Oklahoma State University

1991-1992

CATALOG
This Catalog offers information about the academic programs and support services of the University. This Catalog is as accurate as possible, but the information may not remain current for all of the academic year. Circumstances may prompt changes in courses, course content, credit fees, regulations, semester calendar, curriculum, degrees offered, and other University matters. Such changes authorized by the University apply both to prospective students and to those previously enrolled, unless the latter are specifically exempted.

For information, write to Oklahoma State University, Stillwater, OK 74078, or call (405)744-5000; in Oklahoma, call toll free 1-800-522 6809.

To purchase a copy of the OSU Catalog through the mail, send a check or money order for $4.20, payable to Oklahoma State University, to Central Mailing Service, Attn: Catalog Requests, Publishing and Printing East, Oklahoma State University, Stillwater, OK 74078.

Oklahoma State University in compliance with Title VI of the Civil Rights Act of 1964 and Title IX of the Education Amendments of 1972 (Higher Education Act) does not discriminate on the basis of race, color, national origin, sex, qualified handicap or disability in any of its policies, practices or procedures. This provision includes but is not limited to admissions, employment, financial aid and educational services.

This publication, issued by Oklahoma State University as authorized by the Office of the Provost and Vice President for Academic Affairs, was printed by Evans Press, Inc. at a cost of $18, 819 for 19,000 copies. 09/09/91.
State Regents for Higher Education

DR DONALD HALVERSTADT, Chairman, Oklahoma City
GLENN COX, Vice-Chairman, Bartlesville
ED LATT A CALHOON, Secretary, Beaver
FREDERICK McCANN, Assistant Secretary, Oklahoma City
BOB F. ALLEE, Member, Elk City
JAMES E. BARNES, Member, Tulsa
GEORGE B. KAISER, Member, Tulsa
ROBERT L. MCCORMICK, Member, Stillwater
ANNE MORGAN, Member, Norman
DR HANS BRISCH, Chancellor, Oklahoma City

Board of Regents for Oklahoma State University

JIMMIE C. THOMAS, Chairman, Ada
VERNON D. BRECKENRIDGE, Vice Chairman, Hennessey
ISABEL K. BAKER, Member, Tahlequah
BRUCE T. BENBROOK, Member, Woodward
EDWARD F. KELLER, Member, Tulsa
ROBERT D. ROBBINS N, Member, Alus
CAROLYN SAVAGE, Member, Hominy
GARY SHERRER, Member, Jones
L.E. "DEAN" STRINGER, Member, Oklahoma City
W. DOUGLAS WILSON, Executive Secretary, Oklahoma City

University Administration

Selected administrators directly responsible for academic and service programs for students.

