot process an application without the Law School Application Matching Form. Therefore, please ensure you complete the form with the application. Otherwise, the processing of the application will be delayed until the form is received.

Law School Admission Test

Each applicant for admission must take the Law School Admission Test (LSAT) administered by the Educational Testing Service and Law School Admission Testing Service, Box 2000, New York, NY 10086-440, and have his or her test results 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 throughout 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 November. 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.

Applicants who wish to take the test in February 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 $500 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 is due within two weeks after action is taken on the financial aid application. For those who enroll, the deposit is credited toward the student's tuition. University bill. An applicant who fails to make the deposit within the time specified forfeits his or her place in the entering class.

Evaluation Process

For a more detailed description of the admissions evaluation process, please consult the college's bulletin which is available from the Admissions Office of the College of Law.

Admission to the Iowa Bar

A recent rule adopted by the Iowa Supreme Court requires all law students who intend to apply for admission to the Iowa Bar to register that intention with the court no more than 90 days after beginning law school. Details are available from the dean's office of the College of Law upon registration as a student is the college or from the clerk of the Iowa Supreme Court.

Courses

For descriptions of these courses, consult the college's bulletin, which is available from the Admissions Office at the College of Law.

911 Lawrence Legal Methods 3 s.h.
91104 Civil Procedure 3 s.h.
91116 Constitutional Law 3 s.h.
91106 Contracts and Sales 3 s.h.
91106 Criminal Justice I 3 s.h.
91108 Criminal Justice II 3 s.h.
91126 Client Representation 3 s.h.
91122 Property I 3 s.h.
91107 Real Estate Law 3 s.h.
Same as 208 3 s.h.
91128 Insurance Planning 3-4 s.h.
91191 General in Contemporary Society 3 s.h.
Same as 44 181, 12114, 687 7213
91107 Criminal Law and Medical Care 3 s.h.
Same as 92 506
91106 Juvenile Rights in the Work Community and the Politics 3 s.h.
91106 Introduction to International Law 3 s.h.
Same as 112
91103 Advanced Civil Procedure 3 s.h.
91103 Administrations of Estates and Trusts 3 s.h.
91106 Administrations Law 3 s.h.
91106 Admirality Law 1 s.h.
91106 Advanced Criminal Procedure 3 s.h.
91107 Admirality Law Problems 2-4 s.h.
91108 Admiralty Law 3 s.h.
91106 Midwest Regional Court Competition 1 s.h.
91107 Appellate Advocacy I 3 s.h.
91107 Appellate Advocacy II 1 s.h.
91107 National Moot Court Competition 1 s.h.
91107 Jessup International Moot Court Competition 1 s.h.
91104 Labor Law Competition 1 s.h.
91106 Childlire and the Law 2-3 s.h.
91106 Business Planning 4 s.h.
91106 Arbitration Law and Practice 3 s.h.
91106 Constitutional Litigation 3 s.h.
91106 Commercial Transactions 3-4 s.h.
91106 Cooperative Law 3 s.h.
91106 Contract Law 3 s.h.
91106 Criminal Law 3 s.h.
91106 Contracts Project 3 s.h.
91106 Corporations I 3 s.h.
91106 Corporations II 3 s.h.
91106 Federal Income Tax II 3 s.h.
91106 Creditors' and Bondholders' Rights 3 s.h.
91106 Corporation III 3 s.h.
91106 Economic Analysis for Lawyers 3 s.h.
91106 Employment Discrimination 3 s.h.
91106 Education Law 3 s.h.
91106 Environmental Law 3 s.h.
91106 Estate Planning Problems 3 s.h.
91106 Estate Planning 3 s.h.
91106 Family Law 3 s.h.
91106 Family Estate Planning 3 s.h.
91106 Federal Income Taxation 3 s.h.
91106 Federal Policy Analysis 3 s.h.
91106 Federal Jurisdiction 3 s.h.
91106 Tax Due & Administration 3 s.h.
91106 Tax Due & Administration 3 s.h.
91106 Tax Due & Administration 3 s.h.
91106 International Organizations 3 s.h.
91106 International Economic Relations 3 s.h.
91106 Jurisprudence 3 s.h.
91106 Juvenile Justice 3 s.h.
91106 Labor Law 3 s.h.

337
Title 9. Title 9: Student Rights and Responsibilities Policy

Section 9.1201: Discrimination in Employment 2 a.h.
Section 9.1202: Law, Language, and Ethics 2 a.h.
Section 9.1204: Corporate Accounting 3-4 a.h.
Section 9.1205: Law and Psychology 3 a.h.
Section 9.1206: Legal Practicum 3 a.h.
Section 9.1209: Labor Arbitration 3 a.h.
Section 9.1210: Mass Communication Law 2 a.h.
Section 9.1211: Native American Law 2 a.h.
Section 9.1212: Regulation and Mediation 3-4 a.h.
Section 9.1213: Natural Resource Law 3 a.h.
Section 9.1215: Property Law 3 a.h.
Section 9.1217: Post-Conviction Remedies 2-3 a.h.
Section 9.1219: Products Liability 2 a.h.
Section 9.1220: Professional Liability 2 a.h.
Section 9.1221: Property II 2 a.h.
Section 9.1223: Regulated Industries 3 a.h.
Section 9.1224: Remedies 3-4 a.h.
Section 9.1225: Securities Regulation 3 a.h.
Section 9.1226: Sex Discrimination Law 2 a.h.
Section 9.1227: Sexual Harassment 2-3 a.h.
Section 9.1228: Selected Real Estate Problems 2 a.h.
Section 9.1229: Social Welfare 3 a.h.
Section 9.1230: State and Local Government 3 a.h.
Section 9.1231: Sentencing and Corrections 1-2 a.h.
Section 9.1232: Statutory Authority 1-2 a.h.
Section 9.1233: Business Torts 2 a.h.
Section 9.1234: Torts I 3-4 a.h.
Section 9.1235: Torts II 2 a.h.
Section 9.1236: Torts III 2 a.h.
Section 9.1237: Torts IV 2-3 a.h.
Section 9.1238: Trade Regulation 3 a.h.
Section 9.1239: Transnational Law 2 a.h.
Section 9.1240: Tort Advocacy 2 a.h.
Section 9.1241: Trial Advocacy Board 1-2 a.h.
Section 9.1242: Trusts and Estates 3 a.h.
Section 9.1243: Law Review 2 a.h.
Section 9.1245: Mock Court Board 1-2 a.h.
Section 9.1246: Legislative Workshop 2 a.h.
Section 9.1247: Legal Aid Clinic 2 a.h.
Section 9.1248: Labor Assistance Clinic 2 a.h.
Section 9.1249: Civilian Governor 2 a.h.
Section 9.1250: Legal Law Seminar 1-2 a.h.
Section 9.1251: Civil Law Seminar 2 a.h.
Section 9.1252: Advocacy Problems I in the Uniform Commercial Code 2 a.h.
Section 9.1253: Criminal Law Seminar 2 a.h.
Section 9.1254: Advocacy Problems in the Bankruptcy Code 2 a.h.
Section 9.1255: Children's Law Seminar 2 a.h.
College of Medicine

The College of Medicine, as an integral part of the University, contributes to the educational programs of several thousand students and, in its only medical school in the health colleges of Dentistry, Medicine, Nursing, and Pharmacy but also in the health 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 "refresher" 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 physicians assistants, medical technology, physical therapists, and nuclear medicine technologists.

Medical and associated medical sciences students have several opportunities to gain first-hand experience in physicians' offices and community hospitals. For medical graduates, the College of Medicine offers family practice residency programs at 18 community hospitals in eight counties throughout the state. The college also promotes and sponsors experimental programs that demonstrate methods of organizing health services at the local level. Accredited by the Liaison Committee on Medical Education of the American Medical Association and the National Institute of Health, the College of Medicine meets the requirements of 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 research and teaching is not separate 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 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 program 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

The Institute of Arthritis, Metabolism and Digestive Diseases.

Center for Research on Psychological Disorders of Children

The Center for Research on Psychological Disorders of Children 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.

Cancer Center

A Cancer Center was established in 1980 to coordinate the activities of the faculty and staff of the University in research, educational, and demonstration programs related to all aspects of cancer.

Educational and Patient Care Facilities

First and second year classes are taught in the Bowers Sciences and Medical Laboratories buildings.

A Health Sciences Library is at the core of the medical campus.

Students acquire clinical experience in the 1,065-bed University Hospitals and Clinics complex. In the adjacent 332-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 41-member clinical staff for University Hospitals and Clinics whose 16 clinical services are directed by the heads of the corresponding academic departments in those colleges. These faculty members also provide instruction for the 534 resident physicians and dentists who comprise the house staff of University Hospitals and Clinics, which provides facilities for teaching all medical specialties for residents in all such specialties, and for fellowships in a number of subspecialties.

University Hospitals and Clinics serve as a tertiary care center for the state of Iowa and portions of adjoining states, with some 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 supplies for the purchase, maintenance, and record-keeping for wide variety of species.

The biomedical facility provides specialized electronic design, construction, and repair services.

The Office of Consultation and Research in Medical Education is composed of educators and media specialists who serve the faculty, staff, and administration. The unit provides educational consultation, initiates and cooperates in educational research endeavors, and conducts teacher education activities.

The medical instrument facility designs and fabricates scientific equipment, providing precision service services. The medical graphics, photography, and television sections offer consultation, design, and production services in their various art forms. The spectrum of composition is greatly expanded by Genigraphics, 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 protein structures are conducted in a facility containing ultracentrifugation, amino acid analyses, and protein sequencer equipment. A facility for mass spectrometry provides service for structural studies of important biological molecules and their analysis by computer interface with a gas chromatograph.

Doctor of Medicine

The University of Iowa College of Medicine accepts 175 freshmen students 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 renewed continually to reflect the changing needs of the new physician and of society.

Basic Medical Sciences

The first three semesters present core of sciences basic to the study of medicine:

First Semester

99 105 Biochemistry for Medical Students is centered around a series of clinical situations. The language of this discipline is presented in the context of problems the physician will meet. In the small group discussions that follow the clinical cases, the student starts to use various problem solving approaches.

80 103 Gross Human Anatomy for Medical Students includes embryology,
fully relevant areas of anatomical radiology, and surface anatomy with clinical correlation. A comprehensive review of the detection of the human body is undertaken and an evaluation of the conditions of the human body is stressed.

60:105 General Histology for Medical Students provides a course of study for the core information concerning cellular and tissue structure and function needed for the work to be accomplished in physiology and pathology.

118:102 Human Dimensions in Medicine is designed to introduce medical students to the importance of communication in the practice of medicine. This course provides students with small-group experience through which they learn about and improve their ability to communicate sensitively with patients and colleagues.

63:110 Biostatistics is a course in the work of the semester. It utilizes a self-paced study of statistical principles and their application to the biological and medical sciences.

Second Semester

72:212 Medical Physiology offers the student an understanding of the processes of the organism from the perspective of the cell. The course provides a basis for understanding the function of the organism. Much of the material of this course is presented from a cellular point of view. In small discussion groups, slides with corresponding replacement laboratory exercises, the students practice the laboratory techniques and the skills required to analyze the physiologic mechanisms at work in the clinical material. The demonstration lab is designed to be used to good advantage.

61:103 Medical Microbiology includes instruction in the growth and identification of microorganisms. The course includes a survey of the role of microorganisms in human disease. The laboratory work continues to play an important role in the course.

69:201 General Pathology for Medical Students is correlated with microbiology in this semester to increase the efficiency of the learning process. Much of pathology at this level is self-directed, requiring the student to "test out" of each segment as it is completed. Clinical problem solving and discussion periods have replaced laboratory in this course. A section in pathology outlines clinical manifestations of infectious diseases.

Third Semester

69:202 Systemic Pathology for Medical Students, in which the principles given in the first year are applied, is presented in an organ approach. Student-centered learning techniques are used to make the student a participant in the learning process.

60:148 MCAT Preparation presents the structure of the nervous system.

Much of the material is available for self-study and small-group study in the classroom.

65:108 Community Health presents fundamentals to help prepare the student in some of the social, economic, and public health aspects of medical practice.

71:105 Pharmacology for Health Sciences. Medical bridge the clinical and basic sciences and provides the students with principles that must be understood to describe the proper actions of drugs in the patient.

Several elective courses are available to students during the third semester. These courses carry two 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 Norms, and Social for Health Professionals.

Introduction to Clinical Medicine

A major interdisciplinary course, 50:111 Introduction to Clinical Medicine, fits 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 focus of the semester is to introduce the student as a person and to familiarize him with the role of the physician. This course is an initial exposure to clinical medicine and is an outline of the medical system, and on the role of the doctor. It also provides an opportunity to observe the role of the medical student in patient care on the patient care. It also provides an opportunity to observe the role of the medical student in patient care.

Clinical Clerkships

The third year includes the required clinical clerkships and presents each student with opportunities to work with physicians of almost all disciplines as they care for their patients. Students will spend nine weeks in internal medicine, six weeks in surgery, pediatrics, psychiatry, and obstetrics and gynecology; and two weeks in anesthesiology, dermatology, neurology, epidemiology, orthopedics, and family practice. Students spend most of this time in Iowa City.

The clinical clerkship year is the most critical period of time in medical education. The student takes on the role of a physician to learn the first-hand complexity of medical science when viewed at the bedside, and to understand the responsibilities 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 medical experiences, ranging from advanced courses in specialty areas to community-based clerkships in primary care.

Financial Aid

The College of Medicine provides financial assistance on the basis of demonstrated need. Each aid is in the form of loans. The Health Professions Student Loan and Guaranteed Student Loan are federally funded or sponsored programs. The Medical Education Assistance Program, National Health Service Corps, and State Loan Program are College of Medicine programs. The State Loan program provides assistance to students who demonstrate exceptional need.

In certain situations, short-term emergency loans may be obtained through the college.

Information and advising on financial aid can be obtained through the Office of Student Services, College of Medicine.

Educational Opportunities Program

The Educational Opportunities Program provides financial aid 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 nonprofit, case-filed application service for applicants to U.S. medical schools. Preliminary applications are due by December 15. The deadline for submission of the class for which
Candidates must be able to learn to analyze, synthesize, solve problems, and reason diagnostic and therapeutic judgments; have sufficient use of the senses of vision and hearing and the semantic analysis necessary to perform a physical examination; be able to perform palpation, auscultation, and percussion; be able to relate reasonably to patients and establish effective, professional relationships with patients; be expected to be able to communicate the results of the examination to the patient and their colleagues with accuracy, clarity, and efficiency; be expected to be able to learn and perform routine laboratory tests and diagnostic procedures; be expected to be able to display good judgment in the assessment and treatment of patients; be able to respond with prompt, quick, and appropriate action in emergency situations; be expected to be able to accept criticism and respond by appropriate modification of behavior; and be expected to possess the perseverance, stamina, and academic consistency to complete the medical school curriculum and enter the independent practice of medicine. Applicants who may not meet these standards are encouraged to contact the coordinator of admissions.

If the specific requirements for admission do not ensure admission to the College of Medicine from the applicants meeting the requirements, the admissions committee of the College of Medicine selects those who appear to be the best qualified for the study and practice of medicine. Applicants who have completed the baccalaureate degree and required courses five or more years before seeking admission to the College of Medicine are considered by the admissions committee only under exceptional circumstances.

To be considered for admission, an applicant must have obtained a grade-point average of at least 3.5 (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 the College of Medicine by August 1 of the year preceding the one for which the applicant is seeking admission, and the decision is made by October 1.

Applications 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 Testing 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. Request for interviews should normally be made before January 1. The specific purpose of the interview should be clearly stated. Applicants exonerated 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.

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 chest x-ray (or chest x-ray if chest x-ray). 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 promoted from The University of Iowa College of Medicine has adequate skills, knowledge, and judgment to assume the responsibility of a medical doctor. To perform its duties, the committee depends upon the cooperation of faculty, students, and administration.

Composition of Promotions Committee

The Promotions Committee consists of six members and the Associate Dean for Medical Education. (without vote). There are five faculty members, one of whom is designated by the dean to serve as chair. Two are from two basic science departments,
and three are from the clinical departments. There is a medical student member from either the junior or senior class. The Dean of the College of Medicine makes faculty appointments to the committee after consulting with the Executive Committee, and appoints the student member after consulting with the Medical Student Council and the chair of the committee.

**Regulations and Procedures**

In general, promotion from one grading period to the next is contingent upon the satisfactory completion of the courses of each grading period. Continued enrollment of a student who has not satisfactorily completed courses in a preceding grading period may be recommended by the promotion committees, provided that an appropriate tutorial program is designed for that student. Each student must demonstrate proficiency in each required course.

Evaluation of student progress in basic science semesters is based on such examinations or other tests as are determined by each department or course. Evaluation of student progress in clinical semesters is based on clinical skills and competency and on such examinations or oral tests as are established by each department or course.

Scholastic performance in the first three years is based upon the courses taken in F, P, F, F, and I. In the executive secession sequence, P, F, and I will be used. The letter P indicates satisfactory achievement at the passing level. The letter F indicates "honors." This indicates achievement at an exceptionally high level. The letter F indicates work below the passing level. The letter I is used when for good reason the student has not completed the work of a course.

The promotion committee meets at least three times a semester to consider the completion of each academic semester and to ascertain the reasons for reenrollment requested by the associate dean for medical student affairs.

The committee reviews with the course directors the records of all students who have received a grade of F or I during the previous grading period.

The committee reviews the record of any student presented by the course directors or the associate dean for medical student affairs as doing unsatisfactory work. The committee considers other business or procedures as deemed necessary to perform its duties as set forth in this charge. The promotion 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 part of the curriculum; allowing the student to continue at the college but on a decelerated schedule. Students having unsatisfactory grades of failure or incomplete will normally be placed on academic probation. Students who are in a probationary status may be considered for dismissal should they experience further academic failures.

The promotion committees present all recommendations for the awarding of the degree, Doctor of Medicine, to the joint meeting of the medical council and executive committee, which acts on the recommendations for the faculty.

The College of Medicine believes that its faculty and students should be up to general fitness requirements, and that those stated in the principles of medical ethics of the American Medical Association. (Modified Student Handbook).

**Relationship to Course Directors Committees**

The course directors committees will provide guidance and counseling for students and will be a resource for and provide advice to the promotion committee.

**Appeals**

Students desiring to appeal promotion decisions must submit such appeals in writing to the dean of the College of Medicine within two weeks after the date of written notification of the decision. All appeals are heard and decisions rendered by the medical council and executive committee meeting in joint session. Students may request an opportunity to appear personally before the joint session to make a statement and to answer questions.

**Leave of Absence**

The College of Medicine believes that certain students may profitably be granted a leave of absence from the college for specified periods of time. A leave of absence should be requested from the dean's office. It will be granted at the discretion of the dean. Any student who is absent without leave for a major section of a clinical clerkship may receive, at the discretion of the department, a grade of F.

**Withdrawal from the College**

A student withdraws 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 readmission.

The faculty is authorized to reject continous or further registration to any student if it believes that he or she has not lived up to the expected general fitness requirements for entering the medical profession, 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.

**Informal Procedures**

When a dispute arises between a student and a faculty member or department, there is often confusion as to the best way to resolve the problem. The medical school has a formal procedure as stated in "Promotion Policies and Procedures" and an informal procedure as outlined below.

In the College of Medicine, students with problems or complaints should attempt first to resolve the issue with the faculty member with whom there is a problem. Lacking a satisfactory outcome, the student should then turn to the department chairperson. If satisfaction is still not obtained, the student should bring the complaint to the Associate Dean for Student Affairs of the College of Medicine. This informal discussion would not necessarily lead to involvement of the dean or the medical council. If it is determined that the student feels he or she 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. Students are encouraged to make full use of the counseling services available.
teaching in these laboratory sections under faculty supervision. Students ordinarily require four to five full-term study to complete the doctorate in anthesis.