JOHN R. CAMPBELL, Ph.D., President
RAY M. BOWEN, Ph.D., Provost and Vice-President for Academic Affairs
CHRISTINE A. JACKSON, M.B.A., Vice President for Business and Finance
JAMES E. HOOPER, Ed.D., Provost and Vice-President of OSU-Oklahoma City
ROBERT KLABENES, Ph.D., Provost and Vice-President of OSU-Okmulgee
THOMAS C. COLLINS, Ph.D., Vice-President for Research and Graduate Dean
RONALD S. BEER, Ph.D., Vice-President for Student Services
HARRY W. BIRDWELL, J.D., Vice-President for University Relations and Public Affairs
CHARLES E. PLATT, B.S., President, OSU Foundation
CHARLES R. BROWNING, Ph.D., Dean of the College of Agricultural Sciences and Natural Resources; Director of the Agricultural Experiment Station; and Director of the Cooperative Extension Service
SMITH L. HOLT, Ph.D., Dean of the College of Arts and Sciences
ROBERT L. SANDMEYER, Ph.D., Dean of the College of Business Administration
KENNETH L. KING, Ed.D., Dean of the College of Education and Director of Teacher Education
KARL N. REID, Sc.D., P.E., Dean of the College of Engineering, Architecture and Technology
PATRICIA K. KNAUB, Ph.D., Dean of the College of Home Economics
THOMAS WESLEY ALLEN, D.O., Provost and Dean of the College of Osteopathic Medicine (Tulsa)
JOSEPH W. ALEXANDER, Ph.D., D.V.M., Dean of the College of Veterinary Medicine
EDWARD R. JOHNSON, Ph.D., Dean of Libraries
C. DAVID CURTIS, B.S., Bursar
ANTHONY BROWN, Ph.D., Coordinator of Programs, University Center At Tulsa (offices are located in Tulsa)
CHARLES BRUCE, Ph.D., Director of Financial Aid
LARRY KRUSE, M.S., Director of High School and College Relations
DAVID PAITIRSON, Ph.D., Interim Director of the University Honors Program
ROBERT E. GRAALMAN, Ph.D., Director of University Scholarships
ROBIN H. LACY, Ed.D., Registrar and Director of Admissions
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Calendar</td>
</tr>
<tr>
<td>7</td>
<td>Entering the University</td>
</tr>
<tr>
<td>11</td>
<td>Enrollment and Records</td>
</tr>
<tr>
<td>13</td>
<td>Costs</td>
</tr>
<tr>
<td>15</td>
<td>Financial Aid</td>
</tr>
<tr>
<td>33</td>
<td>Student Services</td>
</tr>
<tr>
<td>35</td>
<td>Special Programs, Services and Facilities</td>
</tr>
<tr>
<td>40</td>
<td>Student Life</td>
</tr>
<tr>
<td>42</td>
<td>OSU-Oklahoma City</td>
</tr>
<tr>
<td>42</td>
<td>OSU-Okmulgee</td>
</tr>
<tr>
<td>42</td>
<td>University Academic Regulations</td>
</tr>
<tr>
<td>48</td>
<td>Degree Programs Offered</td>
</tr>
<tr>
<td>50</td>
<td>College of Agricultural Sciences and Natural Resources</td>
</tr>
<tr>
<td>58</td>
<td>College of Arts and Sciences</td>
</tr>
<tr>
<td>76</td>
<td>College of Business Administration</td>
</tr>
<tr>
<td>82</td>
<td>College of Education</td>
</tr>
<tr>
<td>93</td>
<td>College of Engineering, Architecture and Technology</td>
</tr>
<tr>
<td>106</td>
<td>College of Home Economics</td>
</tr>
<tr>
<td>111</td>
<td>College of Osteopathic Medicine</td>
</tr>
<tr>
<td>113</td>
<td>College of Veterinary Medicine</td>
</tr>
<tr>
<td>116</td>
<td>Faculty</td>
</tr>
<tr>
<td>123</td>
<td>The Graduate College</td>
</tr>
<tr>
<td>144</td>
<td>Graduate Faculty</td>
</tr>
<tr>
<td>163</td>
<td>Course Listings</td>
</tr>
<tr>
<td>241</td>
<td>Index</td>
</tr>
</tbody>
</table>
First Semester
1991-92, Fall
August 19-23, Monday-Friday
Enrollment
August 23, Friday
Last day to cancel enrollment
August 26, Monday
Class work begins
August 30, Friday
Last day to enroll
August 30, Friday
Last day for 80% refund on withdrawal
September 2, Monday
University holiday
September 3, Tuesday
Last day to add
September 6, Friday
Last day to file a diploma application
September 9, Monday
Last day to drop a course with no grade and no fees charged for course
September 9, Monday
Last day for 50% refund on withdrawal
September 16, Monday
Last day for 25% refund on withdrawal
October 4, Friday
Last day to drop or withdraw with "W"
October 7, 8, Monday, Tuesday
Fall break
October 9, Wednesday
"Monday" classes will meet
October 18, Friday
Progress reports for freshmen due from faculty
November 1, Friday
Last day to drop with a "WP" or "WF"
November 11, Monday
Enrollment for Spring begins
November 28, Thursday
University holiday begins
December 2, Monday
Class work resumes
December 6, Friday
Last day to withdraw with a "WP" or "IFF"
December 9-13, Monday-Friday
Pre-finals week
December 16-20, Monday-Friday
Final examinations
December 20, Friday
Class work ends
December 24-January 1, Tuesday through Wednesday
University holidays
January 2, Thursday
Grades due from faculty