During the first year, the student chooses a research area and becomes affiliated with a faculty member whose research is in that area. The research program strengthens currently are in endocrinology and reproduction, neurobiology, and the cardiovascular system. By the end of the second year, the student defines a research problem with his or her major advisor, formulates a research proposal, 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 of graduate school are devoted heavily to research. During this period, the student may select advanced graduate courses work 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 be a graduate of an accredited college or university, including college mathematics, one year of college physics, general biology, general physics, and upper level courses in biology. At admission, requirements, see the "Graduate Studies" 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 Bio Science Advanced Test. This is particularly useful to the advancement of student graduate programs. 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 Bio Science Advanced Test. This is particularly useful to the advancement of student graduate programs. The catalog.

The department occupies over 35,000 square feet in the Rowan Science Building in the health sciences section of the University campus. These spacious house modern facilities and well-equipped laboratories. The most modern instrumentation is available, including three high-resolution electron microscopes, electron tip, spectrophotometer, cryostat, and an automated gamma counting system. Research is problem-oriented, rather than discipline-dependent, and is primarily in the theme areas mentioned in the previous section.

Courses
02.00 Human Anatomy
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
03.00 Human Morphology
Introduction to the study of animal forms, embryos, and their development. Prerequisite: 01.00 or equivalent.
05.00 Human Gross Anatomy
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
06.00 Human Cranio-Facial Anatomy
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
07.00 Human Gross Anatomy for Dental Students
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
08.00 Human Gross Anatomy for Medical Students
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
10.00 General Histology for Medical Students
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
11.00 General Histology for Medical Students
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
12.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
13.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
14.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
15.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
16.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
17.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
18.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
19.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
20.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
21.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
22.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
23.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
24.00 Human Anatomy and Physiology
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25.00 Human Anatomy and Physiology
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26.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
27.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
28.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
29.00 Human Anatomy and Physiology
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30.00 Human Anatomy and Physiology
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31.00 Human Anatomy and Physiology
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32.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
33.00 Human Anatomy and Physiology
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34.00 Human Anatomy and Physiology
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35.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
36.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
37.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
38.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
39.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
40.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
41.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
42.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
43.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
44.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
45.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
46.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
47.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
48.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
49.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
50.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
51.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
52.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
53.00 Human Anatomy and Physiology
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Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
56.00 Human Anatomy and Physiology
Lecture and laboratory techniques in human anatomy. Open to nursing and medical hygiene students. Prerequisite: 301 or equivalent.
Anesthesia

Acting Department Head: Peter J. Nelson
Faculty: professors Surin Sehgal, Mohamed Showkat, Peter J. Nelson, John Davids, Robb Shanes, Martin Robin
associate professors Benjamin Bryant, Richard S. Gint, John S. Mahoney
instructor assistant professor Cyril Timm

The department introduces the second-year medical student to anesthesia as a specialty, surveys the techniques of anesthesia, including pre-operative and post-operative care, induced anesthesia, airway management, and the care of the post-operative patient; and offers the fourth-year student more intensive study in any or all phases of the department. Diverse clinical experiences, seminars and teaching conferences, and ongoing research activities develop in the postgraduate student, or resident, the knowledge and skills required of a specialist in anesthesia.

Courses

1502 Clinical Anesthesia

An introduction and practical experience in various forms of anesthesia for surgical procedures, team techniques of general, obstetric, and pediatric anesthesia, and maintenance of the medical and surgical patient's anesthesia. Required reading: "Anesthesia and the Maintenance of Life" by R.G. Steen. Offered in conjunction with maintenance skills: management of complications and post-operative care, anesthesia in obstetrics, pharmacology and respiratory and cardiovascular function, and various methods of treatment: course includes clinical anesthesia seminars, medical and nutrition and health courses.

1511 Inhalers

An introduction and practical experience in various forms of anesthesia for surgical procedures, team techniques of general, obstetric, and pediatric anesthesia, and maintenance of the medical and surgical patient's anesthesia. Required reading: "Anesthesia and the Maintenance of Life" by R.G. Steen. Offered in conjunction with maintenance skills: management of complications and post-operative care, anesthesia in obstetrics, pharmacology and respiratory and cardiovascular function, and various methods of treatment: course includes clinical anesthesia seminars, medical and nutrition and health courses.

Division of Associated Medical Sciences

Division head: Ray Montgomery

The Division of Associated Medical Sciences provides for coordination of professional programs that presently include the training of medical technologists, nuclear medicine technologists, physical therapists, and physicians assistants. Flexible undergraduate programs are established to prepare students for entry into these professional areas. The student is easily enrolled initially in the College of Liberal Arts and is assigned a faculty advisor from the division.

Although each program in the division has its own admission requirements, the first two years of undergraduate study are similar. Each program requires a foundation in biology, chemistry, and mathematics; physics, computer science, and psychology are also required by some programs and are highly recommended by others. The student should carefully plan his or her study program so that conflicts in flexibility required courses do not occur. It is imperative that the student consult with the appropriate program advisor to assure the proper sequencing of courses.

This is a typical curriculum for undergraduate students with options being exercised after consultation with program advisors: Programs are abbreviated as follows: MT—Medical Technology, NMT—Nuclear Medicine Technology, PA—Physician Assistant, PT—Physical Therapy.

Freshman Year

First Semester

10:10 Rhetoric

4 s.h.

10:11 Health Society

4 s.h.

10:12 Principles of Chemistry I

3 s.h.

220:11 Mathematics for the Biological Sciences

4 s.h.

Total

15 s.h.

Second Semester

10:20 Rhetoric

4 s.h.

10:21 Health Society

4 s.h.

10:22 Principles of Chemistry II

3 s.h.

411:6 Principles of Chemistry

3 s.h.

210:15 Introduction to Clinical Psychology

3 s.h.

Total

16-18 s.h.

Sophomore Year

First Semester

10:21 Health Society

3 s.h.

10:22 Principles of Organic Chemistry I (MT)

3 s.h.

210:12 College Physics (NMT)

4 s.h.

210:15 Introduction to Clinical Psychology

3 s.h.

210:16 Cell Physiology

2 s.h.

Total

14-16 s.h.

Second Semester

10:23 Principles of Organic Chemistry II

3 s.h.

210:12 College Physics (NMT)

4 s.h.

210:15 Introduction to Clinical Psychology

3 s.h.

210:16 Cell Physiology

2 s.h.

Total

15-16 s.h.
37:128 Fundamental 
Genetics(P) 3 a.h. 
or 
35:131 Introduction to Biostatistics 
3 a.h. 
Total 
Electives 
4 a.h. 
Second Semester 
Foreign Language 4 a.h. 
37:116 Parasitology 4 a.h. 
69:110B Biochemistry 3 a.h. 
Electives 
5 a.h. 
Total 
16 a.h. 
Senior Year 
General education, elective, or advanced courses in the departments of Biochemistry, Microbiology, Chemistry, Zoology, or others specified for specific degree requirements. 
A student who has satisfactorily completed the prerequisites has satisfied the minimum academic requirements for admission to the physical therapy program in the senior year. 

Medical Technology 
Program director: Marvin Schweitzer 
Medical director: James A. Smith 
Faculty: 
associate professors: James A. Gerstein, associate Robert W. Wester, James O'Connor, 
Marianne Krouse, Alice Smith-Preus, Paul Wynn 
Instructor: 
Jane E. Vassar 
Degree offered: B.S. 

Medical technologists perform the laboratory tests upon which physicians rely for accurate diagnosis and proper treatment of disease. They are in demand in hospital, private, and governmental laboratories; clinics; physicians' offices; and industrial, pharmaceutical, biological, and medical research laboratories. Medical technologists are highly skilled health team members who use a battery of sophisticated procedures and instruments in their work and who possess specialized knowledge and skills acquired through completion of a formal program of academic and clinical study. 
The Medical Technology Program is cooperatively offered by the College of Medicine, College of Liberal Arts, The University of Iowa Hospitals and Clinics, and Iowa City Veterans Administration Medical Center. Satisfactory completion of this program qualifies the student for all medical technologist certification examinations. The program is approved by the Council on Medical Education of the American Medical Association and by the National Accrediting Agency for Clinical Laboratory Sciences. 

Junior Year 
First Semester 
Foreign Language 4 a.h. 
72:130 Human Physiology 4 a.h. 
65:101 Dynamics of health 3 a.h. 
Sixth semester hours of mathematics, including a course in statistics; and one semester course in biology, including general zoology, microbiology, physiology, and parasitology. 
Admission is on a competitive basis. Minimum cumulative grade-point averages of 2.0 overall and 2.5 in science are generally required. An applicant who enters the program as an unmarried student must meet the general admission requirements of the University's College of Liberal Arts, and should consult with the director of the Medical Technology Program as early as possible to plan practical studies to meet all requirements. 

Expenses 
Medical Technology students are responsible for their textbook, University tuition, and student fees. Laboratory costs and equipment such as microscopes are provided by the program. 

Nuclear Medicine Technology 
Program director: Peter T. Kitchens 
Acting program director: Kenneth A. Holmes 
Technical director: John A. Bixler 
Faculty: 
professors: Frank H. Caret, James C. Dunlap, 
associate professors: Maxine S. Bertram, David C. Bumby, 
instructor: Paul O. Wiesner 
Degree offered: B.S. 

Nuclear medicine technology is a medical specialty which uses radioactive isotopes for diagnostic, therapeutic, and research purposes. It is a rigorous, dynamic field that has grown rapidly over the past two decades and is still expanding and growing in complexity. This continued expansion of the specialty has fostered an increasing demand for highly skilled and motivated nuclear medicine technologists. 

Nuclear medicine technologists are employed in hospitals and clinics. At the heart of nuclear medicine technology is the use of sophisticated detectors and computers to trace the movement and localization of radioactive tracers in the human body. 

Other basic job responsibilities include: radiation safety; quality control; radiopharmacetical preparation; and administration; and collection and preparation of biological specimens to measure levels of hormones, drugs, or other body components. In all these functions the nuclear medicine technologist works hand-in-hand with nuclear medicine physicians, health
The Nuclear Medicine Technology Program at the University of Iowa is fully accredited by the Committee on Allied Health Education and Accreditation, and the Council on Medical Education of the American Medical Association. Fulfillment of the requirements established by the AHA Accreditation Board involves three years of practical work in the College of Liberal Arts and a minimum of 12 months of professional clinical experience, available in The University of Iowa Hospitals and Clinics. Upon satisfactory completion of the four-year program, the student receives the Bachelor of Science degree and a certificate of training from the College of Medicine. The graduate is then eligible for national certification as a Nuclear Medicine Technologist.

The required courses in the freshman and sophomore years emphasize the physical and biological sciences, which provide a basic background for further development in the junior year.

### Junior Year

**Required courses:**

- 3:113 Elementary Human Anatomy
- 72:130 Human Physiology
- 22:01 Introduction to Computing with FORTRAN
- 4:160 Advanced courses in chemistry, zoology, or physics

**Recommended courses options:**

- 37:112 Human Physiology
- 4:112 Tissue and Organ Biology
- 37:104 Introduction to Developmental Biology

- 61:150 General Microbiology
- 4:101 Elementary Quantitative Analysis
- 4:121 Organic Chemistry
- 4:122 Organic Chemistry II
- 4:123 Inorganic Chemistry Laboratory I

**Electives:**

- 63:101 Dynamics of Health
- 69:104 Principles of Human Pathology

### Senior Year

The curriculum of this clinical year is organized in accordance with the "Evaluation of an Accredited Educational Program in Nuclear Medicine Technology." Courses are taught in the following areas: radiobiology, radiopharmacology, and tracer techniques; radiopharmaceuticals and radiomunnochemistry, radiation protection, patient care, medical technology, anatomy and physiology, physics, and instrumentation; administration and management; and the appropriate applications to nuclear medicine, and computer applications and quantification of radioactivity in vivo and in vitro, including kinetic studies. Rotations are also arranged in radiomunmochemistry, computerized tomography, and ultrasound.

The clinical year consists of two courses:

- 74:140 Principles of Nuclear Medicine 12 s.h.
- 74:140 Advanced Nuclear Medicine 12 s.h.
- 74:180 Advanced Nuclear Medicine Practicum 6 s.h.

For course descriptions, see "Radiology" in this section of the Catalog.

### Admission

Prerequisites for admission to the nuclear medicine technology program include:

- A minimum of 60 semester hours in all course work, with a minimum cumulative grade-point average of 2.5
- Fulfillment of the College of Liberal Arts general education requirements in rhetoric, physical education, humanities, historical perspectives, foreign civilization and culture, and social sciences. (Rhetoric and psychology are recommended;)
- A minimum of 30 semester hours in science areas to include complete introductory course with laboratory in chemistry, physics, and zoology;
- A minimum of 4 semester hours in mathematics to include at least intermediate algebra.

Fulfillment of these basic admission requirements does not ensure acceptance into the nuclear medicine technology program. Promotion from the junior year to the final clinical year is conditional upon satisfactory completion of a minimum of 48 semester hours of study in the required areas.

A new class begins in late August each year. Application materials must be received by March 1. Personal interviews are scheduled in April and the class is selected by May 1. At present, the class size is limited to eight students. Because prerequisites are becoming increasingly important, prospective students are encouraged to apply early and consult with the program office to plan an appropriate preprofessional program.

### Financial Aid

Students in the nuclear medicine technology program are eligible to apply for undergraduate financial aid. Scholarships, grants, loans, and part-time job placement are administered by the University’s Office of Student Financial Aid and are awarded on the basis of demonstrated need. Part-time work within the Department of Radiology is also available on a limited basis.

### Physical Therapy

**Program director:** Gary L. Smith, M.S., C.P.T.
**Clinical coordinator:** Joseph D. Kinser, R.T.
**Advisors:** Joseph D. Kinser, R.T.
**Department:** Physical Therapy
**Degree offered:** B.S., M.A.

Physical therapists participate in evaluation of the capabilities and disabilities of patients. They administer treatment to alleviate pain, correct or minimize deformity, and improve the general health status of the individual. 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 supervision 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.

Education in the program is available at three different levels: basic professional (certificate) and master’s levels. More advanced training is obtained by completing the Ph.D. in physical education with special emphasis on therapeutics. There are 80 students in the basic professional program and approximately 185 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 UI Health Center, which includes The University of Iowa Hospitals and Clinics, the largest university-owned teaching hospital in the nation's largest university-owned teaching hospital. Therefore this location makes readily accessible to the Physical Therapy Program basic science and medical laboratories, basic science courses, and interagency programs 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. Satisfaction of the professional program qualifies candidates for the Professional Examination Service (PES-5) test for licensure in Iowa and other states.

The two-year professional certification program consists of:

First Semester
- 60:108 Human Anatomy 4 s.h.
- 101:90 Fundamentals of Physical Therapy 3 s.h.
- 101:110 Pathology 3 s.h.
- 101:131 Therapeutic Physical Agents I 3 s.h.
- 101:141 Introduction to Physical Therapy 1 s.h.
- 69:203 Introduction to Human Pathology 2 s.h.

Second Semester
- 60:108 Human Anatomy and Neuromuscularity 4 s.h.
- 72:150 Intermediate Physiology 4 s.h.
- 101:86 Therapeutic Exercise I 2 s.h.
- 101:116 Clinical Observation 0 s.h.
- 101:110 Introduction to Clinical Medicine I 1 s.h.
- 101:122 Emotional Aspects of Disability 1 s.h.
- 101:90 Physical Agents II 2 s.h.
- 41:156 Applied Biostatistics 2 s.h.

Third Semester
- 101:111 Therapeutic Exercise II 4 s.h.
- 101:112 Principles of Neurology and Clinical Sciences 1 s.h.
- 101:86 Clinical Education II 2 s.h.
- 101:160 Fundamentals of Cardiopulmonary Therapeutics 2 s.h.
- 101:142 Biostatistics and Orthotics 1 s.h.

Fourth Semester
- 101:200 Clinical Internship 10 s.h.

Admission to Professional Program
A new class is admitted to the professional certification program each fall. Prospective students may enter the program following their junior year of college or after earning a baccalaureate degree.

A student entering the program after the third year of undergraduate study must be able to satisfy all requirements for the baccalaureate degree by successfully completing the first year of the professional certification program.

Undergraduate students who complete their professional 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 Professional Therapy Program to plan their professional 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 entry-level therapy.

To be considered for admission, the applicant must have completed at least 60 semester hours of college study, including a complete introductory course in gross anatomy or biology (12 semester hours; zoology preferred), a complete introductory course in chemistry (6 semester hours), a complete introductory course in physics (6 semester hours), a complete introductory course in psychology (6 semester hours), one college-level mathematics course (3 semester hours), and statistics (3-5 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, 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) Aptitude 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.

Personal Interviews may be required. The physical therapy admissions committee selects applicants who appear to be best qualified for the study and practice of the profession.

Applications are accepted beginning September 1 for the following year. Prospective students are urged to apply early as possible. The closing date is February 1.

Expenses
In addition to general University expenses, students in the Physical Therapy Program are ineligible for purchase of University, state, or federal insurance, and course syllabi.

Master of Arts
The Master of Arts in physical therapy emphasizes research and teaching in three areas of physical therapy: 1) musculoskeletal (orthopedic), neuro-muscular (neurology), and cardiopulmonary. Pediatrics is included in the musculoskeletal area. Clinical experiences are also offered. The programs focus 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 course work. Completion of a basic master's degree in physical therapy 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 assessment of locomotor function such as muscle strength, gait, posture, reflexes, muscle activity (EMG), endurance, and aerobic capacity.

Equipment includes laboratory computers. Use of extra departmental laboratories may also be arranged. Collaborative studies are encouraged with other departments, such as nutrition, internal medicine, pediatrics, orthopedics, physiology, anatomy, engineering, pharmacology, and with personnel in the physical therapy clinic.

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 practice;
Be able to teach at the basic professional level of physical therapy training and show promise of ability to teach at advanced levels;
Have a knowledge of the physical therapy literature that will enable the student to relate any literature relevant to his area of specialization.

Admission to the Physical Therapy Program is competitive and limited numbers of students are accepted. See the application forms and literature relevant to the specialization of the prospective applicant.

Required courses:
- 101:301 Thesis in Physical Therapy 4 s.h.
- 101:122 Medical Intersummarization 3 s.h.
- 101:135 Biomechanics and Bioassay 3 s.h.
- 101:123 Concepts of Human Motion I 4 s.h.
- 101:166 Biopsychosocial Therapeutics 3 s.h.
- 101:125 Evaluation of Selected Neurological Disorders 3 s.h.
- 101:280 Teaching Practicum 3 s.h.
- 101:262 Clinical Education Practicum 3 s.h.
- 101:294 Research Practicum 3 s.h.
- 101:339 Analysis of Scientific Literature 2 s.h.

Recommended courses:
- 101:353 Independent Study 4 s.h.
- 101:253 Advanced Anatomical and Pathological Anatomy 3 s.h.

60:203 Introduction to Human Pathology 2 s.h.
Admission

To be considered for admission to the master's degree program, the applicant must be a graduate of an approved professional program in physical therapy, must be a licensed physical therapist, and must meet the admission requirements of The University of Iowa Graduate College. Clinical experience is desirable.

Program entry is limited to the fall semester. Deadlines for receipt of applications are October 15 for notification by December 1, March 15 for notification by May 1, and May 15 for notification by July 1.

Doctor of Philosophy in Physical Education (therapeutics)

Doctoral training related to physical therapy is received in a program in physical education with special emphasis in therapeutics. This program is described in detail under "Physics Education-Fine Husbandry" in the "Course of Liberal Arts" section of the Catalog.

A student successfully completing the Ph.D. program in physical education with the emphasis in therapeutics will:

Be able to perform original research and research directed toward the discovery of new knowledge and the development of theoretical principles that will advance the profession of physical therapy--clinical practices.

Be able to teach at the basic professional level in the areas 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 qualified in the application of basic and advanced concepts in the areas of neuroskeletal, neuromuscular, and cardiorespiratory physical therapy.

To be considered for admission to the Ph.D. Program in Physical Education (therapeutics), the applicant must be a graduate of an approved professional program in physical therapy, must be a licensed physical therapist, must hold a master's degree, must have had calculus, and must have 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.

Financial Aid

A number of teaching and research assistantships are available.

Courses

The courses listed below are open only to students in the professional program.