Winter Intersession
December 9-13, Monday-Friday
Enrollment
December 23, Monday
Intersession begins
January 3, Friday
Intersession ends

Second Semester
1991-92, Spring
January 6-10, Monday-Friday
Enrollment
January 10, Friday
Last day to cancel enrollment
January 13, Monday
Class work begins
January 17, Friday
Last day to enroll
January 17, Friday
Last day for 80% refund on withdrawal
January 20, Monday
Last day to add
January 24, Friday
Last day to file a diploma application
January 24, Friday
Last day to drop a course with no grade and no fees charged for course
January 24, Friday
Last day for 50% refund on withdrawal
January 31, Friday
Last day for 25% refund on withdrawal
February 21, Friday
Last day to drop or withdraw with "W"
March 6, Friday
Progress reports for freshmen due from faculty
March 7, Saturday
Spring break begins
March 16, Monday
Class work resumes
March 23, Monday
Enrollment for Fall begins
March 27, Friday
Last day to drop with a "WP" or "WF"
April 24, Friday
Last day to withdraw with a "WP" or "WF"
April 27-May 1, Monday-Friday
Pre-finals week
May 4-8, Monday-Friday
Final examinations
May 8, Friday
Class work ends
May 9, Saturday
Commencement
May 13, Wednesday
Grades due from faculty

Summer 1992,
Regular 8-Week
Summer Session
May 25, Monday
University holiday
May 28, 29, Thursday, Friday
Enrollment
May 29, Friday
Last day to cancel enrollment
June 1, Monday
Class work begins
June 2, Tuesday
Last day for 80% refund on withdrawal
June 3, Wednesday
Last day to enroll
June 3, Wednesday
Last day to add
June 4, Thursday
Last day for 50% refund on withdrawal
June 5, Friday
Last day to file a diploma application
June 5, Friday
Last day to drop a course with no grade and no fees charged for course
June 5, Friday
Last day for 25% refund on withdrawal
June 19, Friday
Last day to drop or withdraw with "W"
July 3, Friday
University holiday
July 6, Friday
Last day to withdraw with "WP" or "WF"
July 10, Friday
Last day to drop with "WP" or "WF"
July 27, Monday
Class work ends (makeup exams)
July 29, Wednesday
Grades due from faculty
First Semester 1992-93, Fall

August 17-21, Monday-Friday
Enrollment
August 21, Friday
Last day to cancel enrollment
August 24, Monday
Class work begins
August 28, Friday
Last day to enroll
August 28, Friday
Last day for 10% refund on withdrawal
August 31, Monday
Last day to add
September 4, Friday
Last day to file a diploma application
September 7, Monday
University holiday
September 8, Tuesday
Last day to drop a course with no grade and no fees charged for course
September 8, Tuesday
Last day for 50% refund on withdrawal
September 14, Monday
Last day for 25% refund on withdrawal
October 2, Friday
Last day to drop or withdraw with
October 12, 13, Monday, Tuesday
Fall break
October 14, Wednesday
"Monday” classes will meet
October 16, Friday
Progress reports for freshmen due from faculty
October 30, Friday
Last day to drop with "WP" or "WFF"
November 9, Monday
Enrollment for Spring begins
November 26, Thursday
University holiday begins
November 30, Monday
Class work resumes
December 4, Friday
Last day to withdraw with a "WP" or "WF"
December 7-11, Monday-Friday
Pre-finals week
December 14-18, Monday-Friday
Final examinations
December 18, Friday
Class work ends
December 24-January 1, Thursday
through Friday
University holidays
December 23, Wednesday
Grades due from faculty

Winter Intersession

December 7-11, Monday-Friday
Enrollment
December 21, Monday
Intersession begins
January 1, Friday
Intersession ends

Second Semester 1992-93, Spring

January 4-8, Monday-Friday
Enrollment
January 8, Friday
Last day to cancel enrollment
January 11, Monday
Class work begins
January 15, Friday
Last day to enroll
January 15, Friday
Last day for 80% refund on withdrawal
January 18, Monday
Last day to add
January 22, Friday
Last day to file a diploma application
January 22, Friday
Last day to drop a course with no grade and no fees charged for course
January 22, Friday
Last day for 50% refund on withdrawal
January 29, Friday
Last day for 25% refund on withdrawal
February 19, Friday
Last day to drop or withdraw with "W"
March 5, Friday
Progress reports for freshmen due from faculty
March 6, Saturday
Spring break begins
March 15, Monday
Class work resumes
March 22, Monday
Enrollment for Fall begins
March 26, Friday
Last day to drop with a "WP" or "WF"
April 23, Friday
Last day to withdraw with a "WP" or "WF"
April 26-30, Monday-Friday
Pre-finals week
May 3-7, Monday-Friday
Final examinations
May 7, Friday
Class work ends
May 8, Saturday
Commencement
May 12, Wednesday
Grades due from faculty

Summer 1993 Regular 8-Week Summer Session

May 31, Monday
University holiday
June 3, 4, Thursday, Friday
Enrollment
June 4, Friday
Last day to cancel enrollment
June 7, Monday
Class work begins
June 8, Tuesday
Last day for 80% refund on withdrawal
June 9, Wednesday
Last day to enroll
June 9, Wednesday
Last day to add
June 10, Thursday
Last day for 50% refund on withdrawal
June 11, Friday
Last day to file a diploma application
June 11, Friday
Last day to drop a course with no grade and no fees charged for course
June 11, Friday
Last day for 25% refund on withdrawal
June 25, Friday
Last day to drop or withdraw with "W"
July 5, Monday
University holiday
July 9, Friday
Last day to drop with "WP" or "WF"
July 16, Friday
Last day to withdraw with "WP" or "WF"
August 2, Monday
Class work ends (makeup exams)
August 4, Wednesday
Grades due from faculty
THE UNIVERSITY

Oklahoma State University was founded on December 25, 1890, as Oklahoma Agricultural and Mechanical College, just twenty months after the Land Run of 1889. When the first students assembled for class on December 14, 1891, there were no buildings, no books, and no curriculum.

In 1894, two and one-half years after classes began in local churches, 144 students moved into the first academic building, later known as Old Central, on the southeast corner of campus. In 1896, Oklahoma MM held its first commencement with six male graduates.

On July 1, 1957, Oklahoma A&M College became Oklahoma State University. Technical branches were established in Okmulgee in 1946 and in Oklahoma City in 1961. In 1990 their names were changed to OSU-Okmulgee and OSU-Oklahoma City.) In July of 1988, the Oklahoma College of Osteopathic Medicine and Surgery became the College of Osteopathic Medicine of OSU.

OSU is located in Stillwater, a north-central Oklahoma community with a population of more than 42,000. Stillwater is approximately 60 miles from the Tulsa and Oklahoma City metropolitan areas and is readily accessible from other major population centers by interstate highway and air.

The University is coeducational and has an enrollment of approximately 26,000 students on its four campuses. It offers bachelor's, master's and doctor's degrees in a large number of fields, as well as the professional Doctor of Osteopathy and Doctor of Veterinary Medicine degrees. Specialist in Education degrees are also offered in selected fields.

Although OSU is a large, comprehensive university, its size does not minimize the personal attention given to each student. The individual is more than just a number at this university. OSU encourages all students, when they first enroll, to identify the college in which they wish to major. Once the student has identified his or her major department, he or she becomes a very important individual to the faculty and advisers of that department. Because the average number of students majoring in any one department is less than 150, the student can count on personal attention in a friendly environment.