101.289 Electromyography in Kinesiology and Biomechanics 3 s.h.
792.127 Designing and Developing Instructional Materials 3 s.h.
792.265 Facilitating Learning in Health Science Education 3 s.h.
792.248 Data Processing 3 s.h.
792.150 Introduction to Educational Measurement 3 s.h.
63.171 Problems in Preventive Medicine arr.
27.257 Biomechanics of Human Motion 4 s.h.
31.251 Selected Issues in Information Processing and in Motor Control 3 s.h.
31.123 Psychology of Learning 3 s.h.
71.120 Gigs: Their Nature, Action, and Use 2 s.h.
101.293 Independent Study arr.
101.327 Research in Therapeutics arr.
A new class begins the last week in May. Applications are accepted beginning one year in advance, and close January 15. Each applicant must complete a completed application for the University of Iowa and the Physician Assistant Program. Supplementary applications must be submitted at least three letters of recommendation.

**Expenses**

In addition to general University student expenses, students in the Physician Assistant Program are responsible for the purchase of their uniforms and diagnostic equipment, approximately $200. Microscopes are not required.

**Courses**

113:1 Student Physician Assistant Clinical Year
113:15 Seminar for Physician Assistant Students 0.4 A.
Lectures, readings, and group sessions meeting with the history and development of physician assistant programs. Open only to students in the Physician Assistant Program.

113:204 Emergency Medicine for Physician Assistants 4.0
This course is part of the preclinical instruction, including the health sciences, clinical sciences, clinical procedures, medical and surgical laboratory, and clinical training, which forms the basis for emergency care management and emergency room experience. Open only to students in the Physician Assistant Program.

**Biochemistry**

Department Head: Edward C. Heath

Research Interests

The department's current research interests include the biochemistry, molecular biology, and cell biology of physical biochemistry, effects of composition and chemical and biochemical reactivity of the metalloproteins, the metalloproteins, structure and function of photosynthesis, dyes and related compounds, and the chemistry of the photosynthetic apparatus, biochemistry of glycoprotein and carbohydrate molecules, the control of protein synthesis in higher organisms, biochemistry of the higher organisms, biochemistry of glycoprotein and carbohydrate molecules, mechanisms and control of protein synthesis, biochemistry of proteins, characterization of liver and enzymes, hematopoiesis, and metabolism, photosynthesis, and synthesis of amino acids, coenzyme A, and the chemistry of cytokines and other proteins.
Various elections are available for fourth-year medical students, including both academic and extracurricular opportunities. For descriptions of program courses, see the "Nondepartmental," "Human Nutrition," and "Pediatric care" listings in this section of the Catalog.

**Family Practice**

Department head: Robert R. Nayak
Assistant professors: Elizabeth A. Bura, Phong H. Dusseau, Charles E. Diniz, Richard W.edly, Paul E. Wilkerson, associate professors: Karl E. Jacob, Kenneth J. Judkins, David J. McGinn, Harald P. Naterer. For a complete listing of faculty, see the Faculty List. Members of the Family Practice faculty are required to participate in the Family Practice Program Committee. Only full-time faculty members are eligible for this program.

**Dermatology**

Department head: John B. Brown
Clinical director: Donald B. Johnson, Jr., Susan Pett.

The Department of Dermatology instructs medical students and trains dermatology residents in the care of patients with skin disease, and provides opportunities for the development of research skills in the field of dermatology. This is one of the few dermatology programs in the country with a required rotation for medical students. Each third-year medical student spends two weeks in the clinic and attends about 10 one-hour lectures. A good cross-section of patients is available, due to the mixture of patients and the clinic's location. A large number referred from the Student Health Service are seen at the nearby Veterans Administration Medical Center.

University of Iowa Hospitals and Clinics offers a dermatology internship program which qualifies graduates to take the American Board of Dermatology's certification examination. The program is accredited by the AOA. Courses composing the program are administered by the University of Iowa College of Medicine. The following are required:
- 512:011-0200 Dermatology Seminar 1 s.h.
- 512:020-0203 Clinical Dermatology 4 s.h.
- 512:020-0205 Projects in Dermat ology 4 s.h.
- 512:020-0100 Hospital Dermatology Administration 4 s.h.

The following are recommended electives:
- 56:207-2087 Dermatologic Research Seminar 2 s.h.
- 512:207-0206 Complex Care Nutrition 2 s.h.
- 512:207-0208 Analysis of Food Services 2 s.h.
- 65:211 Nutrition of the Child 2 s.h.

Students generally complete the program with 16-17 semester hours of graduate credit. University Hospitals awards a certificate in graduation of the program. Credit earned in the program may be applied toward an advanced degree, and approximately half of the graduates of the program go on to complete advanced degree programs, most typically the master's degree in home economics, preventive medicine, health education, or business administration.

American Dermatologic Association and University of Iowa College require courses for admission to the program include the bachelor's degree with a strong background in food and nutrition, food service management, and business. Students must enter the program in the fall semester. The deadline for application is March 1.

University Hospitals pays an internship stipend which partially covers educational and living expenses. For descriptions of program courses, see the "Nondepartmental," "Human Nutrition," and "Pediatric care" listings in this section of the Catalog.
Genetics

The Ph.D. program in genetics is an interdepartmental program involving members of the Departments of Anatomy, Biochemistry, Botany, Microbiology, and Zoology, as well as a number of faculty members in clinical departments. See "Graduate" under "College of Liberal Arts" for a list of participating faculty members, degree requirements, and courses offered.

Hospital and Health Administration

Program director: Samuel Levy
Faculty: professor Samuel Levy, James L. Price
graduate assistant Gerald Harris
associate professor Linda D. Daniels
graduate assistant John W. Kubler, Gary L. Lewis, Robert L. Locks, Daniel Russell
adjunct professor John W. Kubler, Gary L. Lewis, R. H. Staker, Kenneth H. Verzago
adjunct members Maria Bach, Oleta Healy

Since its inception in 1955, the Graduate Program in Hospital and Health Administration has offered two degree programs, each having distinct, mutually reinforcing academic objectives.

The Master of Arts Program is designed for individuals who seek executive positions in health organizations.

The Doctor of Philosophy program is oriented primarily to individuals who are interested in careers in teaching and research in the health fields, although individuals seeking senior managerial appointments in health organizations are also encouraged to apply.

The graduate program in Hospital and Health Administration accepts responsibility for the management and development of the University's Center for Health Services Research in 1981.

Master of Arts

The curriculum for the M.A. degree in hospital and health administration requires two years of full-time study. It is aimed at providing students with the knowledge, attitudes, and skills required to function in responsible managerial positions in hospitals, long-term care institutions, ambulatory care facilities, planning agencies, and related health organizations.

In the first year, courses are designed to familiarize students with the social, political, economic, and legal environment of hospitals and health care institutions. Concepts, tools, and techniques for effective and efficient managerial decision making, planning, and control are introduced. The entire program is based on an interdisciplinary approach which includes exposure to the theoretical and applied aspects of health systems management.

In the second year, the curriculum is oriented to the special interests and career objectives of individual students. Upon recommendation of the faculty, an administrative residency may be arranged. Students will be provided with opportunities to concentrate in areas such as hospital administration, health planning, or long-term care administration.

Although a thesis is optional for the master's degree, students who wish to pursue doctoral studies are encouraged to engage in research leading to preparation of a thesis.

The normal program of study leading to the master's degree requires a total of 64 semester hours of graduate work. All master's students must complete eight required core courses which represent a core of disciplines and fields of knowledge. These courses are as follows:

60:101 Introduction to Health Care Organization 3 a.h.
60:102 Health Administration 3 a.h.
60:104 Economics of Health Care 3 a.h.
60:106 Legal Aspects of Health and Medical Care 3 a.h.
60:122 Financial Management of Hospital and Health Institutions 3 a.h.
60:227 Quantitative Methods in Health Administration 3 a.h.
60:236 Quantitative Applications in Health Care 3 a.h.
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 permits taking a joint program for the M.A. and Ph.D. degrees. In addition to satisfying the specific requirements of the program, the doctoral student must satisfy the requirements of the Graduate College.

Center for Health Services Research

The Center for Health Services Research features a program of research and education in health care policy and management. Center staff includes an interdisciplinary core of faculty associates drawn from the colleges of Medicine, Dentistry, Nursing, Pharmacy, Education, Engineering, Business Administration, and Liberal Arts as well as the University of Iowa Hospitals and Clinics.

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 at least a master's degree in health administration, medical administration, business administration, or a related field in health, or in other fields related to health.

In addition to the requirements in accounting, economics, management, and statistics are program prerequisites. Students must have at least 3.0 grade-point average for regular admission, although a student with a lower grade-point average may be admitted conditionally upon the recommendation of the faculty.

All students applying for admission are required to submit formal written application forms, official transcripts of all graduate and undergraduate course work, three letters of recommendation, and a brief statement outlining career objectives. Applicants are required to take the Graduate Record Examination (GRE) Aptitude 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 April 1.

Financial Aid

A limited number of research assistantships, fellowship scholarships, and other sources of financial aid are available to support students in both the M.A. and Ph.D. programs.

Courses

0312 Introduction to Health Economics 3 s.h.

0313 Introduction to Health Care Institutions and Services 3 s.h.

0314 Introduction to Health Policy and Administration 3 s.h.

0315 Introduction to Research Methods 3 s.h.

0316 Introduction to Health Care Delivery Systems 3 s.h.

0317 Introduction to Health Care Delivery Systems 3 s.h.

0318 Introduction to Health Policy and Administration 3 s.h.

0319 Introduction to Research Methods 3 s.h.

0320 Introduction to Health Care Delivery Systems 3 s.h.

0321 Introduction to Health Policy and Administration 3 s.h.

0322 Introduction to Research Methods 3 s.h.

0323 Introduction to Health Care Delivery Systems 3 s.h.

0324 Introduction to Health Policy and Administration 3 s.h.

0325 Introduction to Research Methods 3 s.h.

0326 Introduction to Health Care Delivery Systems 3 s.h.

0327 Introduction to Health Policy and Administration 3 s.h.

0328 Introduction to Research Methods 3 s.h.

0329 Introduction to Health Care Delivery Systems 3 s.h.
Medical Scientist Training Program

Program Director: Robert E. Felts (Physiology)

The Iowa Medical Scientist Training Program is designed to prepare highly qualified men and women for a lifelong career of creative activity in the preclinical and clinical sciences. To accomplish this, the program provides a means for efficient integration of graduate education and doctoral research with the full complement of clinical studies necessary for the medical degree. With few exceptions, the requirements for the combined M.D. and Ph.D. degree can be completed in six to seven years of continuous study.

In the first two years of the program, 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 a broad exposure to both the language and organizing concepts of the preclinical sciences, which form the foundation essential for all subsequent medical training. In the first semester trainees take courses in biochemistry, microbiology, general pathology, and embryology. The fall semester of year two is devoted to the study of pharmacology, systemic pathology, community health sciences, neurobiology, and behavioral sciences.

In the second semester of the second year, trainees are enrolled full time in an introduction to Clinical Medicine sequence which integrates the behavioral sciences, physiology, knowledge, and skills necessary for building and maintaining collaborative relationship with the physician. This module provides information and practice in history-taking, physical diagnosis, and laboratory diagnosis, as well as insight into major health problems and needs. The introduction to Clinical Medicine sequence 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.

In years three, four, and five, to the extent necessary, six, trainees are enrolled full time in the graduate department which they are asked to select by January of the second year. During this time, trainees are provided with academic and research experiences appropriate to their development as independent investigators. This scientific training is directly supervised by the 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 a final clinical year. This year serves two important purposes. First, it allows the trainee to take his or her considerable and growing fund of information and specialization in laboratory science back into the clinical environment and apply it to problems of human disease. Second, it permits the trainee to renew and further develop the clinical skills 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 first year of the program receive an award, including stipend and fee support, provided by a Medical Scientist Training Program grant awarded to The University of Iowa from the National Institutes of Health. The current annual award is $50,000 per year. Support from this grant will be continued through the sixth year provided trainee achievement and progress remain satisfactory. Following the trainee admitted to advanced training in the program is arranged on an individual basis.

Eligibility

All applicants must be acceptable for admission to the College of Medicine and Graduate College of The University of Iowa. It is expected that trainees will have completed requirements for a bachelor's degree at an accredited academic institution. In addition to outstanding academic credentials, including strength in physical and mathematical sciences, the applicant should demonstrate aptitude for and commitment to the type of research usually through productive research experience as a graduate student. Applications are normally accepted from students requesting admission to the first year of the program. Consideration will also be given to applicants for 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 partner in the American Medical Culture Application Service (AMCAS). Program applicants should submit AMCAS to forward their credentials to the College of Medicine as soon as possible after June 15. At the same time, applicants should request a separate Medical Scientist Training Program application form from the Program Office, 6-B00 Bowen Science Building, The University of Iowa, Iowa City, Iowa 52242. The application to the Medical Scientist Training Program is reviewed by a Program Selection Committee after the AMCAS selection is received.

The deadline for receipt of applications is December 1. It is strongly recommended that all applications be submitted as early as possible to facilitate review by both the College of Medicine Admissions Committee and the Program Selection Committee. The early decision plan of the College of Medicine for out-of-state residents is waived for this program. Equal consideration will be given to applications regardless of their state of residence.

All candidates selected to the Medical Scientist Training Program should take both the 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 the application is submitted.

Medical Technology

See "Division of Associated Medical Sciences" in this section of the Catalog.

Microbiology

Chair: Irving P. Crawford

Faculty: associate professor Robert F. Adams (Microbiology), John B. Butler, John Cates, Jr., Irving P. Crawford, Michael O. Falke, Thomas A. Feldsheer (Immunology), Rudolph G. George, Edward D. Grieder, Louis G. Hofmies, William Johnson, David W. Luderer (Gastroenterology), Allen J. Mertz (Bacteriology), W. B. Stahl, Donald P. Stahl

associate professors George A. Becker, Charles D. Cox, John E. Rehmert, Mark F. Sivieri, C. Martin Berthia, Donald H. Wicker

assistant professors David J. Ogg, Lacy Daniels, David J. Rehmert

Degree offered: B.S., M.S., Ph.D.
Doctor of Philosophy

A candidate for the Ph.D. must satisfy departmental course requirements determined by his or her advisory committee (minimum requirement: one course in each of the five subdivisions available in the department, or ten 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 Bowen Science Building with the departments of Anatomy, Biochemistry, Pharmacology, and Physiology and Biophysics. 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 course work must take it during the first year of graduate school. The student should have a grade point average of 3.7 or better to be admitted to the graduate program in microbiology.

Courses

61:100 Medical Microbiology 3 credits
Provided and evaluated essential to study of microorganisms, risk identification, and infection control, infection control, antimicrobial therapy, and antibiotic therapy. Prerequisite: Health Sciences exempt program preparation is: preparation for natural science.

61:110 Microbiology for Preliminary Study 2 credits
Introductory course in medical microbiology, with emphasis on the more commonly encountered pathogenic microorganisms and their role in infection and disease processes. Prerequisite: Health Sciences exempt program preparation is: preparation for natural science.

61:157 Survey of Immunology 3 credits
Survey of current concepts of cellular and molecular aspects of the immune system, with emphasis on immune responsiveness to antigens and the mechanisms by which immune responsiveness can be altered or suppressed. Prerequisite: Health Sciences exempt program preparation is: preparation for natural science.

61:167 General Microbiology 4 credits
Introduction to classical and molecular aspects of microbiology, with emphasis on the role of microorganisms in human disease. Prerequisites: Health Sciences exempt program preparation is: preparation for natural science.

61:180 Laboratory Methods 2 credits
Practical experience in the laboratory with emphasis on techniques relevant to current research. Prerequisite: Health Sciences exempt program preparation is: preparation for natural science.

81:180 Medical Microbiology 3 credits
Microbial cell structure and function, growth, energy metabolism, reproduction, and control mechanisms. The role of microorganisms in host pathogens, with emphasis on microbial genetics, and on mechanisms of disease. Prerequisite: Health Sciences exempt program preparation is: preparation for natural science.

81:187, 2 Microbiology courses, credit or no credit.

81:201 Problems in Microbiology 3 credits
For students enrolled in an advanced degree program or for students with prior credit in Microbiology. Prerequisite: 81:187, with credit or no credit.

81:218 Microbiology Seminar 3 credits
Introduction to review of current literature in microbiology. Prerequisite: 81:187 or 81:201.

81:251 Career Development 1 credit
Open only to seniors and graduate students.

81:252 Medical Laboratory Microbiology 3 credits
Fundamental and practical training in laboratory techniques. Development of laboratory skills. Prerequisite: 81:187 or 81:201. Prerequisites: 81:187 and consent of instructor.

81:258 Cellular Clinical Microbiology 3 credits
Fundamental and practical training in cellular clinical microbiology. Prerequisites: 81:187 or 81:201. Prerequisites: 81:187 and consent of instructor.

81:277 Lecture in Immunology 2 credits
Lectures on current topics in immunology are presented. Prerequisites: 81:187 or 81:201.

81:300 Basic Chemistry 2 credits
Basic principles of inorganic and organic chemistry are presented. Prerequisites: 81:187 or 81:201.

81:310 Basic Biology 2 credits
Basic principles of cell and molecular biology are presented. Prerequisites: 81:187 or 81:201.

81:353 Genetics of Bacteria and Bacteriophages 3 credits
Basic principles of genetics and molecular biology are presented. Prerequisites: 81:187 or 81:201.

81:370 Lecture in Immunology 3 credits
Lectures on current topics in immunology are presented. Prerequisites: 81:187 or 81:201.

81:377 Lecture in Biochemistry 1 credit
Lectures on current topics in biochemistry are presented. Prerequisites: 81:187 or 81:201.

81:378 Lecture in Cell Biology 1 credit
Lectures on current topics in cell biology are presented. Prerequisites: 81:187 or 81:201.

81:379 Lecture in Molecular Biology 1 credit
Lectures on current topics in molecular biology are presented. Prerequisites: 81:187 or 81:201.

81:380 Lecture in Experimental Immunology 1 credit
Lectures on current topics in experimental immunology are presented. Prerequisites: 81:187 or 81:201.

81:401 Seminar in Biochemistry 1 credit
Seminar in biochemistry. Prerequisites: 81:187 or 81:201.

81:455 Seminar in Molecular Biology 1 credit
Seminar in molecular biology. Prerequisites: 81:187 or 81:201.

81:475 Lecture in Medical Microbiology 1 credit
Lectures on current topics in medical microbiology are presented. Prerequisites: 81:187 or 81:201.

81:480 Library Methods 1 credit
Librarians provide teaching and research support. Prerequisites: 81:187 or 81:201.

81:481 Microbiology Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.

81:482 Research Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.

81:483 Research Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.

81:484 Research Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.

81:485 Research Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.

81:486 Research Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.

81:487 Research Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.

81:488 Research Tutorial 1 credit
Tutorial in microbiology for students who have completed or are currently enrolled in medical microbiology. Prerequisites: 81:187 or 81:201.
Neurology

Course 5.123 in Clinical Neuro-Ophthalmology

Evaluation of patients with eye symptoms or signs associated with neurological disorders may be challenging. The course will cover the evaluation of common neurological syndromes that present with eye symptoms. Students will develop skills in recognizing and interpreting neurological symptoms and signs associated with eye diseases.

Course 5.124 in Neuropsychology

The course will focus on the assessment and management of cognitive and emotional disorders in neurological patients. Students will learn about the assessment of cognitive function, mood disorders, and behavioral disorders in neurological patients. Students will also learn about the treatment of these disorders and how to develop effective management strategies.

Course 6.200 in Behavioral Medicine

The course will focus on the integration of psychological, social, and biological factors in the development and treatment of behavioral disorders. Students will learn about the role of these factors in the development of common behavioral disorders, such as substance abuse, obesity, and eating disorders. Students will also learn about the role of these factors in the treatment of these disorders.

Course 6.201 in Medical Genetics

The course will focus on the role of genetics in the development of neurological disorders. Students will learn about the genetic basis of common neurological disorders, such as Alzheimer's disease, Parkinson's disease, and Huntington's disease. Students will also learn about the role of genetics in the treatment of these disorders.

Residency Program

The department offers a four-year residency program for newly graduated physicians interested in pursuing careers in Obstetrics and Gynecology. During the four years, residents rotate through various subspecialties within the department and gain experience in both inpatient and outpatient settings. Additional training is offered in gynecologic surgery, maternal-fetal medicine, and reproductive endocrinology.