The largeness of the University has many distinct advantages. OSU's 1.5 million volume library, its modern research laboratories and equipment, excellent physical education, recreation and student union facilities, nationally-recognized residence halls programs, outstanding cultural events, and 36 nationally-affiliated fraternities and sororities, all provide a stimulating educational and social environment.

THE MISSION

The mission of Oklahoma State University is to advance the quality of human life through strategically selected programs of instruction, research, and public service, incorporating a strong liberal education component and emphasizing advanced level programs in science and technology that are internationally competitive.

STUDENT PROFILE

OSU has a diverse student body. Students come not only from Oklahoma, but from across the nation and world. Of OSU's 26,000 students, more than 19,500 are on the Stillwater campus; 2,100 at Okmulgee and 4,100 at Oklahoma City, as well as nearly 750 students at the University Center at Tulsa and 275 students at the College of Osteopathic Medicine in Tulsa. Ninety percent of the undergraduate enrollment is from Oklahoma; six percent from other states; and four percent from more than 25 foreign countries. Of the undergraduate population, 53 percent are men and 47 percent are women. Minorities make up nine percent of the undergraduate student body.

The graduate student enrollment totals 4,196. Of these students, approximately 700 enroll through the University Center at Tulsa. Seventy-one percent are from Oklahoma; 10 percent from other states; and 19 percent from foreign countries. Of the graduate population, 56 percent are men and 44 percent are women. Minorities make up nine percent of the graduate student body.

FACILITIES

The OSU campus is one of exceptional beauty, with modified Georgian style architecture in many of the buildings. The main campus encompasses 840 acres and 200 permanent buildings. These facilities include one of the largest libraries in the entire Southwest, a large Student Union complete with hotel facilities, the Colvin Physical Education Center, the Bartlett Center for the Studio Arts, and the Seretean Center for the Performing Arts. Two state-of-the-art facilities completed during 1990 are the Center for International Trade Development and a 25,000 square foot Wellness Center dedicated totally to the wellness concept (a first in the nation on a college campus). Phase I of the Noble Research Center for Agricultural and Renewable Natural Resources was completed in 1989, with Phase II and III scheduled for completion in 1991 and 1992, respectively.

The Lake Carl Blackwell area, located eight miles west of Stillwater, is also owned by OSU. The area includes approximately 21,655 acres, including the 3,000-acre Lake Carl Blackwell which provides the water supply for OSU. It is also used for research activities, in addition to being a popular regional recreational area.

Additional properties include approximately 1,900 acres in farm land and facilities in Payne County, as well as 2,900 acres and various structures devoted to research stations around the state.

GENERAL EDUCATION

Oklahoma State University is committed to producing graduates who have both a depth of knowledge in their major fields of study and a breadth of knowledge outside their majors, the best graduate being one with a mastery of a specific subject matter and a solid and diversified general education. As a result of this commitment to breadth and general education, the following philosophy of general education was adopted in 1978:

The role of General Education at Oklahoma State University is to assist the student in the pursuit of general knowledge and in the development of skills and attitudes conducive to a lifetime of enlightenment. It must stimulate intellectual curiosity, original thought and expression, the capacity for critical analysis and problem solving and the ability to make conscious value judgments consistent with both personal needs and the public interest. It must be a blend of the timely and the timeless and assist the graduate to live and function in a rapidly changing, complex and cosmopolitan world.

ACCREDITATION

Not only has Oklahoma State University enjoyed accreditation by the North Central Association of Colleges and Secondary Schools, but programs within the colleges are also accredited. In the College of Agricultural Sciences and Natural Resources, the forestry program is accredited by the Society of American Forestry. The landscape architecture program (Bachelor of Landscape Architecture) is accredited by the American Society of Landscape Architects. In addition, the College's teacher education program in agricultural education is accredited by the National Council for Accreditation of Teacher Education, the Oklahoma State Department of Education, and the Oklahoma State Department of Vocational-Technical Education.

In the College of Arts and Sciences, the medical technology program is accredited by the National Accrediting Association of Clinical Laboratory Science; the chemistry program is accredited by the American Chemical Society; the School of Journalism and Broadcasting as well as the programs in advertising, news editorial, and public relations are accredited by the Accrediting Council for Education in Journalism and Mass Communications; and the music department is accredited by the National Association of Schools of Music. The program of clinical psychology is accredited by the American Psychological Association and the Oklahoma Speech-Hearing Association.

All programs of the College of Business Administration are fully accredited by the American Assembly of Collegiate Schools of Business, which is the only nationally-recognized
Students who have enrolled in one or more colleges prior to applying to OSU must complete and submit an "Application for Admission," and request that the registrar at each college send an official transcript of all work attempted to the Office of Admissions at OSU. Students who have earned 23 or fewer hours of college credit should follow the procedure outlined above for first-time freshmen.

FORMER STUDENTS. Students who have attended OSU but did not enroll in the immediate past semester (summer sessions are not included), must complete an "Application for Readmission. Students who have enrolled in another college since attending OSU must submit official transcripts of all work attempted.

RESIDENTIAL LIFE. All freshmen (with the exception of commuting students) live on campus their first year. The University offers a variety of living and food service arrangements to satisfy most students. A Residence Hall Application is included in the "Application Packet" and should be submitted early in the senior year of high school to ensure a first-choice assignment. Opportunities abound for transfer students who desire to experience life on campus.

BEGINNING THE ENROLLMENT PROCESS

Advance Fee Payment. After admission is granted, all new freshman and transfer students are required to submit an advance fee payment prior to the beginning of the enrollment process. The fall semester enrollment process for freshmen is completed during several special orientation sessions conducted on campus during the summer. Students need attend only one session and parents are encouraged to participate in this important program. Transfer and readmission students will receive enrollment information at the appropriate time.

Physical Examination. Prior to the beginning of classes, all new students must present to the OSU Student Health Center a physical examination report completed by a local or family physician, or a recent equivalent report from a place of employment or the Armed Forces. If the equivalent report is used, the front page of the OSU Medical History and Physical Examination Record must also be completed.
Residence Classification for Purposes of Admission and Fees

(See also "Admission-Withdrawal" section of the "Academic Regulations.")

The admission requirements to Oklahoma State University vary for residents and for nonresidents of the state; therefore, prospective students should determine their residence status before examining the admission requirements. Although the following policy statement is not necessarily inclusive of all regulations governing the classifications of resident and nonresident students for the purpose of fee payment, it should, nevertheless, be of assistance to most students in determining their residence status. Administration of the state's residence policy as it applies to Oklahoma State University students is designated to the Office of Admissions. Questions concerning interpretation of the policy should be directed to the admissions director for a ruling.

Regulations governing the residence status of students are the responsibility of the Oklahoma State Regents for Higher Education and apply to all colleges and universities of the Oklahoma State System of Higher Education.

Basic Principles Governing Residence.

1. Attendance at an educational institution is interpreted as temporary residence; therefore, a student neither gains nor loses residence status solely by such attendance.
2. A nonresident student attending an Oklahoma college or university on more than a half-time basis is presumed to be in the state primarily for educational purposes.
3. An individual is not deemed to have acquired status as a resident of Oklahoma until he or she has been in the state for at least a year primarily as a permanent resident and not merely as a student. Likewise, an individual classified as a resident of Oklahoma shall not be reclassified as a nonresident until 12 months after having left Oklahoma to live in another state.
4. All married persons shall be treated as equal under this policy. Therefore, each spouse in a family shall establish his or her own residence status on a separate basis.
5. The burden of proof of residence status or domicile shall be upon the applicant. Students filing an appeal for reclassification of his or her residence status shall do so on forms provided or approved by the Oklahoma State Regents for Higher Education. (Some of the various types of evidence that may serve as proof of residence are year-round residence, ownership of property, registration for state general elections, an Oklahoma income tax return for the most recent calendar year, and payment of property taxes.)
6. Initial classification as a nonresident student shall not prejudice the right of a person to be reclassified thereafter for subsequent semesters or terms of enrollment as an Oklahoma resident provided proof of residence can be established.