The residency program is designed to provide residents with comprehensive training in Obstetrics and Gynecology and prepare them for successful careers in academia, clinical practice, or subspecialty fellowship.

The residency program is accredited by the Accreditation Council for Graduate Medical Education (ACGME) and adheres to the standards set by the American Board of Obstetrics and Gynecology.
Ophthalmology

Department Head: Frederick C. Booth

Ophthalmology is a medical and surgical specialty concerned with the structure, diagnosis, and treatment of diseases of the eye and its adnexa, including correction of refractive errors. Several subspecialties are recognized in the United States. For example, training in corneal and refractive surgery, glaucoma, ocular oncology, retinal disease, neuro-ophthalmology, pediatric ophthalmology, oculoplasty, and ocular oncology.

The teaching program is designed to prepare trainees for the medical examination and treatment of ophthalmic diseases. In addition, it provides training in clinical and surgical procedures.

The residency program lasts three and one-half years, and culminates in an ophthalmology residency.

The Master of Science degree is not offered as a primary or secondary objective but can be pursued only in conjunction with a residency program.

Facilities

The department maintains several research laboratories: tumor diagnostics, pathology and electron microscopy, neurophysiology, epigenetics, and vascular disease. Clinical facilities are available not only at the University Hospital, but also at the Veterans Administration hospitals in Iowa City and in Des Moines. The department also manages an eye clinic located at the Broadlawns Medical Center in Des Moines. The department sponsors an annual symposium, an annual meeting, and a statewide program of continuing education.

Two features of the department are a large referral base and the opportunity it offers to trainees for a career in ophthalmology.

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orthopaedics, but in medicine, pediatrics, neurology, surgical specialties, intensive care, anesthesiology, and other services. During the following years, residents gain experience in trauma, children's orthopaedics, adult orthopaedics, neuromuscular disorders, rehabilitation, prosthetics and orthotics, rheumatology, and basic science as related to orthopaedics. The residents take specialized courses in anatomy, bone histology, biochemistry, physiology, and pathology.

A weekly seminar covers biomechanics, kinesiology, and selected clinical subjects. Residents also attend the Northwestern University courses on lower extremity and orthopaedics.

Program for Full-Time Academic Orthopaedics

This program includes the training described under the clinical program above. In addition, the resident devotes one or two years to research. This research may be in any field in which the resident is interested, provided it is related to the musculoskeletal system, and may be done in one of the orthopaedic laboratories or in a basic science department.

Departmental Laboratories

The orthopaedic laboratories deal with problems in these major subject areas:

Biochemistry—The biochemistry of mucopolysaccharides and collagen, both normal and those altered in epiphyseal dysplasia and scoliosis. Biomechanics—in conjunction with the College of Engineering, biomechanical problems of the upper extremity, biomechanics of the hip and the gait, and total joint replacements.

Cell biology and pathology—Ultramicroscopic studies on normal bones, cartilage, tendons, and muscles, and on those altered by experiment and disease.

Tissue research, radioactive isotopes, and metabolic bone disease—Skin, bone, and cartilage transplantation, skeletal physiology, qualitative and quantitative aspects of histological composition, and bone density, effect of in vivo and in vitro metabolic bone disease, and exercise.

Facilities

The department is housed in the Carver Pavilion of The University of Iowa Hospitals and Clinics and has an active service in the Veterans Administration Medical Center.

Facilities include 100 beds, an outpatient clinic, a specialty library, a specialty radiology unit, a brace shop, and physical therapy facilities. Physician in the outpatient clinic see approximately 100 patients a day. Specialty clinics deal with such problems as scoliosis, club feet, congenital dislocated hips, neuromuscular disease, metabolic diseases, neck, back, amputees, hips, knees, hands, neoplasms, 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, Stare Services for Crippled Children, and two state schools for the mentally retarded.

Courses

702 Clinical Orthopaedics
702 Orthopaedic Surgery elective for Physical Medicine
702 Orthopaedic Surgery elective for Physical Medicine
702 Advanced Clinical Orthopaedics
Open to senior medical students only.
702 Basic Orthopaedics
Open to senior medical students only.
702 Basic Orthopaedic Seminars
Open to senior medical students only.
702 Special Studies in Orthopaedics
Open to senior medical students only.
702 Special Studies in Orthopaedics
Open to senior medical students only.

Otolaryngology—Head and Neck Surgery

Department head: Brian F. McKeown

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 plastic surgery, audiology, speech pathology, and dentistry (orthodontics and maxillofacial prosthetics). 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 carries a large patient load, including head and neck cancer, head and neck plastic reconstructive surgery, maxillofacial trauma, congenital defects (such as cleft lip and palate), neurology, pediatrics, and gynecologic head and neck plastic reconstruction, maxillofacial trauma, congenital defects (such as cleft lip and palate), neurology, pediatrics, and gynecologic head and neck plastic reconstruction, maxillofacial trauma, congenital defects (such as cleft lip and palate), neurology, pediatrics, and gynecologic head and neck psychosocial surgery, surgery for AIDS, and the all areas usually considered otolaryngologic.

There are seven divisions in the department which make this program comprehensive: otolaryngology, neurology, plastic and reconstructive surgery of the head and neck, oncologic surgery of the head and neck, otolaryngology, cranial defects, speech pathology and audiology, and research.

Another major objective of the department is to offer research programs designed to provide new knowledge in the field and provide models for student and resident research training. All senior faculty members participate in research and all residents are offered these research projects during their program of study. In addition, there are several large-scale research programs within the department in vestibular neurophysiology, cleft palate and other craniofacial defects, otolaryngology, facial nerve conduction, microvascular reconstruction, and the effects of aging on hearing, anatomy of the temporal bone, craniofacial surgery, auditory, bone resorption in ear disease, 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 study and a one-year internship. The basic science lectures and laboratory studies are conducted during the first year 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 in the hospital and clinic.

To complete the requirements for the Master of Science degree, the student must receive at least a total of 90 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

0.63 Clinical Ophthalmology 2 h.
0.64 Clinical Interventions in Ophthalmology 3 h.
0.67 Head and Neck Oncology 4 h.
0.65 Preclinical Studies in Ophthalmology 4 h.
0.68 Basic Principles of Oral and Maxillofacial Surgery 4 h.
0.69 Special Topics in Ophthalmology 4 h.
0.70 Basic Science Education in Ophthalmology 2 h.
0.82 Special Rotations in Ophthalmology 4 h.
0.86 Basic Science Education in Ophthalmology 2 h.
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Postdoctoral Training

The Department of Pathology offers a program in hematology for physicians who have completed at least two years of residency training in pathology. The postdoctoral fellowship consists of one year of diagnostic work and one year of laboratory research in basic hematology.

The department also provides postdoctoral training in immunology, neuropathology, biochemistry and hematology, as well as in other areas of cellular and molecular pathology. These positions are open to individuals with either Ph.D. or M.D. degrees.

Facilities

The department has laboratories equipped for cellular and molecular immunology, experimental pathology, hematology, histology, electron microscopy, tissue culture, special chemistry, virology, and blood coagulation, as well as the standard facilities for ancillary and clinical pathology. The Pathology Learning Center has areas for seminars, independent study, multimedia learning activities, and small group discussions.

Courses

401 Introduction to Medical Technology 1.5 h.
Survey of the role of medical technologies in various laboratory settings and their relationship to the health care system. Open to medical technology students in at least health programs. Offered once each year; check Schedule of Classes.

406 Principles of Human Pathology 3 h.
Course emphasizing terms, mechanisms, and principles of disease, and the ability to communicate these in a medical setting. Open to medical technology students in at least health programs. Offered spring semester.

4012 Medical Jurisprudence 3 h.
Course covering the history of medical ethics and the legal establishment of medical practice requirements. Open to medical technology students in at least health programs. Offered spring semester.

402 Medical Technology Practice 4.5 h.
Theory and practice in clinical laboratory sciences.

4021 Hematology for Medical Technologists 1.5 h.
Theory and practice of clinical hematology including methodology. Medical technology students only.

4022 Clinical Chemistry for Medical Technologists 1.5 h.
Theory and practice of clinical chemistry applicable to medical technologists. Involves methodology, interpretation of results, and report preparation.

4023 Microbiology for Medical Technologists 1.5 h.
Theoretical and practical studies of various bacteria, including those associated with human disease. Medical technology students only.

4024 Immunology and Medical Microbiology 1.5 h.
Theory and practice of laboratory methodology as applied to viral, fungal, bacterial, protozoa, and mycotic medical technologists.

4025 Molecular Biology for Medical Technologists 1.5 h.
Theory and practice of laboratory methodology as applied to viral, fungal, bacterial, protozoa, and mycotic medical technologists.

4030 Clinical Chemistry 2.5 h.
Rotation through the clinical chemistry laboratories at University Hospital and Clinics and the Van Nuys Hospital. Emphasis on the role of clinical chemistry in health and illness. Open to medical technology students in at least health programs. Offered spring semester.

4031 Clinical Biochemistry for Medical Technologists 2.5 h.
Rotation through the blood test units at University Hospital and Clinics, including the Emergency Department. Open to medical technology students in at least health programs. Offered spring semester.

4032 Clinical Pathology for Medical Technologists 2.5 h.
Rotation through the hematology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4033 Clinical Microbiology for Medical Technologists 2.5 h.
Rotation through the hematology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4034 Clinical Microbiology 2.5 h.
Rotation through the pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4035 Clinical Microbiology 2.5 h.
Rotation through the pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4036 Clinical Microbiology 2.5 h.
Rotation through the pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4041 Clinical Pathology 2.5 h.
Rotation through the clinical pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4042 Clinical Pathology 2.5 h.
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Rotation through the clinical pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4049 Clinical Pathology 2.5 h.
Rotation through the clinical pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4050 Clinical Pathology 2.5 h.
Rotation through the clinical pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4051 Clinical Pathology 2.5 h.
Rotation through the clinical pathology laboratories at University Hospital and Clinics and the Van Nuys Hospital. Open to medical technology students in at least health programs. Offered spring semester.

4052 Clinical Pathology 2.5 h.
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Pharmacy

Department head: J.P. Long
Faculty: see faculty list

The department provides professional training in pharmacy for health science students, offering a Master of Science program in clinical pharmacology and course work in pharmacy for students with the M.D. degree, and offers a doctoral program of didactic and research experience.

For qualified graduate students, a career research and training program in biochemical pharmacology and toxicology, drug metabolism, central nervous system and autonomic pharmacology, and the pharmacology of the cardiovascular and renal systems is offered.

The Toxicology Center is located primarily within the Department of Pharmacology. The laboratory is involved with other departments in such educational and research activities as the Neural and Behavioral Sciences 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 7:100 Drugs: Their Nature, Action, and Use emphasize the medicine of drug action and give students a background for rational decisions concerning the personal use of drugs.

The department offers research training in all areas of pharmacology and toxicology at the predoctoral and postdoctoral levels, in preparation for career opportunities in teaching, government, and industry.

Requirements for graduate study include undergraduate background in chemistry, biology, and mathematics. The level of performance in undergraduate courses must be in the top quartile.

Master of Science

In cooperation with clinical departments in the College of Medicine and other departments, the Department of Pharmaceutics offers a Master of Science program in clinical pharmacology to applicants who already hold the Doctor of Medicine degree. The specific objective of this program is to provide increased emphasis on and training in the science of clinical pharmacology for residents in the various medical specialties.

Completion of the M.S. program requires a minimum of two years. Satisfactory completion of the following core courses is mandatory unless specifically waived by the Department of Pharmacology. Any of these course requirements may be waived at the request of the trainee if he or her advisor agrees that the trainee has met them satisfactorily prior to time.

7:203 Pharmacology Research
7:204 Pharmacology Seminar
7:206 Biochemical Pharmacology
7:210 Special Topics in Pharmacology
8:217 Biometrics and Biostatistics
7:212 Toxicology
7:216 Clinical Toxicology
7:280 Clinical Pharmacology and Therapeutics Lecture Series

The trainee may audit 7:105 Pharmacology for Health Sciences: Medical, and may take additional courses appropriate to his or her program, including:

7:205 Advanced Cardiovascular Pharmacology and Physiology
7:213 Advanced Neuropharmacology
7:214 Renal Pharmacology

Courses

7:110 Chemobiodynamics
7:110 Chemobiodynamics

Doctor of Philosophy

Courses required for the Ph.D. in pharmacology may be as follows:

7:100 Chemobiodynamics
99:120 The Chemistry of Biological Materials
99:130 Metabolism
72:512 Medical Physiology
7:101 Pharmacology for Health Sciences: Pharmacy
82:187 Biometrics and Biostatistics
7:105 Pharmacology and Toxicology
7:206 Biochemical Pharmacology
7:205 Pharmacology Review
7:207 Pharmacology of Excitable Cells
7:212 Toxicology
7:280 Medical Pharmacology and Therapeutics Lecture Series

The student must complete at least one additional course in drug action or his area of interest, and individual faculty research advisors may require more than one.

Financial Aid

Financial support is available for all predoctoral and postdoctoral students in pharmacology.

Pharmaceutical and experimental approaches to drug design and dosage form concepts and tools of biological sciences are included. Offered fall semester. Prerequisites: consent of instructor.

Preparation for Health Sciences: Pharmacy

Lecture course; general principles of pharmacology, pharmaceutical actions of drugs and correlation with therapeutic use. Open to students in pharmacy and specific graduate students in the latter by consent of course director. Offered fall semester. Prerequisites: 72:100 or 72:105 or equivalent or consent of instructor.

Preparation for Health Sciences: Toxicology

Lecture course; general principles of pharmacology, pharmaceutical actions of drugs, and correlation with therapeutic use. Open to students in pharmacy and specific graduate students in the latter by consent of course director. Offered fall semester. Prerequisites: 72:100 or 72:105 or equivalent or consent of instructor.

Preparation for Health Sciences: Scientific Investigation

Lecture course; general principles of pharmacology, pharmaceutical actions of drugs, and correlation with therapeutic use. Open to students in pharmacy and specific graduate students in the latter by consent of course director. Offered fall semester. Prerequisites: 72:100 or 72:105 or equivalent or consent of instructor.

Preparation for Health Sciences: Preclinical Institutes

Lecture course; general principles of pharmacology, pharmaceutical actions of drugs, and correlation with therapeutic use. Offered fall semester. Prerequisites: 99:84 and 72:105 or consent of instructor.

Preparation for Health Sciences: Preclinical Institutes

Lecture course focusing on fundamental principles of pharmacology; drug design and metabolism, excetration, and toxicity of various classes of drugs. Offered fall semester. Prerequisites: 99:84 and 72:105 or consent of instructor.
The entering student is advised in the precomprehensive exam year by the director of the graduate school, who provides guidance in the planning of a program of formal course work and an introduction to research activities of departmental faculty. In addition to general courses in advanced physiology and biophysics, the department offers specialized formal study in cardiovascular, endocrine, environmental, sensory, memory, and nervous system physiology. The student is also asked to take a limited number of courses in other departments appropriate to meeting his or her educational aims.

Upon completion of required course work and satisfactory performance on a comprehensive examination in physiology and related areas, the student is expected to devote full time to original research, culminating in his or her preparation of a doctoral dissertation which makes a significant contribution to scientific knowledge. The student defends the dissertation in a final oral examination.

All degree candidates are expected to have supervised experiences as classroom instructors and teaching assistants as part of their graduate training program.

Financial Aid

Full-time doctoral students in physiology and biophysics are eligible for financial aid, with continued support contingent upon satisfactory progress.

Facilities

The Department of Physiology and Biophysics has a number of large research facilities available at the nearby Oakdale campus. In addition to specialized equipment in individual research laboratories, the department has modern digital computers and computer graphics systems, electron microscopes, an electron microprobe, a digital image analysis microscope, and a cell culture facility, in addition to a comprehensive facility for training in modern cellular and molecular biology research including an array of Olympus equipment. The facilities support research in cardiovascular, endocrine, sensory, memory, nervous systems, and other areas of basic science. The student is also expected to take a limited number of extramural courses in other departments appropriate to meeting his or her educational aims.

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Facilities
methodology, the department participates in extensive collaborative research with other departments, particularly in the College of Medicine. 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 and 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.

A prominent program is the development, evaluation, and field testing of a vaccine against achalasia (esophageal cancer). Examples of specific ongoing programs include investigations of the problems of aging, occupational medicine, a summer medical student primary care program for migrant farm workers, cardiovascular disease and hypertensive screening program, cancer epidemiology through the State Health Registry of Iowa and the Iowa Cancer Epidemiology Research Center (both based within the department), 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 of agricultural worker accidents and trauma. Consultation on epidemiologic problems is given widely in diverse areas of research and applied clinical and community activities. All departmental programs are enhanced through affiliations with the University of Hygiene Laboratory, Environmental Health Center, School of Public Health, College of Engineering, Health Services Research Center, and Community Health delivery programs.

Graduate Programs

The master's program offers a degree with emphasis in environmental health, biomedical, or environmental health. While pursuing a degree program, students are expected to maintain a 5.0 grade-point average. In addition, students receiving more than 8 semester hours of graduate credit in a given semester will be discharged from the program.

A joint master options exists between the Urban and Regional Planning program and Preventive Medicine and Environmental Health in the College of Medicine. This option results in an M.A. or an M.S. in Planning and an M.S. in Preventive Medicine and Environmental Health. Separate admissions to both academic units are required.

Institute of Agricultural Medicine

The Institute of Agricultural Medicine is housed in the Agricultural Medicine Research Facility on the Osage Campus. Research, teaching, and extension activities concern the safety and health problems of rural Iowans. Areas of study include environmental toxicology, comparative medicine, occupational health, the Accident Prevention Laboratory, and the Iowa Pestides Epidemiology Studies Center.

Financial Aid

A limited number of research assistantships and tuition grants are available within the department.

Admission

Application deadlines are July 15 for fall semester, December 1 for spring semester, and May 1 for the summer session. These deadlines apply only to the University of Iowa and not to non-University of Iowa students.

Minimum grade-point average requirements are 3.0 for admission to the master's program, 3.0 for the Ph.D. Acceptable completion of the Graduate Record Examination (GRE) Aptitude Test is also required. The acceptable score for most students is a combined verbal and quantitative score of 1500.

The applicant must have an undergraduate major or course background in scientific mathematics, according to his or her proposed program of graduate study. However, to be considered for admission to the master's program with emphasis on community health, applicants must be enrolled and major or minor in appropriate sciences.

Applicants who meet the requirements for the M.S. or Ph.D. programs but who do not wish to work towards an advanced degree may be admitted on Professional improvement status. All applicants are required to: (1) specify on the application form the program (M.S. or Ph.D.) to which they are applying; (2) forward three letters of recommendation; and (3) submit a short description of why they want the degree and their professional goals.

Courses

0200 Cooperative Education Internship

0220: Dynamics of Health

Survey of trends in the health of man in Western cultures, with emphasis on pathogenesis, epidemiology, and prevention to promote health and disease investigation. Offered fall semester.

0230: Intact and the Environment

Human ecology in relation to population and demonstrated effects of biological, chemical, physical, and ecological factors of environment on health status. Seminar-style, 2-hour lecture, 1-hour laboratory. Offered fall semester.

0250: Principles of Biostatistics

Basic probability concepts, including frequencies, normal and related distributions, sampling distributions, and regression. Interpretation of hypothesis testing and confidence intervals, tests of hypothesis, terminology of clinical trials and epidemiology. Designed primarily for biomedical students. Offered fall semester.

0251: Statistics

Survey of statistical methods for persons who are familiar with the basics of probability and data analysis. Emphasis on understanding and application of statistical techniques to solve problems in disease control and clinical problems. Offered fall semester.

0260: Public Health Aspects of Food and Housing

Introduces student to housing and sanitation, mechanisms of building and housing codes, their administration and enforcement, environmental health problems peculiar to residential and institutional establishments. Offered fall and spring semester.

0262: Principles of Epidemiology

Covariates in longitudinal and cohort studies; histological and temporal control of the effect of exposure; detection of survival analysis, analysis of life expectancy, and occurrence data analysis. Prerequisites: college algebra.