Definition of Residence Terms.

Residents of Oklahoma: Residents of Oklahoma are those who have lived continuously in the state for at least 12 consecutive months and whose domiciles are in Oklahoma. Students' domiciles are their permanent homes—the places where they intend to remain and are expected to return. Students can have more than one residence, but only one domicile.
Independent Persons: Independent persons are those enjoying majority privileges (are legally emancipated from their parent(s) or guardian) and who are responsible for their own care, custody and support.
Dependent Persons: Dependent persons are those under the care, custody and support of their parent(s) or other legally sanctioned parental surrogates.
Full-time Students: Full-time students are those enrolled in a minimum of 12 credit hours per semester in an academic year, or a minimum of six credit hours during a summer session.

Residence Status Criteria.

Independent Student Criteria: Students who have achieved majority privileges (are 18 years of age or older), can provide adequate proof of independence from parental or legal guardian domicile, and have come to Oklahoma with the intention of establishing domicile, may be granted residence classification at the next enrollment period after the expiration of 12 consecutive months following the establishment of domicile in Oklahoma. Spouses must establish proof of residence on a separate basis.

In addition to the aforementioned criteria, independent students seeking reclassification as residents of Oklahoma must meet the following criteria for the current and immediately preceding year:
1. The student must not have been claimed as an exemption for the state and federal tax purposes by his or her nonresident parent(s).
2. The student must prove self-support as evidenced by having provided the majority of funds for his or her own upkeep.
3. The student must have maintained a continuous residence in Oklahoma for at least 12 months.

Dependent Student Criteria: For the purpose of establishing residence status, the legal residence of dependent students is that of their parent(s) or legally-appointed guardian. Dependent students may become independent through marriage, formal court action, abandonment by parents, or positive actions demonstrating separation from the parent's domicile. Students who can provide adequate proof of complete emancipation, and have come to Oklahoma with the intention of establishing domicile may be granted residence classification at the next enrollment period after the expiration of 12 consecutive months following the establishment of domicile in Oklahoma.

Military Personnel: Students enrolled at Oklahoma State University while on full-time active duty in the Armed Forces are considered to be temporary residents in the state; therefore, they neither gain nor lose resident status. Members of the Armed Forces stationed in Oklahoma, their spouses, and dependent children may be admitted without payment of nonresident tuition so long as they continue to be stationed in the state in full-time military service and under military orders.

Full-time Professional Practitioner or Worker: An individual who provides evidence of having come to Oklahoma to practice a profession on a full-time basis, conduct a business full-time, or work on a full-time basis shall be admitted along with his or her spouse and dependent children without payment of nonresident tuition so long as he or she continues in such full-time employment capacity.

Requirements for Admission

High School Preparation

One of the goals of Oklahoma's public education system is to provide quality academic preparation for as many college-bound students as possible. In Oklahoma, each year more than 15,000 high school students make the decision to enter college.

Students with the ability to think clearly, to reason, to employ scientific method, to use language effectively, and to apply knowledge, are those who will become the masters of their destiny in tomorrow's world. These students should pursue an academically-oriented high school curriculum. Such a course of study will help develop the basic academic skills and knowledge needed for success in college. The basic skills include reading, speaking and listening, mathematics, writing, reasoning and studying. The basic high school subject areas in which these skills can be nurtured are social studies, foreign languages, the arts, English, mathematic and natural sciences.