0263: Design and Analysis of Experiments in the Biological Sciences

Sampling methods, correlation, regression, transformations, correlation analysis, analysis of covariance, one-way and two-way analysis, multiple comparison techniques, and orthogonal contrasts. Prerequisites: College Algebra.

0264: Introduction to the Design of Sample Surveys

Techniques of surveying and sampling: elementary concepts, planning and sampling for a single population; properties of sample surveys; simple random sampling, stratified sampling, and systematic sampling, cluster sampling; general problems of design and construction, methods of survey analysis. Prerequisite: College Algebra.

0265: Environmental Health

Basic statistics for the analysis and interpretation of environmental data. Topics include student's t-test, analysis of variance, linear regression, analysis of variance, linear regression, principal components analysis. Prerequisites: College Algebra.

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Psychiatry

Department head: George Wurster

Course coordinator: Professor Payton Coates, Richard Jenkins.

School of Medicine.

The Department of Psychiatry is engaged in teaching medical students and training resident physicians for academic and clinical careers in psychiatry. It offers no degree program.

its instruction of medical students occurs primarily during their third year, in the course of a six-week clerkship.

The department maintains a four-year training program approved by the Residency Review Committee of the American Medical Association. Training experiences are available at The University of Iowa Hospitals and Clinics at the Iowa City Veterans Administration Medical Center. Additional experiences are available at affiliated institutions: the Broadlawns Hospital in Des Moines, the Iowa City Veterans Administration Medical Center in Iowa City, and the Mental Health Institute at Independence, Iowa.

The department offers an approved two-year residency in child psychiatry.

The department staff is actively involved in clinical and family studies of psychiatric disorders, and is involved in research in the fields of genetics and biological psychiatry, neurochemistry, neuropathology, and psychosocial aspects of behavior.

Many opportunities are available for students interested in research at the undergraduate level. The basic science areas of neuroscience, physiology, and pharmacology, and psychiatry. In addition, the program provides opportunities to students interested in research at the undergraduate level. The basic science areas of neuroscience, physiology, and pharmacology, and other areas of interest.

Psychology

Conducts research into the study of the physical, chemical, and biological effects of radiation and the development and widespread application of radiation-based methodologies. The program stresses the importance of these areas to scientific research, clinical medicine, and the general public.

Undergraduate Study

Two courses, 77:103 Introduction to Radiobiology and Radiobiology and Biomedical Engineering and Medical Health Physics, are open to students in the arts or professional colleges. These courses should be of interest to students who plan to enter medicine, nuclear medicine technology, environmental health, or other professions.

Graduate Programs

The M.B. program in radiation biology emphasizes the technical aspects and serves well as a minor field for students whose major interest is in another, related field.

The Ph.D. program is open to graduate students with a background in study in physics, chemistry, mathematics, biology, health sciences, veterinary medicine, or engineering. Ordinarily, the M.B. in this or a related field is required for admission to the Ph.D. program, but consideration is given to other methods of qualification.

After completion of the introductory courses, the student may emphasize a particular aspect of the field. The details of the program are arranged around previous training, interests, abilities, and career objectives. Some students elect to emphasize training in physical science, such as radiological physics or health physics. Others major in biological aspects. In either case, a broad background is required, including formal lectures, seminars, and discussions. Laboratory exercises are emphasized, and the student has the opportunity to become familiar with many types of instruments and techniques. It is recommended that a candidate for the Ph.D. have a reading knowledge of elementary German and a good understanding of biological statistics or computer programming before taking the final examination.

Radiation Biology

Program director: James W. Osborne.

The program provides in-depth training and research experience in the study of the physical, chemical, and biological effects of radiation and the development and widespread application of radiation-based methodologies. The program stresses the importance of these areas to scientific research, clinical medicine, and the general public.

Special Programs

Postdoctoral training is available by arrangement with the program chairman and individual faculty members.
Surgery

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, providing adequate patient material for both clinical and basic science research.

Laboratories provide equipment, space, and technical expertise to support teaching and a wide spectrum of clinical and scientific research. These laboratories include animal operating, tissue culture, gastrointestinal, microbiology, micro- and macro vascular, transplantation, organ preservation, cardiovascular, and neurosurgery and oncology.

Courses

751 Basic Emergency Skills 6.5 h. Basic emergency primer course in emergency medicine.
752 Vascular Research 4.5 h. Six-week course, required of certain medical students.
753 Clinical Surgery 4.5 h. Six-week course, required of certain medical students.
759/100 Emergency Room for Physician Assistant Students 759:110 Surgery Elective for Physician Assistant Students 759:151 Advanced Emergency Medicine 4.5 h. Four-week course of intensive instruction in acute trauma, surgical emergencies, and multiple trauma problems. Includes laboratory, case semantics, and the simulation laboratory.
759:152 Advanced Surgical Endoscopy 4.5 h. Experience in an actively teaching endoscopy center.
759:161 Surgical Theater 4.5 h. Experience in a surgical theater.
759:220 Emergency Room On Call 4.5 h. Training in the role of the physician when observing patients on call. Trainees perform under close supervision of house officer or staff physicians for the Emergency Service. Student evaluation based on their observations and performance in the Emergency Room.
759:222 Emergency Room Off Call 4.5 h. Training in the role of the physician when not observing patients on call. Trainees perform under close supervision of house officer or staff physicians for the Emergency Service. Student evaluation based on their observations and performance in the Emergency Room.
759:250 Basic Tissue Therapy 3.5 h. Student becomes familiar with the techniques of surgery, including principles of surgical repair, basic anatomy, physiology, and instrumentation. 759:255 Pediatrics 3.5 h. Designed for internists in pediatrics. 759:262 Trauma Surgery 3.5 h. This course is offered to surgical residents and trauma specialists. 759:263 Learning Laboratory for Teaching Assistants 3.5 h. Designed for medical students and residents. These students have the opportunity to learn basic surgical techniques and to practice their technical skills in a simulated environment.

Facilities

Physical facilities include well-equipped clinical and research laboratories. The department has a large number of surgical and medical patients, providing adequate patient material for both clinical and basic science research. The laboratories provide equipment, space, and technical expertise to support teaching and a wide spectrum of clinical and scientific research. These laboratories include animal operating, tissue culture, gastrointestinal, microbiology, micro- and macro vascular, transplantation, organ preservation, cardiovascular, and neurosurgery and oncology.

Urology

Department head: David A. Colp, M.D.
Faculty: David A. Colp, M.D., Charles G. F. Epstein, M.D., David F. D’Amico, M.D., W. Robert Menon, M.D., Richard P. Mitra, M.D.

The Urology Service at UMass Memorial Medical Center offers a wide range of services to patients with urologic problems. The Urology Service provides comprehensive, state-of-the-art care for patients with urologic diseases, including the latest diagnostic and therapeutic procedures. The service includes a large number of surgical and medical patients, providing adequate patient material for both clinical and basic science research. The laboratories provide equipment, space, and technical expertise to support teaching and a wide spectrum of clinical and scientific research. These laboratories include animal operating, tissue culture, gastrointestinal, microbiology, micro- and macro vascular, transplantation, organ preservation, cardiovascular, and neurosurgery and oncology.
The Department of Urology participates very actively in 50-111 Introduction to Clinical Medicine, which involves the entire second semester of second-year medicine. The department offers illustrative lectures and demonstrations concerning the diagnosis and treatment of diseases involving the genitourinary tract in the male and the urinary tract in the female and child.

In the third and fourth years of the curriculum in medicine, the department offers courses in diagnostic urology, reconstructive urology, urologic oncology, and the entire field of urology. In the required third-year clerkship, the department offers the basics of this 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 urologic laboratories are active and offer instruction in various urology research areas. The department offers special elective courses in these areas.

**Courses**

7u-110 Clinical Urology 3 h.
An introductory course of study on urological work; junior medical students responsible for patient care under supervision of residents.

7u-200 General Urology 4 h.
The student becomes an active member of the urological staff, spends full time in the department for four weeks; assignment in urologic department under direction of junior and senior staff.

7u-210 Advanced Urology 4 h.
Individual project either medical or clinical, correlated by chief resident, supervised by senior and junior staff; and, where applicable, a member of another clinical department or general practitioner department. Upon completion of project, the student will prepare a thesis and undergo oral examination.

7u-311 Radiology 3 h.
Full time in the departments of Urology and Radiology, where infections, contrast studies, cystoscopy, and techniques of urography are practiced and discussed in preparation for the urologic component of the radiology clerkship. Rotations alternate on a departmental basis.

7u-312 Pathology 3 h.
Participation with Urology and Pathology departments in study of urologic material derived from postmortem examinations and surgical procedures, and with study of collected pathologic material. Light microscopy and microscopic, and from research material maintained in both departments.

7u-315 Pediatric Urology 3 h.
Research and clinical study of pediatric urological problems; emphasis placed on comparative urology and surgical treatment of the genitourinary tract in the infant, child, and adolescent; clinical care may be supervised; clinical material with pediatric disease assigned as available.
The College of Nursing is an integral part of the University Health System, serving as a major resource for education, research, and patient-care activities 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 Registrars 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 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 are community health nursing service, doctors’ offices, clinics, hospitals, armed forces, the Peace Corps, the World Health Organization, the Red Cross, home and foreign missions, youth camps, and professional organizations. A professional nurse may be engaged in acute or chronic nursing, teaching, research, or private practice.

A baccalaureate degree program, such as that offered by The University of Iowa, provides college-level preparation for careers in the health care of patients and in such community agencies 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—hardly less important—of full participation in the social, cultural, and recreational activities of a highly diversified campus community. In nursing no 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-sufficiency in life.

The baccalaureate program is designed to provide both liberal arts and professional education. The basic 120-semester-hour program consists of 36 semester hours of general education courses, 43 semester hours of supportive preparatory courses, and 50 semester hours of course work in nursing. Most students complete the program in four and one-half academic years.

Course offerings are based on the concepts of health, deviations from health, and nursing interventions, 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 individuals to whom the necessity.

**Approaches to the College of Nursing**

The student may complete the entire program at Iowa, enrolling the first year in the University’s College of Liberal Arts, or transfer from an institution offering a two-year sequence of specific courses approved by the College of Nursing.

Cooperating state institutions are the two-year transfer plan include Iowa State University, the University of Southern Iowa; and Upper Iowa, Bick Creek, Marion, Cedar Rapids, Luther, Central, Simpson, North Iowa, Indian Hills, and Marshalltown colleges. Participating state institutions include Iowa Central Community College in Marshalltown, Muscatine, Clinton, Iowa Falls, Ankeny, Boone, and Fort Dodge colleges.

Completion of the two-year transfer sequence at a cooperating institution does not guarantee admission to the College of Nursing; minimum 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 this plan should contact the cooperating institution of their choice.

**Registered Nurses**

With some modifications, registered nurses who enter the baccalaureate program in nursing at least complete the same liberal arts and science courses as students with no previous nursing preparation. Registered nurses planning to enroll in the baccalaureate program at
NURSING 379

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 registered nurses.

**Expenses**
Students are the general University fee throughout the program, and purchase their own uniforms. The cost of a uniform order currently is about $110. Students must also purchase white aprons, a stethoscope, and a wrist watch. 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**
The college strongly recommends four years of English, four years of mathematics, three years of science and technology, 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 three of the five required biology courses (Organic and Inorganic Chemistry, Animal and Human Anatomy, and Human Physiology) and satisfaction of the following general education requirements:
- Rhetoric—eight semester hours; a student who has earned six semester hours of credit in English composition may complete the speech component as an academic major.
- Mathematics—three years of high school mathematics, or a score of 26 on the Advanced Placement Tests, or completion of a college course in mathematics comparable to or higher than (22D:1) Intermediate Algebra.

**Application Deadlines**
Applications must be received by January 15 for the fall semester, and June 15 for the spring 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 in which nursing is an upper-division offering. For this reason, graduation from an N-accredited 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 to allow for development of skill in a role area related to their career goals. The curriculum has a 17-semester hour core of advanced nursing courses which are designed to serve as the foundation for specialization and role preparation in specific areas. 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 courses; through selection of relevant concepts to be developed in these courses; by selection of specific courses in the supporting areas, and through appropriate credit for study in their thesis project.

Similarity, role preparation is available in three areas: education, administration, and advanced clinical practice. Because the structure of this option is flexible enough to accommodate diverse individual needs, the time required for obtaining a role is in the role preparation area. Students, for instance, may select most of their supporting course work in administration or management in order to allow for maximum preparation in that role area.

Although the courses offered by the College of Nursing emphasize a holistic approach to patients or clients, it is possible to concentrate on either the behavioral or biological dimension. Students interested in mental health nursing, for example, may elect courses in medical-surgical and psychogeriatric practice and teaching approaches. More preparation in advanced clinical practice with an emphasis on mental health nursing would further accommodate these specialty areas. The next result would be that, with the assistance of their academic adviser, students can design
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, or 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 scores 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 on a continuous basis. For review, the applicant’s file must be complete, with all relevant admission materials having been submitted. Deadline for fall and fall admission is May 1. For spring semester admission deadline is December 1. Initial course enrollment may begin any term.

All regulations of The Graduate College pertaining to academic standards, probation, and dismissal are applicable to graduate students in nursing. Transfer credits applicable to the master’s degree program are limited, and must be approved by the dean for the graduate program in nursing and by the student’s advisor.
Professional Improvement
Some nurses may wish to take course work at the University to fulfill the objectives of professional or personal improvement only. Such individuals need supervision in the professional improvement category. This admission status will allow the student to take some graduate courses in the University without commitment to a degree objective.

Admission
Applicants must have a baccalaureate in nursing and 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 Graduate College apply.

Facilities
The Nursing Building is centrally located on the University's main campus in close proximity to the colleges of Medicine, Pharmacy and Dentistry, University Hospital, the Bowen Science Building; and the Heath Science Library.

Completed in 1971, the Nursing Building consists of five floors with varied and specialized facilities. Administrative offices are located on the first floor. Faculty offices are located on every floor except the second, which is utilized entirely for classrooms, laboratories, and the Learning Resource Services. Additional classrooms and laboratories are located throughout the building. Conference rooms, student lounges, and meeting courts are conveniently located. Research facilities in the building provide quick access to computing/calculating equipment and programmable minicomputers.

Courses
Undergraduate
645 Introduction to Health and Health Care
Overview of health and health care services, with emphasis on consumer and patient care. Selected factors affecting health care systems and trends in health delivery. Prerequisite: Senior status.

500 Human Development and Behavior
Introduction to the study of human behavior through examination of psychosocial, intellectual, emotional and physical factors. Prerequisite: Senior status.

501 Nutrition
Studied with emphasis on individual needs, observation and evaluation, skills, nutrition information "reception" focused on self-evaluation; students analyze current nutritional concerns of individuals in their family's needs, based on data collected. Learning materials include: nurse's aide problem list, nutrition problems in society and higher education of health. Prerequisite: admission to the College of Nursing.

502 Pathology
Introduction to common physiological and psychological disorders of human systems as changes in tissue to be observed in basic sciences, disease and the methods used in correct tissue classification. Prerequisite: Admission to any of all areas prior to 501.

503 Sociology
Health promotion and disease prevention in individuals, families, and communities. Essential sociological and psychological perspectives and community health strategies are considered in terms of basic human needs: emphasis on behavioral interventions and evaluation skills, anticipating problems, reasoning, and combined assessment in a variety of settings. Prerequisite: 405.

5068 Management Concepts Applied in Nursing
Principles
3 s.h.

3914 Nursing Education
Nursing education is a crisis situation of society. It is a vital profession and one that is neglected. There is a need to improve the academic preparation of nurses in the area of teaching. This course focuses on the issues of nursing education and on the need for nurses to be aware of the need for change. Prerequisite: 4085 or 4095.

3915 Nursing Research
A study of research and children in nursing with emphasis on the process of conducting nursing research. Prerequisites: 4085 or 4095.

4006 Behavioral and Philosophical Foundations of Nursing
An introduction to the nature and role of the nurse as a professional in the health care system. Introduction to the ethical and moral dilemmas that nurses face. Grading: Letter grades only. Prerequisites: 3006 or 3054.

4010 Individual Study
Individual study of a topic or clinical practice offered to students of special or unusual interest. Offerings in special courses vary, depending on the needs of the student. Prerequisites: 2010 and approval of instructor.

4011 Nursing Process and Pathology
Pharmacology and psychiatric aspects of health modification and care of patients. Prerequisites: 4026, 4051, 4005, 4006 and 4056.

4012 Human Behavior
Pharmacological and psychological aspects of human behavior. Prerequisites: 3026, 3036, 3051, 4005, 4006 and 4056.

4013 Family Planning and Sexual Behavior
Family planning and contraception with emphasis on sexual problems. Prerequisites: 3056, 4005, 4006, 4010 and 4056.

4014 Family Planning and Sexual Behavior
Family planning and contraception with emphasis on sexual problems. Prerequisites: 3056, 4005, 4006, 4010 and 4056.

4016 Progress and Clinical Nursing Practice
Development of theories and skills in clinical nursing practice. Prerequisite: 4010.

4017 Basic Cardiac Life Support Indicator
Clinical courses.

4019 In-Service Education Planning
Development of the plans and processes of in-service education with emphasis on the development of educational programs and evaluation of in-service education. Prerequisites: 4014 or consent of instructor.

4020 Introduction to Gerontology
A survey of the elderly's life style and the challenges they face. Prerequisite: 4014 or consent of instructor.

4023 Seminar: Health Education
A seminar covering the fundamentals of health education and health promotion. Prerequisite: 4014 or consent of instructor.

4025 Seminar: Health Education
A seminar covering the fundamentals of health education and health promotion. Prerequisite: 4014 or consent of instructor.

4026 Sociology of Health and Illness
An introduction to the sociology of health and illness. Prerequisite: 4014.

4028 Sociology of Health and Illness
An introduction to the sociology of health and illness. Prerequisite: 4014.

4030 Family Counseling and Family Therapy
A study of family counseling and family therapy. Prerequisites: 4014 and 4056.

4032 Family Counseling and Family Therapy
A study of family counseling and family therapy. Prerequisites: 4014 and 4056.

4034 Psychological Assessment
The role of the nurse in the psychological assessment of the patient. Prerequisite: 4014.

4036 Psychological Assessment
The role of the nurse in the psychological assessment of the patient. Prerequisite: 4014.

4038 Psychological Assessment
The role of the nurse in the psychological assessment of the patient. Prerequisite: 4014.

4040 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4042 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4044 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4046 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4048 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4050 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4052 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4054 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4056 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4058 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4060 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4062 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4064 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4066 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4068 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4070 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4072 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4074 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4076 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4078 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4080 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4082 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4084 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4086 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4088 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.

4090 Population Problems of Health Education
Population problems of health education. Prerequisite: 4014.
Graduate

30:202 Conceptual and Theoretical Framework for Nursing Research 2 s.h.

Conceptual and theoretical frameworks presented in 30:200 provide the process for selecting practice questions and the basic foundation for development of hypotheses. Prerequisites: 30:100-101.

30:203 Leadership in Nursing Theory and Practice 2 s.h.

Covers leadership, and research findings related to teaching and educational characteristics of professionals. Analysis of various situations using leadership, teaching, and educational characteristics. Applications in nursing and health care settings. Prerequisites: 30:100, 30:150-151.

30:205 Professional Behavior in Nursing 2 s.h.

Behavioral and social issues related to professionals in nursing; professional behavior as a component of the delivery of health care services. Prerequisite: permission of instructor.

30:206 Methods of Research in Nursing 2 s.h.

Focus on the development of the scientific approach to knowledge and to problem solving relationships between nursing research and the profession. Prerequisites: 30:100-101; 30:151.

30:211 Health Education Research 1 s.h.

Focus on the evaluation of health education programs and the use of related research. Prerequisite: permission of instructor.

30:212 Managerial and Organizational Skills 1 s.h.

Management of time, budgeting, personnel, and other organizational skills required in a health care setting. Prerequisites: 30:101; 30:151.

30:221 Theories of Child Development 1 s.h.

Theories of child development from an interdisciplinary perspective. Prerequisite: 30:100.

30:222 Nutrition and Child Development 1 s.h.

Focus on assessment of nutrition and development for children and adolescents. Prerequisites: 30:100; 30:151.

30:223 Aging and Development of Adults 1 s.h.

Theories of aging and development for adults. Prerequisite: 30:100.

30:224 Human Sexuality 1 s.h.

Focus on theories and research related to human sexuality. Prerequisite: 30:100.

30:225 Health Policy and Administration 1 s.h.

Study of health care delivery systems and health policy from a political perspective. Prerequisite: 30:100.

30:226 Federal Programs and Services for Children 1 s.h.

Focus on the delivery of services for children with disabilities such as hearing, speech, and visual impairments. Prerequisites: 30:100-101.

30:227 Family Health Care Delivery Systems 1 s.h.

Focus on health care delivery systems and the delivery of services for families. Prerequisite: 30:100.

30:228 Community Health Nursing 1 s.h.

Focus on community health nursing, including community health assessment and planning, and the delivery of health care services at the community level. Prerequisites: 30:100-101; 30:150-151.

30:229 Health Education 1 s.h.

Focus on the development and delivery of health education programs for children and adults. Prerequisite: 30:100.

30:231 Managerial and Organizational Skills 1 s.h.

Management of time, budgeting, personnel, and other organizational skills required in health care settings. Prerequisites: 30:101; 30:151.

30:241 Child Health Nursing 1 s.h.

Focus on the provision of nursing care for children and families with special health care needs. Prerequisite: 30:100.

30:242 Obstetric Nursing 1 s.h.

Focus on the provision of nursing care for women during pregnancy, labor, and delivery. Prerequisite: 30:100.

30:243 Psychiatric-Mental Health Nursing 1 s.h.

Focus on the provision of nursing care for patients with psychiatric and mental health problems. Prerequisites: 30:100; 30:150-151.

30:244 Geriatric Health Nursing 1 s.h.

Focus on the provision of nursing care for older adults. Prerequisites: 30:100; 30:150-151.

30:245 Family-Centered Care 1 s.h.

Focus on the provision of nursing care for families and members of the family system. Prerequisites: 30:100; 30:150-151.

30:246 Community Health Nursing 1 s.h.

Focus on community health nursing, including community health assessment and planning, and the delivery of health care services at the community level. Prerequisites: 30:100-101; 30:150-151.

30:247 Community Health Nursing 1 s.h.

Focus on community health nursing, including community health assessment and planning, and the delivery of health care services at the community level. Prerequisites: 30:100-101; 30:150-151.
R5.290 Trauma Interventions of Mental Health Nursing 3 a.h.
Theories and concepts of mental health and mental illness, treatment modalities and their applications in mental health nursing practice.

R5.291 Nursing Administration: Process, Roles, and Strategies 2 a.h.
Policies and responsibilities of the nurse administrator, emphasis on the administration of nursing, procedures for nursing staff management in a hospital setting, with other organizations as case-study obstacles; includes a distance computer and a weekly practice of four hours minimum. Prerequisites: R5.251 and R5.254.

R5.292 Nursing Administration: Process, Roles, and Strategies I 3 a.h.
Analysis of the functions and responsibilities of the nurse administrator, emphasis on strategies used by the nurse-administered administration in a hospital setting with other organizations as case-study obstacles; includes a distance computer and a weekly practice of four hours minimum. Prerequisites: R5.251, R5.252, and R5.254.

R5.295 Nursing Administration: Process, Roles, and Strategies II 2 a.h.
Assessment, formulation, and interpretation of day-oriented, week-oriented, and month-oriented quality indicators in clinical and administrative practice of four years minimum. Prerequisites: R5.251, R5.252, and two nursing administration courses.

R5.296 Advanced Topics in Nursing Research and Theory 3 a.h.
Prerequisite: consent of instructor.

R5.299 Internships 6 cr.
The pharmaceutical sciences are concerned with the discovery, manufacture, and dispensing of medicinal products and monitoring of their activity. The pharmacist is also trained to identify, analyze, direct, combine, and standardize these medicines, and serves his/her community as a prime source of information on health topics. Although he/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 use, and activity in the normal individual as well as in the ill patient, and must be familiar with tasks for the treatment, 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, toxicity, contraindications, etc. Another important role of the pharmacist is the communication of knowledge of drugs to the patient.

Nearly everyone is familiar with the community pharmacist and the pharmacy in which he or she practices. This size and type of practice may vary—community pharmacies may be large or small, operated by individuals or by corporations. The pharmacist who works for a large pharmaceutical corporation may not have the same opportunity for advancement as he who practices in a community pharmacy. There are many more than 100,000 men and women who practice in community pharmacies.

Another group of pharmacists is employed in pharmaceutical research. The government also employs pharmacists in the Public Health Service, Veteran's Administration, Food and Drug Administration, and the armed forces.

Many pharmacists assume administrative positions in industry, including manufacturing, research and development, control, marketing and advertising. In addition to these pharmacists, numerous others are employed in pharmaceutical sales. Pharmacy training is especially valuable to these men and women, who are responsible for acquainting physicians, dentists, veterinarians, and other pharmacists with drug products. In the United States, more people are receiving total health care than ever before. This 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.
The Professional Curriculum

First Year
First Semester
48:13 Pharmacy Math 3 s.h.
37:3 Principles of Animal biology 5 s.h.
4:121 Organic Chemistry I 3 s.h.
4:101 Elementary Qualitative Analysis 4 s.h.
Total 15 s.h.

Second Semester
48:14 Pharmacy Orientation 2 s.h.
9E:1 Principles of Economics 4 s.h.
4:120 Organic Chemistry II 3 s.h.
4:141 Intermediate Chemistry Laboratory I 3 s.h.
4:50102 Principles of Human Anatomy 3 s.h.
** Elective 3 s.h.
Total 15 s.h.
*Also offered first semester for students on a 3-5 program only.
** 18 semester hours of electives are required, of which at least eight must be taken in the P-4 year.

Second Year
First Semester
48:23 Pharmacology I 4 s.h.
96:182 Biochemistry for Pharmacy Students 4 s.h.
81:127 General Microbiology 4 s.h.
*46:102 Principles of Human Anatomy 3 s.h.
Total 15 s.h.

Second Semester
48:24 Pharmacology II 4 s.h.
48:22 Pharmacological Sciences: Health Care Systems 4 s.h.
46:128 Medical 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 Medical Chemistry: Natural Products II 4 s.h.
46:203 Introduction to Human Pathology 4 s.h.
71:101 Pharmacology for Health Sciences: Pharmacy I 5 s.h.
46:35 Pharmaceutical Sciences: Practice Management 3 s.h.
Total 16 s.h.

Second Semester
46:132 Medical Chemistry: Natural Products III 4 s.h.
71:103 Pharmacology and Toxicology 3 s.h.
46:55a Pharmacology III 3 s.h.
48:120 Clinical Pharmacy: Case Study 3 s.h.
46:61 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 Pharmacotherapeutics IV 4 s.h.
46:80 Clinical Pharmacy: Community Pharmacy 2 s.h.
46:61 Clinical Pharmacy: Drug Information 2 s.h.
46:111 Clinical Pharmacy: Therapeutics I 2 s.h.
** Electives 4 s.h.
Total 16-16 s.h.
Each P-4 student must complete six clinical clerkships (usually three each semester). Two of these are required (46:80 and 46:41). Some of the remaining clerkships may be used to satisfy the P-4 electives.

Second Semester
46:80 Clinical Pharmacy: Community Pharmacy 2 s.h.
46:112 Clinical Pharmacy: Therapeutics II 2 s.h.
** Electives 6 s.h.
Total 16-16 s.h.
*May be taken in either semester.
** A minimum of eight of 12 s.h. of electives must be taken in the P-4 year.

Professional Electives
46:48 Community Pharmacy Retailing 3 s.h.
46:50 Pharmaceutical Chemistry: Drug Analysis 3 s.h.
46:52 Seminar Seminar 1 s.h.
46:55 Non-Prescription Drugs 2 s.h.
46:50 Clinical Pharmacy: Family Practice Therapeutics 2 s.h.
46:55 Clinical Pharmacy: Psychiatric Therapeutics 2 s.h.
46:54 Hospital Pharmacy: Radiopharmacy 3 s.h.
46:55 Clinical Pharmacy: Surgical Therapeutics 3 s.h.
46:55 Clinical Pharmacy: Geriatric Therapeutics 2 s.h.
46:87 Clinical Pharmacy: Neurology 2 s.h.
46:89 Clinical Pharmacy: Elective Clerkship 1-6 s.h.
46:101 Pharmacy: Projects 1-3 s.h.
46:102 Physical Pharmacy 3 s.h.
46:104 Pharmacokinetics and Biopharmacokinetics 3 s.h.
46:105 Industrial Pharmacy Survey 2-5 s.h.
46:107 Hospital Pharmacy Survey 3 s.h.
46:106 Hospital Pharmacy Survey 5 s.h.
46:114 Advanced Clinical Pharmacy 4 s.h.
46:120 Clinical Pharmacy: Psychopharmacology 4 s.h.

46:135 Perspectives in MCP Research 3 s.h.
46:136 Introduction to Medicinal Chemistry: Natural Product Research 1-2 s.h.
46:147 Introduction to Research Methods 3 s.h.
46:148 Communication Skills for Pharmacists 3 s.h.
Graduation: the baccalaureate program in pharmacy requires the student to complete satisfactorily the required courses in addition to 18 semester hours of electives and achieve a minimum grade-point average of 2.0 for all work undertaken.
For rules and regulations concerning academic probation, good-standing, credit by examination, maximum schedule, second-grade-only option, waiver or substitution of courses, cancellation or registration, drop date and correspondence study, see the "College of Pharmacy" section in the current schedule of Courses.

Admission
Application to the College of Pharmacy requires the following preprofessional course work:

Mathematics: two or four semester hours of a satisfactory differential and integral calculus course.

Physics: a one- or two-semester course in basic physics. A one-year animal biology or zoology course may be substituted if the student has completed a one-year course in either of the sciences demanded by the physical laboratory of the second semester of the first professional year.

Students who have minor 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 cumulative grade-point average on all college work presented for admission.

Fulfillment of these requirements does not ensure admission to the college. From applicants who meet 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 course in organic chemistry, biology or zoology, economics and quantitative analysis. Students who plan to enroll in a community college for two years before transferring to the UI college should consult the dean of the College of pharmacy.
Pharmacy 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 course work 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-pharmacy 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 applied toward the pharmacy degree.

**Doctor of Pharmacy Program**

The Doctor of Pharmacy (Pharm. D.) program is a two-year, post-baccalaureate professional degree program which combines didactic course work and clinical clerkship. The major goal of the program is to provide the health-care system with pharmacists who are specifically prepared to undertake an extended role in monitoring, evaluating, and optimizing drug therapy in hospitalized and ambulatory patients. This program is available to all graduates of highly qualified pharmacy graduates.

Prospective students may obtain application materials for the Pharm. D. program by writing to The University of Iowa, College of Pharmacy, Iowa City, Iowa 52242.

**Graduate Programs**

The college has graduate programs in each of the four academic divisions. Master of Science degrees and Doctor of Philosophy programs are available in pharmaceutical sciences, medicinal chemistry, medicinal chemistry and pharmaceutical biochemistry, and pharmaceutical economics. A Master of Science degree is available in clinical-hospital pharmacy.

**Advanced Study in the Pharmaceutical Sciences**

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 of pharmacy, in government agencies, and in a number of health-related professional organizations.

The application deadline is grate-point average for admission. GRE scores and other letters of recommendation are required as a part of the admission process. The requirements for maintaining good standing are the same as those of the Graduate College. The academic requirements for maintaining good standing and for graduation are determined by individual divisions of the College of Pharmacy.

**Facilities**

The Pharmacy Building is located in the Health Center complex on the University's main campus, in close proximity to the college of Medicine, Nursing, and Dentistry; University Hospitals; the Basic Sciences Building; and the Health Sciences Library.

The Pharmacy Building is a five-story structure designed to provide modern facilities on a comprehensive program of pharmacy education. In addition to classrooms, an auditorium, and learning resource center, the building houses well-equipped separate laboratories for instruction at the undergraduate and graduate level.

The Pharmaceutical Sciences Division of the college serves as a teaching unit as well as a service center. Here undergraduate and graduate students have the opportunity to learn methods of large-scale pharmaceutical product development and production.

The Iowa Drug Information Service (IDIS) is a service division of the college. IDIS serves as a central repository and distribution center of specialized information on drugs and drug therapy. IDIS reaches subscribers throughout the world. It also plays an important educational role for pharmacy students.

In the clinical pharmacy program, students work with health professionals and have the opportunity to monitor drug therapy in hospitalized and ambulatory patients, under the supervision of a clinical instructor in pharmacy, medicine, and related disciplines. The various clerkships in which students are involved include many areas of the University and Veterans Administration hospital and the family practice clinics at O'Farrell Health Center. A special emphasis is placed on the development of statistically sound self-contained clinical research protocols.

**Courses**

**Pharmacy Pharmacology**

Application of systems of weights and measures to pharmaceutical calculation in the dosage form. Pharmacology of therapeutic agents. Introduction to the chemistry and pharmacology of specific drugs. Lecture and laboratory in spring and fall semesters.

**Pharmacy Pharmacokinetics**

Introduction to the science and practice of pharmacokinetics. Topics include absorption, distribution, metabolism, and excretion of drugs. Lecture and laboratory in spring and fall semesters.

**Pharmacy Practice**

Introduction to the practice of pharmacy. Topics include professional and ethical issues, the economic aspects of pharmacy practice, the pharmacist's role in public health, and an introduction to the use of computers in pharmacy. Lecture and laboratory in fall semester.

**Graduate Pharmacoeconomics**

Advanced study in the administration of pharmacy practice. Topics include hospital and ambulatory pharmacy practice, pharmacy management, health economics, and pharmacy economics. Lecture and laboratory in fall semester.

**Advanced Mathematics for Pharmacists**

Advanced mathematics for research in pharmaceutical sciences. Topics include advanced calculus, differential equations, and linear algebra. Lecture and laboratory in fall semester.

**Advanced Multivariable Calculus for Pharmacists**

Advanced mathematics for research in pharmaceutical sciences. Topics include advanced calculus, differential equations, and linear algebra. Lecture and laboratory in fall semester.

**Advance Pharmaceutical Calculations**

Advanced mathematics for research in pharmaceutical sciences. Topics include advanced calculus, differential equations, and linear algebra. Lecture and laboratory in fall semester.

**Advanced Topics in Pharmaceutical Calculations**

Advanced mathematics for research in pharmaceutical sciences. Topics include advanced calculus, differential equations, and linear algebra. Lecture and laboratory in fall semester.

**Advanced Topics in Pharmaceutical Calculations**

Advanced mathematics for research in pharmaceutical sciences. Topics include advanced calculus, differential equations, and linear algebra. Lecture and laboratory in fall semester.

**Advanced Topics in Pharmaceutical Calculations**

Advanced mathematics for research in pharmaceutical sciences. Topics include advanced calculus, differential equations, and linear algebra. Lecture and laboratory in fall semester.
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 the state in carrying out 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 closer contact with the citizens." 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 anthropology, business administration, chemistry, communication and theatre arts, economics, education, engineering, English, French, geology, geography, German, history, home economics, journalism, Latin, letters, mathematics, nursing, physical education, political science, psychology, religion, social work, sociology, Spanish, and zoology. Noncredit courses offering CEU awards are available in areas such as advertising, medical technology, nursing, technical management, mathematics review, religious studies, and secretarial skills.

There is a $5 enrollment fee. The course fee is $30 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 Seashore Hall.

In cooperation with the Iowa Department of Defense, the University offers many correspondence courses to men and women in the armed services. Armed forces personnel should ask their education officer for information. Veterans may enroll for correspondence courses concurrently with other academic study under Public Law 92-50. Veterans are referred to the 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 where they may best serve the off-campus students and 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 engineering are scheduled on a contractual basis; courses in liberal arts, business administration, and education require enough enrollees to meet course expenses. For information, write to Off-Campus Courses and Programs, W400 Seashore Hall.

Saturday and Evening Class Program
This program provides credit course offerings for part-time undergraduate, graduate, or unclassified students. Courses are offered from schools and departments of the University. For a Saturday and Evening Class Program catalog, write to Saturday and Evening Class Program, W400 Seashore 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 non-credit audio conferences called telebridge. For information, write to the Center for Credit Programs, W400 Seashore Hall.

Education Tests
Standards and scores developed at The University of Iowa are published and distributed as a non-profit basis to schools, public agencies, and industrial times in Iowa and throughout the nation. For catalogs, write to Education Tests, W316 Seashore 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
Continuing Education

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 college and the various colleges, departments, and disciplines within the University. The marshaling of appropriate programs, coupled with the professional planning and execution of conferences and other non-form 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 academic 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 schedule these activities through the conference center office and to utilize the conference facilities, dining services, and other academic reservations 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 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 conference center for Conferences and Institutes.

Radio Broadcasting Services

WSUI and KSUI-FM serve the needs and interests of the people of eastern Iowa with 18 hours of daily programming which extends the resources and activities of the University. The broadcast schedule consists of educational, cultural, and non-commercial programming not available elsewhere. As an affiliate of National Public Radio (NPR), WSUI contributes program materials to network of more than 200 non-commercial radio stations. The main studios and offices are located in 3300 Engineering Building, and a free copy of the stations' Program Guide may be obtained by writing to their 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 citizens 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;
- Consultation services, ranging from answering "how-to" questions to saving on statewide government committees dealing with major concerns of state and local governments.

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 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 a liaison service 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 certification 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.

Iowa Lakeside Laboratory

The Division of Continuing Education has general administrative supervision of the Iowa Lakeside Laboratory, a summer Harvunding for the biological sciences on 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 two years 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 80 acres. One tract is reserved for biological research, the other for University-wide activities. Developments in the short term are anticipated to include provision of an access road, water supply, electric power, maintenance storage facilities, a boathouse and sailing facilities, field archery course, facilities for handicapped persons, and picnic areas. A small nature lodge is available to school groups.

Audiovisual 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 a full range of services in...
**Instructional Development**

The Audiovisual Center staff is able to assist faculty and staff in the designing and planning of learning facilities 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 16mm instructional films, available on campus without charge for instruction and curriculum-related 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, slides, filmstrip, opaque, and overhead projector; portable projection screen; 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 conferences and/or 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, grapha, lettering, etc.
- Audio—recording, editing, duplication, transcription service
- Motion picture—scripts, cinematography, editing, and printing laboratory
- Photography—portraits, passports, slide shows, filmstrips, slides; slide duplication, printing and processing services
- Telecine—video production, color and black-and-white (1-inch, 3/4-inch, and cassette); systems design; equipment maintenance; portapak rental
- Fabrication—design and construction of displays, specialize audiovisual equipment and furniture
- Marketing—sales, distribution, second marketing of University-originated products and services.

**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.
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: S.J. Brownlee, Emmetburg
Vice President: Peg Anderson, Bettendorf
Penny G. Harris, Cedar Rapids
Ann Jorgensen, Garrison
John McDonald, Dales Center
June Murphy, Des Moines
Arthur Nus, Carroll
Fred W. Noling, Waterloo
Peter J. Wesstrand, Essex
Executive secretary: H. Wayne Richey

Central Administration
President: James O. Fredman
Vice-President for Academic Affairs and Dean of Faculties Richard D. Remington
Vice-President for Educational Development and Research, Dean of the Graduate College: Duane C. Spierstraasch
Vice-President for Finance and University Services: Randall F. Bezanson
Vice-President for Student Services and Dean of Academic Affairs: Philip O. Hubbard

Academic Affairs
Vice-President and Dean of Faculties: Richard D. Remington

College of Business Administration
Acting Dean: Emmett J. Vaughan
Industrial Relations Institute Director: Anthony J. Sitron
Institute of Accounting Research Director: William R. Kinley
Institute of Economic Research Director: Jeran Barnard
Institute of Insurance Education and Research Director: Emmett J. Vaughan
Institute of Entrepreneurship Management: Emmett J. Vaughan
Labor Center: Emmett J. Vaughan
Management Center: Emmett J. Vaughan

College of Dentistry
Dean: James H. McLaran
Downs Institute for Dental Research Director: Ian McKechnie

College of Education
Dean: Charles W. Case
Iowa Institute for School Executives Director: George A. Chambers

College of Engineering
Dean: Robert G. Herling
Institute of Hydraulic Research Director: John P. Kennedy

Graduate College
Dean: Duane C. Spierstraasch
Dean of Advanced Studies: Ronald W. Ruhza

College of Law
Dean: R. William Harris

College of Liberal Arts
Dean: Howard Lutzer
School of Art and Art History Director: Walter J. Tomsen
School of Journalism and Mass Communication Director: Kenneth Branch
School of Letters Acting Director: Richard Lloyd-Jones
School of Library Science Director: Carl F. Orgen
School of Music Director: Marilyn F. Bonville
School of Religion Director: John P. Boyle
School of Social Work Director: Ralph E. Anderson

College of Medicine
Dean: John W. Eckstein

College of Nursing
Dean: Geraldine Finley

College of Pharmacy
Dean: Dale E. Wurster

Division of Continuing Education
Dean: Robert F. Reay
Audiovisual Center Director: William G. O'grady
Center for Conferences and Institutes Director: Russell A. May
Center for Credit Programs Acting Director: M. Dean Jones
Community College Affairs Director: Duane G. Anderson
Institute of Public Affairs Director: Clayton Ringenberg
Iowa Lakeside Laboratory Director: Richard V. Bohler
Macleod Field Campus Director: N.R. Hotzepeil
Radio Stations WSGU-KSUI Director: George S. Klingler

Iowa Center for the Arts
Chair: Philip G. Hubbard

Libraries
University Librarian: Dale M. Bentz
Museum of Art
Director: Margaret Keyes

Old Capitol
Director: Philip H. Hubbard

Summer Session
Director: Philip G. Hubbard

Educational Development and Research
Vice-President: Duane C. Spristerbergh
Division of Sponsored Programs
Director: Margaret E. Hoppin
Office of Project Development
Director: Jay Semel

Institute for Child Behavior and Development
Director: Gerald S. Solomon

Health Services Research Center
Director: Samuel Lewey
Office of International Education and Services
Director: Stephen W. Anum
Weeg Computing Center
Director: James W. Junson

Public Information and University Relations
Director: Dwight E. Jensen

Environmental Health and Safety
Director: David W. Drummond

Radiation Protection
Director: William E. Taylor

State Archaeologist
Duane C. Anderson

University House
Acting Director: William J. Farrell

University Press
Director: John Simmons

Institute of Urban and Regional Research
Director: John W. Fuls

Student Services
Vice-President: Philip G. Hubbard

Admissions
Director: John E. Moore
Registrar
Dean of Convocations and Records: W. Albert Cox Registrar: Jerold W. Dallum

Residence Services
Director: George L. Droll

Hancher Auditorium
Director: James H. Wuebbenhaus

Iowa Memorial Union
Director: Jean Kendall

Career Services and Placement
Director: University Counseling Service
Director: Ursula Delworth
Special Support Services
Director: Paul Shing

Student Financial Aid
Director: John E. Mohr

University Examination and Evaluation Services
Director: T. Anne Casey

Orientation
Director: Emil Rindarspycher

Campus Programs and Student Activities
Coordinator: Kevin Taylor

Services for Handicapped
Coordinator: Sharon Van Meter

Women's Resource and Action Center
Coordinator: Patricia Dowd

Finance and University Services
Vice-President: Randall Beazanson

Business Office
Business Manager and Treasurer: Ray B. Mosman Controller and Secretary: Leonard R. Brink

Director of Purchasing: Wayne F. Chadima

Physical Plant
Director: Duane A. Nollach

University Personnel Service
Director: Fred H. Bodeker

Facilities Planning and Utilization
Director: Richard E. Silvan

University Architect
Richard R. Jordan

Intercollegiate Athletics for Men
Director: Clemmer W. Eldred

Intercollegiate Athletics for Women
Director: Christine Grant

Recreational Services
Director: Harry R. Gertner

University Health Services
Assistant to the President for Health Services: John W. Colliton

University Hospitals and Clinics
Director: John W. Colliton

Psychiatric Hospital
Director: George Windauer

State Hygienic Laboratory
Director: William J. Hauser

University Hospital School
Director: Alfred Healy

Student Health
Director: Harley G. Fieldick

Iowa Specialized Child Health Services
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: Mary 1. 1. 1962. In this listing, the year of first appointment follows the departmental identification, and the year of present appointment is given in parentheses.


Abel, Marvin, S.K.N. Iowa 1972; instructor, Hygiene, 1979

Aldana, Rafael E., B.A. Luther 1965, M.D. Iowa 1971; clinical assistant professor, Family Practice, 1972 (1977)

Alou-Yoffeau, Menahem M., M.D., B.Ch. Cairo (Egypt) 1970; assistant professor, Radiology, 1979


Amers, Dennis, M.D., M.A. Iowa 1971; clinical assistant professor, Family Practice, 1977 (1979)

Ames, Thomas, M.D., B.Ch. Cairo (Egypt) 1970; assistant professor, Radiology, 1979

Arends, Paul E., B.A. Iowa 1969; M.A. Iowa 1969; professor, School of Social Work, 1979

Arends, Clifford D., M.D. Iowa 1951; assistant professor, Orthodontics, 1974


Arends, Darrel D., M.D. Iowa 1956; associate professor, Orthodontics, 1974

Arth, Margaret, B.S., M.D., B.Ch. Cape Town (South Africa) 1964; assistant professor, Surgery, 1978

Arthur, Charles R., B.S. Naval 1953, M.S.W. Iowa 1957; assistant professor, School of Social Work, 1961


Arthur, David E., B.A. Iowa State Teachers 1930, M.S.E.E. Iowa 1930; associate professor, University of California, Berkeley 1974; associate professor, Computer Science, 1974 (1979)

Arthur, Edward L., M.D. Iowa 1965; associate professor, Family Practice, 1972


Arnold, Arthur C., B.A. California State, Fullerton 1932; associate professor, School of Education, 1976 (1979)

Arndt, Bruce, B.S. Drake 1974, Ph.D. Wisconsin 1978; clinical assistant professor, Pharmacology, 1979

Arndt, Margaret A., B.A. Wheaton 1930, M.A. New York 1941; Ph.D. 1956; professor, School of Art and Art History, 1958 (1977)

Arre, Vartan, M.B., B.Ch. Lebanon (Syria) 1969; assistant professor, Obstetrics 1976


Aron, Louis E., B.S. E.E. Central Missouri State Teachers 1930, M.S. Wisconsin 1941; Ph.D. Iowa 1946; professor, Physics, 1942 (1949)

Aronoff, Leo, M.D., B.S. B.S. Cape Town (South Africa) 1964; assistant professor, Surgery, 1969


Aronson, Leonard D., B.A. Iowa State Teachers 1930, M.S.E.E. Iowa 1930; associate professor, University of California, Berkeley 1974; associate professor, Computer Science, 1974 (1979)

Aronson, Samuel, B.A. School of Social Work, 1947 (1949)

Aronson, Katz, B.S. Iowa State 1946; associate professor, Music and Dramatic Arts, 1963

Aronson, Leonard, B.S. Iowa 1963; M.D. Chicago 1967; associate professor, Obstetrics and Gynecology, 1963

Aronson, Charles V., B.S. Nebraska 1965, M.A. 1967; Ph.D. Pittsburgh 1962; associate professor...


Residence

720—1.4(262)
Classification of residents and nonresidents for admission and fee purposes.

1.4(1) General.

a. A person enrolling at one of the three state universities shall be classified as a resident or nonresident for admission, fee and tuition purposes by the registrar or someone designated by the registrar. The decision shall be based upon information furnished to the student and other relevant information. The registrar, or designee, is authorized to require such written documents, statements, verification, or other evidence deemed necessary to determine the domicile of a student. The burden of establishing that a student is domiciled in Iowa is upon the student.

b. In determining residency or nonresidency classification, the usual residence is essentially one of domicile. In general, the domicile of a person is that place which is permanent in nature and the place of habitual residence. It is the home to which, whenever the person is absent, the person has the intention of returning.

c. Under these regulations, a resident student is defined as one who is domiciled in the state of Iowa.

d. A nonresident student is defined as one whose domicile is elsewhere. A student shall not be considered domiciled in Iowa unless the student is a continuous physical resident in Iowa and intends to make a permanent home in Iowa.

e. A person who comes to Iowa from another state or country and enrolls in any institution of postsecondary education for a full program or substantially a full program, and has not lived within the state of Iowa for the twelve months prior to the beginning of the term for which resident classification is sought.

1.4(2) Facts.

a. A person who has been charged as a nonresident for tuition purposes, may be reclassified as a resident so long as such domicile is maintained, even though circumstances may require extended absences or extended periods of residence.

b. A person who claims to have a place of domicile in Iowa when it is required that a place of domicile in Iowa be shown shall be subject to the usual proceedings for the purpose of establishing domicile in Iowa.

c. The following facts and circumstances, although not necessarily conclusive, have probative value in support of a claim for resident classification:

(1) Student is in Iowa for ten consecutive months, and the primary reason for being there is to pursue a full-time course of study.

(2) Student has ever lived in Iowa for a period of twelve months.

(3) Student has siblings in Iowa.

(4) Former domicile is the state or country of current residence.

(5) Ownership of property in Iowa.

(6)对学生 is a United States citizen.

(7) Provide satisfactory documentation that he or she has an Iowa address.

Any resident not meeting these standards will be presumed to be a nonresident for tuition purposes and shall subject to the usual proceedings for the purpose of establishing domicile in Iowa.

g. Legislative effective July 1, 1977, requires that military personnel who claim residence in Iowa (home of record) will be required to the same method of proof of employment in Iowa domicile.
720—1.5(262) Registration and transcripts—general.

A person may not be permitted to register for a course or course of a state board or report institute until any delinquent account owed by the person to an employer or any affiliated organization for which an institution acts as fee agent has been paid.

A state board of report institutes may withhold admission from the academic record of a person who will any delinquent accounts owed by the person as an institution acts as a fee agent for which it has been paid.

Admission Rules Common to the Three State Universities

720—1.1(262) Admission of undergraduate students directly from high school.

Students desiring admission must must the requirements in this section and also any special requirements for the curriculum, school, or college of their choice.

Applicants must meet a formal application for admission, together with a $10.00 application fee, and have their secondary school provide a transcript of their academic record, including credits and grades, rank in class, and certification of graduation. Applicants must also submit scores from the American College Test (ACT) or the Scholastic Aptitude Test (SAT), or equivalent, as determined by each university. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English. Applicants may be required to submit additional information or tests to support their applications.

1. The University of Iowa requires high schools who have the subject matter background as required by the Iowa state university and rank in the upper one-half of their graduating class will be admitted.

Applicants who are not in the upper one-half of their graduating class may, after notification of their academic and test records, and at the discretion of the admissions officers—

(a) be admitted conditionally,

(b) be required to enroll for a tryout period during a preceding summer session, or

(c) be denied admission.

1.1(2) Graduates of accredited high schools in other states.

Graduates of accredited high schools in other states may be admitted to the university, but must meet at least the same requirements as graduates of Iowa high schools. The options for conditional admission or summer trial enrollment may not necessarily be offered to these students.

1.1(3) Applicants who are graduates of non-approved high schools.

Applicants who are graduates of non-approved high schools will be considered for admission in a manner equivalent to students who approved high schools, but additional emphasis will be given to scores obtained on standardized examinations.

1.1(4) Applicants who are not high school graduates.

Applicants who are not high school graduates, but whose courses have been graduated, may be considered for admission. In such cases, the university will require academic data in the form that it stipulates and academic record for a course of study in high school which will demonstrate that they are adequately prepared for academic study.

Students with superior academic records may be admitted, on an individual basis, for part-time university study while enrolled in high school or during the summer prior to high school graduation. In such cases, exceptional students may be admitted as full-time students in a regular university before completing high school. Early admission to a regular university is provided for persons whose academic achievement and personal and intellectual maturity clearly suggest readiness for collegiate-level study. Each university will specify requirements and conditions for early admission.

720—1.2(262) Admission of undergraduate students by transfer from other colleges.

Students desiring admission must meet the requirements in this section and also any special requirements for the curriculum, school, or college of their choice.

Applicants must submit a formal application for admission, together with a $10.00 application fee, and request that each college they have attended send an official transcript of record to the admissions office. High school academic records and standardized test results may also be required. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English.

1.2(1) Transfer applicants.

Transfer applicants with a record of twelve semester hour of graded credit from regionally accredited colleges or universities, who have earned a Carnegie (2.00 based on a 4.00 grading point) for all college work previously attempted, will be admitted. Higher academic standards for admission of students who are not residents of Iowa.

Applicants who have not maintained a Carnegie or who are under academic suspension from the last college attended may be admitted on a conditional basis for academic evaluation. The admission officer—

(a) be admitted conditionally,

(b) be required to enroll for a tryout period during a preceding summer session, or

(c) be denied admission.

1.2(2) Admission of students with fewer than twelve semester hours of college credit.

Admission of students with fewer than twelve semester hours of college credit will be based on high school records and secondary school test records in addition to review of the college record.

1.2(3) Transfer applicants under disciplinary suspension.

Transfer applicants under disciplinary suspension will not be considered for admission until information concerning the reason for the suspension has been received from the college granting the suspension.
Supplemental Specific Rules for The University of Iowa

270—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 appropriate records received by the director of admissions. Students may not be accepted as candidates and they have been based on an estab__

270—2.3(262) College of Business Administration.

2.3(1) Application for admission.

Applications to the College of Business Administration should be submitted to the director of admissions.

Applications are required to the College of Business Administration in an applicant must have:

a. Completed specific course work as prescribed by the faculty of the college.

b. Achieved satisfactory grades on the university's prescribed examination.

c. Maintained a satisfactory grade-point average on all courses undertaken and on all courses undertaken at The University of Iowa, and on all courses undertaken in business and economics.

Applications from students who have other credentials in meeting grade-point requirements specified above will be submitted to the admissions committee of the college, and upon favorable recommendation of the committee, such students may be granted conditional or probationary admission.

Fulfillment of the minimal requirements listed above, however, does not assure admission to the College of Business Administration. From those applicants who meet the minimal requirements, the admissions committee will select the applicants who, in their judgment, appear to be best qualified.

270—2.4(262) College of Dentistry.

2.4(1) Application for admission.

Address all questions regarding admission to the Director of Admissions, The University of Iowa.

Applicants are urged to apply as early as possible, since this will give the admissions committee as much advance time to review applications. Closing dates for receiving applications will be announced, and in advance of the opening date of any session.

Applicants for admission are strongly encouraged to complete a program leading to a baccalaureate degree before entering dental. Applicants should consider a combined program of dental arts and sciences, which may lead to a baccalaureate degree upon the completion of the dental Year. Preference will be given to students who have the baccalaureate degree or who have completed the requirements for the degree in a combined program.

2-Fulfillment of the special requirements for admission following does not assure admission to the College of Dentistry. From the applicants meeting the minimum requirements, the admissions committee will select the applicants to whom special attention will be given to those who have completed the baccalaureate degree or who have completed the requirements for the degree in a combined program.

The college curriculum must include at least three academic years of accredited work comprising 76 semester hours and including specified specific required science courses as prescribed by the faculty of the college. Students should be encouraged to do as much as they can in the absence of applicants who have completed the requirements for the degree in a combined program. In order to meet the academic requirements the applicant should attain a cumulative grade-point average of 2.5. Since the quality of course work in the baccalaureate degree is a factor in the admission, special consideration to such college work is given by the admissions committee. The specific requirements for admission to the College are as follows:

A. Mathematics—Calculus, which includes work in algebra and trigonometry, and in advance of the opening date or any session.

B. Science—Physical science, which includes one course in each of the three sciences.

C. Social science—A course in social science, which includes one course in each of the three sciences.

D. Fine arts—A course in fine arts, which includes one course in each of the three sciences.

E. Humanities—A course in humanities, which includes one course in each of the three sciences.

F. Languages—A course in languages, which includes one course in each of the three sciences.

G. Physical education—A course in physical education, which includes one course in each of the three sciences.

H. Professional education—A course in professional education, which includes one course in each of the three sciences.

I. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

J. Professional practice—A course in professional practice, which includes one course in each of the three sciences.

K. Professional research—A course in professional research, which includes one course in each of the three sciences.

L. Professional management—A course in professional management, which includes one course in each of the three sciences.

M. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

N. Professional education—A course in professional education, which includes one course in each of the three sciences.

O. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

P. Professional research—A course in professional research, which includes one course in each of the three sciences.

Q. Professional management—A course in professional management, which includes one course in each of the three sciences.

R. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

S. Professional education—A course in professional education, which includes one course in each of the three sciences.

T. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

U. Professional research—A course in professional research, which includes one course in each of the three sciences.

V. Professional management—A course in professional management, which includes one course in each of the three sciences.

W. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

X. Professional education—A course in professional education, which includes one course in each of the three sciences.

Y. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

Z. Professional research—A course in professional research, which includes one course in each of the three sciences.

A. Professional management—A course in professional management, which includes one course in each of the three sciences.

B. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

C. Professional education—A course in professional education, which includes one course in each of the three sciences.

D. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

E. Professional research—A course in professional research, which includes one course in each of the three sciences.

F. Professional management—A course in professional management, which includes one course in each of the three sciences.

G. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

H. Professional education—A course in professional education, which includes one course in each of the three sciences.

I. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

J. Professional research—A course in professional research, which includes one course in each of the three sciences.

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L. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

M. Professional education—A course in professional education, which includes one course in each of the three sciences.

N. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

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P. Professional management—A course in professional management, which includes one course in each of the three sciences.

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Z. Professional management—A course in professional management, which includes one course in each of the three sciences.

A. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

B. Professional education—A course in professional education, which includes one course in each of the three sciences.

C. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

D. Professional research—A course in professional research, which includes one course in each of the three sciences.

E. Professional management—A course in professional management, which includes one course in each of the three sciences.

F. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

G. Professional education—A course in professional education, which includes one course in each of the three sciences.

H. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

I. Professional research—A course in professional research, which includes one course in each of the three sciences.

J. Professional management—A course in professional management, which includes one course in each of the three sciences.

K. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

L. Professional education—A course in professional education, which includes one course in each of the three sciences.

M. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

N. Professional research—A course in professional research, which includes one course in each of the three sciences.

O. Professional management—A course in professional management, which includes one course in each of the three sciences.

P. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

Q. Professional education—A course in professional education, which includes one course in each of the three sciences.

R. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

S. Professional research—A course in professional research, which includes one course in each of the three sciences.

T. Professional management—A course in professional management, which includes one course in each of the three sciences.

U. Professional administration—A course in professional administration, which includes one course in each of the three sciences.

V. Professional education—A course in professional education, which includes one course in each of the three sciences.

W. Professional experience—A course in professional experience, which includes one course in each of the three sciences.

X. Professional research—A course in professional research, which includes one course in each of the three sciences.

Y. Professional management—A course in professional management, which includes one course in each of the three sciences.

Z. Professional administration—A course in professional administration, which includes one course in each of the three sciences.
2.4(2) Advanced standing.

Applications for admission with advanced standing are handled as individual cases.

720—2.5(262) College of Engineering.

Address: All inquiries regarding admission to the Director of Admissions, The University of Iowa, Iowa City, Iowa.

Closing dates for receiving applications will be announced well in advance of the spring quarter of any session.

2.5(1) Admission of freshman students.

The applicant shall submit a formal application for admission and must have the secondary school principal's certification of high school record, rank in class, scores on standardized tests, and certification of high school graduation. The application must also include any other evidence such as a certificate of health that may be required by the University. The University must have the approval of the Iowa Board of Regents to establish the entrance requirements for admission to the College of Engineering. Among the entrance requirements are two consecutive high school grades, good academic standing, and good reference. These specific determinations will be published in the University Catalog.

The applicant shall also submit a formal application for admission requirements. The department of admission may make an additional review of the applicant's record.

(1) An applicant must have obtained satisfactory scores on the University's required admission examinations, maintained a satisfactory cumulative grade-point average, and submitted a satisfactory report of progress, as determined by the department of admission.

(2) The applicant must be a resident of the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

2.5(2) Admission of undergraduate students by transfer.

The applicant must submit a formal application and official transcripts of college work. Each applicant should have a

a. Maintained satisfactory scores in mathematics.

b. Maintained satisfactory scores on the University's required admission examination.

c. Maintained satisfactory scores on the University's required admission examination.

d. Maintained satisfactory scores on the University's required admission examination.

e. Maintained satisfactory scores on the University's required admission examination.

2.7(2) Admission with advanced standing.

Applications for admission with advanced standing are handled as individual cases.

720—2.6(262) Graduate College.

Grades of any college or university accredited by the Graduate College in the Graduate College Admission to the Graduate College is not the equivalent of acceptance A must be a candidate for an advanced degree. A must be accepted on the basis of his/her qualification as determined by the instructors of each subject area.

A graduate student must have four hours of study to fulfill the requirements for the bachelor's degree at The University of Iowa. This may be a graduate student by the completion of the requirements in at least one of the requirements for the first-year quarter of any session.

2.8(262) College of Medicine.

2.9(1) Application for admission.

Address: All inquiries regarding admission to the Director of Admissions, The University of Iowa, Iowa City, Iowa.

The applicant shall submit a formal application for admission requirements. The department of admission may make an additional review of the applicant's record.

(1) An applicant must have obtained satisfactory scores on the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

(2) The applicant must be a resident of the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

(3) The applicant must be a resident of the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

(4) The applicant must be a resident of the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

2.5(1) Admission of freshman students.

The applicant shall submit a formal application for admission requirements. The department of admission may make an additional review of the applicant's record.

(1) An applicant must have obtained satisfactory scores on the University's required admission examinations, maintained a satisfactory cumulative grade-point average, submitted a satisfactory report of progress, as determined by the department of admission.

(2) The applicant must be a resident of the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

(3) The applicant must be a resident of the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

(4) The applicant must be a resident of the State of Iowa, or have been resident of the State of Iowa for a period of at least one year prior to application.

The college is solicited below will be to meet the minimum academic requirements for admission to the College of Medicine.

Applicants who have completed the baccalaureate degree and required courses five years or more years prior to seeking admission to the College of Medicine will be considered by the college only if they are currently enrolled in the College of Medicine.

The college is solicited below will be to meet the minimum academic requirements for admission to the College of Medicine.

Applicants who have completed the baccalaureate degree and required courses five years or more years prior to seeking admission to the College of Medicine will be considered by the college only if they are currently enrolled in the College of Medicine.
In medicine, special attention will be given to the assistance committee to grades in science. The

in-semester average is based on The University of Iowa's "mark-up" system in which a grade of 8 is
equivalent to "A," a grade of 6 is equivalent to "B," a grade of 4 is equivalent to "C," and so on. This system will be evaluated by the office of the dean and the committee on admissions of the College of Medicine.

Performance will be given in the case of students who are residents of Iowa, and consideration will also be given to other institutional considerations. Applicants for admission are required to take the medical college admission test which is administered at the University of Medical College of Iowa. Applicants are required to complete this test in May or October of the year preceding that for which they are applying for admission. Students may make arrangements to take this examination through the university examination service, The University of Iowa.

Personal interviews will be required. Applicants will be contacted for the appointment for required interviews.

Applicants accepted for admission are required to submit a satisfactory physical examination report to the University student health service within two weeks following notification of admission.

All applicants must also arrange, through the Student Health Service, an on-the-spot chest and electrocardiogram examination prior to registration.

2.8.3) Admission to advanced standing.

If their rank is among the top 20% of their class at the time of application, students from other approved medical schools may apply to be advanced to an advanced standing position at the University of Iowa. Only applicants of high academic standing will be considered.

They must present evidence that they have satisfactory complete college transcripts that are beyond the present class year which is attended.

The committee on admissions in advanced standing will decide in each case whether the credentials in the various subjects will be required.

Applications will be considered only upon receipt of an application from the dean or registrar of the college from which the applicant comes; along with the actual day of the student's last year in the study of medicine, the course taken, and the grade received, together with a statement as to the work preparatory to entering upon the course in medicine.

No advanced standing will be granted to students from other than approved medical schools. Students may be granted credit, either upon recommendation of the department of the university, or upon recommendation of the dean of the university, for work taken in other than medical schools.

2.8.3) Unclassified students.

Applicants for admission to the College of Medicine who are not residents for a degree but who desire to register for special subjects, will be admitted to any lecture or laboratory course only upon complying with all the necessary requirements for admission to such course or courses, either by the faculty upon recommendation of the professor in charge of the course.

2.8.4) 2.9.(262) College of Nursing.

Applicants for admission to the College of Nursing should be submitted to the Dean of Admissions. The University of Iowa, Iowa City, Iowa. Applicants for admission to the graduate program in nursing must present a minimum of thirty (30) semester hours in an accredited college.

admission to the College of Nursing is an applicant must have:

1. Completed specific course work as prescribed by the faculty of the college. The director of admissions will provide a list of courses required.

2. Completed the American College Tests.

3. Performed excellence in all course work.

Applications from students who have minor deficiencies in science grades and requirements specified above will be reviewed by the admissions committee of the college. Applicants recommended by the committee may be granted conditional or probationary admission.

All applicants for the College of Nursing must have a minimum average grade point of 2.0; however, does not assure admission to the College of Nursing. From those applicants who have the minimum requirements, the admissions committee will select the applicants who, in their judgment, appear to be best qualified. Applicants for admission to the College of Nursing must have graduated from an approved high school or have an equivalent amount of training.

2.10.2) College of Pharmacy.

2.10(1) General basis for admission.

Fullfillment of the specific requirements for admission does not have admission to the College of Pharmacy. From the applicants meeting the specific requirements, the admissions committee will select those applicants who, in their judgment, appear to be best qualified. Applicants for admission to the College of Pharmacy must have a satisfactory average grade point of 2.0 in science and mathematics and in science and mathematics. The thirty semester hours must include:

Chemistry and physics, thirty semester hours.

Communication skills. Applicants must have demonstrated proficiency in communication skills according to the requirements of the College of Pharmacy at the University of Iowa. Applicants from other institutions may meet this requirement by presenting six semester hours of credit in English composition and two semester hours of credit in speech or three semester hours in speech and a four semester hour course in communication skills.

Biology and chemistry, thirty semester hours.

2.10.3) Scholarship and application deadlines.

To be considered for admission to the College of Pharmacy, students must have earned a 2.0 or G average or an equivalent in college with a minimum grade point average of 2.0 or 3.0 in science, and a minimum grade point average of 2.0 in the University of Iowa's ranking system in which the grade of 4 is equivalent to four points. Applications for admission and the required official transcripts should be filed before March 1 for the classes to enter pharmacy in September.

2.10(4) Required tests.

Applicants for admission are required to take the American College Testing Program test.

2.10(5) Current requirements.

Applicants who have completed work in a college of pharmacy accredited by the American Council on Pharmaceutical Education may, if their college and academic average is acceptable, be admitted and granted advanced standing toward the degree of bachelor of science in pharmacy.

2.70—2.11.2(262) College of Liberal Arts.

Applicants for admission to the College of Liberal Arts must meet the college requirements. The college requires a minimum of 90 semester hours and a minimum grade point average of 2.0 in the College of Liberal Arts. The college requires a minimum grade point average of 2.0 in the College of Liberal Arts. The college requires a minimum grade point average of 2.0 in the College of Liberal Arts. The college requires a minimum grade point average of 2.0 in the College of Liberal Arts. The college requires a minimum grade point average of 2.0 in the College of Liberal Arts. The college requires a minimum grade point average of 2.0 in the College of Liberal Arts.

2.70—2.12(262) College of Education.

Students at the University of Iowa pursuing professional work in education are required to complete the courses in Liberal Arts or the Graduate College. Students must complete the course requirements to be admitted to the University and the Liberal Arts.

2.70—
Index

For information about the admission requirements, course requirements, and college policies of the respective colleges, see these pages:
Liberal Arts, 30-328
Business Administration, 227-241
Engineering, 297-299
Graduate, 322-334
Law, 335-338
Medicine, 338-377
Nursing, 378-383
Pharmacy, 384-388

A
Academic achievement, recognition for, Liberal Arts, 46
Academic advising office, 7
Academic personnel, 394
Academic records, 3
Accident Prevention Laboratory, 21
Accounting, 277
Accounting Research Institute for, 20
Accreditation and associations, 2
ACT test scores, 3
Administrative Code, Board of Regents, 425
Administrative offices, 392
Admission, general, 3; Iowa Bar, 337;
Liberal Arts, 34; M.D. program, 341
Admissions, Office of, 3
Adult education noncredit program, 390
Advanced placement program, 44
Advising, Engineering, 207; faculty
advisors, 7; Liberal Arts, 31; Nursing,
390; undergraduate center, 7
Aerospace Military Studies (Air Force ROTC), 47
Afro-American Studies, 31, 48
Aging Studies Program, 31, 51, 523
Agricultural Medicine, Institute of, 20
American Studies Program, 52
Anatomy, 344
Anesthesiology, 346
Anthropology, 54
Application, deadlines, 2; fees, 3
Apparel Mathematical Science, 140, 323
Art and Art History, 25, 41
Arts Center Outreach, 23
Art, Museum of, 22
Arts, Iowa Center for the, 22
Asian Languages and Literature, 53
Associated Medical Science, Division of, 346
Astronomy, Physics and, 171
Auditorial Center, 290

B
Biochemistry, 67, 302
Biology, 68
Biomedical Engineering
Laboratory, 37
Biophysics, 301
Biophysics, Physiology and, 68
Botany, 68
Broadcasting and Film, 23, 78
Business Administration, College of, 227
Accounting, 231; Economics, 232;
Finance, 236; Industrial Relations and
Human Resources, 237; Industrial Relations
Institute, 230; Institute for Economic
Research, 220; Institute for Entrepreneurial
Management, 220; Institute for Insurance
Education and Research, 230; Labor Center, 290;
Management Center, 231; Management Science, 238; Marketing,
243

C
Campus Information Center, 7
Campus Programs and Student
Activities, 7
Cancer-Epidemiology Center, 20
Carver Research Center, 20, 340
Cardiovascular Research Center, 20, 340
Career planning, 7
Career Resource Center, 8
Career Services and Placement Center, 7
Central research facilities, 18
Chemical and Materials Engineering, 202
Chemical Engineering Laboratory, 317
Chemistry, 71
Child Behavior and Development,
Institute of, 20
Children's Reading Clinic, 35
Chinese (Asian Languages and
Literature), 65
Civil and Environmental Engineering, 300
Classics, 73
Clinical Management Concepts, 344
Clinical Research Center, 20, 340
Code of Student Life, 2
Collegiate policies, Liberal Arts, 42
Communication (major), 77
Communication and Theatre Arts, 75
Communication education, 77
Communication research, 78
Communication Studies, 84
Communication Study, Iowa Center for,
128

Communication and Mass
Communication, 124
Community College Affairs, Office of, 8,
391
Comparative Legislative Research
Center, 30, 177
Comparative Literature, 84
Computer Aided Design, Center for, 200
Computer Engineering, Electrical and, 328
Computer Science, 140
Conquering Center, Weig, 19
Conferees and Institutes, Center for, 389
Continuing Education, Division of, 389;
Nursing, 382
Cooperative Degree, 8
Correspondence courses, 389
Counseling Services, 8
Counselor Education, 362
Course requirements, Liberal Arts, 50
Creative writing, 90
Credit by examination, Liberal Arts, 44
Credit Programs, Center for, 389
Credit requirements, Liberal Arts, 35
Criminal justice and corrections
(Biochemistry), 203
CUTE Program, 258

D
Dance, Physical Education and, 185
Dance Company Program, University, 23
Dwight's list, Liberal Arts, 45
Ugwohe offered, Business Administration,
227; Dentistry, 342; Education, 395;
Graduate College, 332; Law, 335;
Liberal Arts, 31; Medicine, 339;
Nursing, 378; Pharmacy, 384;
University, 1
Degree requirements, Liberal Arts, 35
Dental Health Education, Bureau of, 16
Dental Hygiene, 245
Dental Service, 8
Dentistry, College of, 242; Clinical
Management Concepts, 244; Dental
Hygiene, 245; Endodontics, 245;
Family Dentistry, 247; Fixed
Prosthodontics, 248; Operative
Dentistry, 245; Oral Pathology and
Dentosurgery, 248; Oral and Maxillofacial
Surgery, 252; Orthodontics, 252;
Pedodontics, 252; Preventive and
Community Dentistry, 254; Removable
Prosthodontics, 255
Departments and programs, 30
Dermatology, 354
Diabetes Center, 21, 340
E

Early Childhood and Elementary Education, 265
Economics Research Institute, for 290
Economics, Business Administration, 232; Liberal Arts, 86
Education, College of, 258; Center for Educational Experimentation, Development and Evaluation, 260; Counselor Education, 252; Early Childhood and Elementary Education, 285; Educational Administration, 266; Foundations, Postsecondary and Continuing Education, 271; Psychological and Quantitative Foundations, 276; Science Education, 195; Secondary Education, 285; Special Education, 261; support units and special resources, 265
Educational Administration, 289
Educational Experimentation, Development, and Evaluation, Center for, 280
Educational Services Center, Stout, 25
Electrical and Computer Engineering, 305
Electron Microscope Laboratory, 317
Electron Probe Microanalysis Facility, 18
Elementary Education, Early Childhood and, 305
Endodontics, 246
Energy Engineering, Division of, 311
Engineering, College of, 295; Biochemical Engineering laboratories, 317; Biomedical Engineering, 301; Center for Computer Aided Design, 300; Center of Materials Research, 300; Chemical and Materials Engineering, 302; Chemical Engineering Laboratory, 317; Civil and Environmental Engineering, 303; combined degree with Liberal Arts, 297
Division of Energy Engineering, 311; Division of Information Engineering, 314; Division of Materials Engineering, 318; Division of Systems Engineering, 310; Electrical and Computer Engineering, 306; Electron Microscope Laboratory, 317; Engineering, 207; Environmental Engineering Laboratories, 311; Fluids and Hydraulics Labortories, 311; Industrial and Management Engineering, 207; Institute of Hydraulic Research, 300; Materials Processing Laboratories, 317; Materials Testing Laboratories, 317; Mechanical Engineering, 309; Mechanical Engineering Laboratories, 317; Pelvis and Particulars

Laboratory, 317; Structural Testing Laboratory, 317; Thermal Engineering Laboratories, 311

English, 89

Entering freshmen, Liberal Arts, 34
Entrepreneurial Management, Institute for, 220
Environmental Engineering Laboratories, 311
Environmental Engineering, Civil and, 303
Evaluation and Examination Services, 8
Evolutionary ecology and behavior, 353

F

Fair housing policy, 11
Family Dentistry, 241
Family housing, University, 12
Family Practice, 354
Film, Broadcasting and, 23, 79
Finance, 258
Financial aid, 13
Fixed Prosthodontics, 246
Flow Cybernetics Facility, 19
Fluids and Hydraulics Laboratories, 311
Foreign students, 5; Liberal Arts, 34
Foreign Studies Certificate, 33
Foundations, Postsecondary, and Continuing Education, 273
Fraud, 12
French and Italian, 95

G

General Information, 1
General Sciences, 86
General services, 25
General Studies, Bachelor of, 41
Genetics, 96, 224, 106
Geography, 100
Geology, 105
German, 110
Global Studies, 31, 113
Graduate and professional college examinations, 3
Grading system and graduation analysis, Liberal Arts
Graduate College, 322; Graduate Student Senate, 225; Joint Law and Graduate degree programs, 324; joint programs within the Graduate College, 232; rules and regulations, 325; University Teaching/Research Fellowships, 325
Graduation requirements, Liberal Arts, 35, 42
Greek (Classics), 73
Gynecology, Obstetrics and, 363

H

Hatcher Auditorium, 23
Handicapped, Services for, 9

Health Center, University, 15
Health Occupations Education, 16
Health Sciences Library, 1a
Health Services, Student, 8
Health Services Research Center, 18, 20, 357
High Field Nuclear Magnetic Resonance Facility, 19
High school-college relations, 8
Hospital and Health Administration, 356
History, 114
Home Economics, 178
Honorary and professional societies, 3
Honors Program, Liberal Arts, 33
Hospital School, University, 17
Housing, 11
Human Nutrition, 358
Human rights; University policy, 2
Hydraulic Research, Institute of, 300
Hygienic Laboratory, 16

I

Industrial and Management Engineering, 307
Industrial Relations and Human Resources, 237
Industrial Relations Institute, 230
Information Engineering, Division of, 314
Insurance Education and Research, Institute for, 220
Interdisciplinary Ph.D. programs, 44, 45, 323
Interdisciplinary programs, Liberal Arts, 31
Interdisciplinary programs and centers, 340
Internal Medicine, 369
International and Comparative Studies, Committees on, 327
International Education and Services, 8, 25
International Writing Program, 34, 92
International behavior, Center for Research in, 30
International travel and recreational activities, 9
Iowa Memorial Union, 9
Italian, French and, 95

J

Japanese (Aisan Languages and Literatures, 63
Journalism and Mass Communication, 124

L

Labor Center, 230
Lakesides Laboratory, Iowa, 132, 224, 390
Public Affairs, Institute of, 390
Public Information and University Relations, 28
Publications, 25

R
Radiation Biology, 374
Radiation Research Laboratory, 21
Radio broadcasting services, 360
Radiology, 9
Reaching Lab, 9
Recreation Education, 189
Recreational Services, 28
Registrar, 9
Regulation, 3
Rehabilitation Engineering, Center for, 20
Religion, 187
Removable Prosthodontics, 255
Research activities, 18
Research and Development, Office of the Vice President for, 18
Reserve Officers Training Program (ROTC), Air Force, 47
Armed, 190
Residence, determining, 3
Residence halls, 11
Rhetoric Program, 191
Rhetorical Studies, 79
Russian, 191

S
Sanskrit (Asian Languages and Literature), 63
Satellite centers, 199
Saturday and Evening Class Program, 390
Scanning Electron Microscopy and Transmission Electron Microscopy Facility, 19
School Executives, Institute for, 20
Science Education, 192
Secondary Education, 282
Sessions, 2
Sexual harassment, policy on, 3
Social science data archives, 21, 177
Soviet Studies Education, 196
Sociology, 199
Sociology of Education, 202
Sonoritas, 10
Spanish and Portuguese, 206
Specialized Child Health Services, 16
Special Education, 231
Special Support Services, 9
Speech and Hearing Clinic, 10, 17
Speech Pathology and Audiology, 213
Speech Pathology and Audiology, Council on, 18
Sponsored programs, 10, 19
Specialization within degree program, Liberal Arts, 33
Statistical Consulting Center, 21, 149
Statistics, 146

Statistics and Actuarial Science, 146
Structural Testing Laboratory, 317
Student activities, 7
Student complaints concerning faculty actions, 2
Student Health Services, 8
Student services, 7
Surgery, 276
Systems Engineering, Division of, 320

T
Teacher certification services, 261
Teaching certificate with the B.S.S. degree, Liberal Arts, 41
Theatre Arts (major), 81
Theatre Arts, Communication and, 78
Thermal Engineering Laboratories, 311
Toxicology Center, 21, 340
Transcripts, 10
Traveler students, Liberal Arts, 34
Tuition and fees, 3

U
Undergraduate Academic Advising Center, 7
Unified Program, Liberal Arts, 83
University of Iowa Alumni Association, 25
University of Iowa Flow Cytometry Facility, 19
University of Iowa Foundation, 26
University Hospital and Clinics, 15
University Hospital School, 17
University House, 30
University of Iowa Health Center, 15
University of Iowa Press, 26
University Theatre, 23
Urban and Regional Planning, 217
Urban and Regional Research Institute for, 95
Urban Community Research Center, 30, 303
Urban Growth in Developing Countries, 220
Urban Transportation, 220
Urology, 376

V
Veterans Administration Medical Center, 17
Veterans Services, 10
Video Center, 19

W
Windhover Press, 24
Women's Resource and Action Center, 10
Women's Studies, 32, 221
Writing Lab, 13