Curriculum Requirements (Residents and Nonresidents)

All students beginning college work after July 1, 1988 must have completed the following curriculum requirements for admission:

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>(grammar, composition and literature)</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>2</td>
</tr>
<tr>
<td>(American history required)</td>
<td></td>
</tr>
<tr>
<td>Laboratory science</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>(algebra 1 and above)</td>
<td></td>
</tr>
</tbody>
</table>

It is also recommended that students complete at least four units (years) from the following subjects:

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer science</td>
<td>Government</td>
</tr>
<tr>
<td>Economics</td>
<td>Psychology</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Sociology</td>
</tr>
<tr>
<td>Geography</td>
<td>Speech</td>
</tr>
</tbody>
</table>
Freshman Admission. For the Fall 1991 or Spring 1992 Semester to be admissible, students must graduate from an accredited high school, participate in either the American College Testing program (ACT) or a similar acceptable standardized test, and satisfy at least one of the following:

1. maintain a four-year high school grade-point average of 3.00 or higher on a 4.0 grading scale, and rank scholastically among the top 40% of their class; or
2. attain a composite score of 21 or higher on the enhanced ACT or a 950 on the SAT.

1991 Summer Probation

For the summer session: First-time college freshmen who do not meet the requirements listed above may begin their college enrollment during any summer session if they graduate from an accredited high school and participate in either the ACT or a similar acceptable standardized testing program. Summer admission is "probational"; however, students may be eligible to continue in the fall if they:

1. complete at least six semester hours of course work (not including activity or performance courses), and
2. earn at least a "C" or equivalent in each course.

Special Adult Admission Opportunities. Adults 21 years of age or older or individuals on active military duty may be admitted as "special adult" applicant. It is the opinion of Oklahoma State University that factors such as maturity of the individual, job skills and life experiences, motivation, ability to benefit, and access to educational programs should be considered in addition to past academic achievement in determining probability of academic success.

Concurrent Enrollment as a High School Student.

1. A senior student enrolled in an accredited Oklahoma high school may, if he or she meets the requirements set forth below, be admitted provisionally as a special student.
   a. He or she must meet the published criteria of the State Regents (other than high school graduation and curricular requirements) for admission. This includes having participated in the American College Testing program (ACT) or a similar battery of tests (Scholastic Aptitude Test SAT).
   b. He or she must be enrolled in less than a full-time load (fewer than six credit courses per semester) at the high school which he or she is attending, as attested by the high school principal.
   c. He or she must be eligible to complete requirements for graduation from high school (including curricular requirements for college admission) no later than the spring of the senior year, as attested by the high school principal.

2. An eleventh grade student enrolled in an accredited Oklahoma high school may be admitted provisionally as a special student, if he or she meets requirements a. and b. above, and if the student has achieved a composite score which places him or her at or above the 90th percentile on the ACT using Oklahoma norms, or whose combined verbal and mathematical score on the SAT places him or her at or above the 90th percentile using national norms.

3. A high school student admitted under the provisions set forth in 1. and 2. above may enroll in a combined number of high school and college courses per semester not to exceed a full-time college work load of 19 semester credit hours. For purposes of calculating work load, one high school credit course shall be equivalent to three semester credit hours of college work.

4. A student who is otherwise eligible under this policy may enroll in a maximum of nine semester credit hours during a summer session, without the necessity of being concurrently enrolled in high school classes during the summer term. The completion of the high school curricular requirements shall not be required of concurrently enrolled high school students for purposes of admission. (Students may only enroll in curricular areas where the student has met the curricular requirements for college admission.) Concurrently admitted high school students will not be allowed to enroll in any zero-level courses designed to remove high school deficiencies.

Admission with Advanced Standing (Credit Through Examination).

Many high school seniors are enrolled in accelerated courses in various fields, and others have mastered subjects in which they may wish to gain credit through examinations, such as algebra, biology, chemistry, English, foreign languages, history, physics and trigonometry. Students who wish to apply for these examinations should write to the Office of Admissions, during the last semester of their senior year in high school, but not later than April 20. Students who participate in this testing program and who enroll at OSU will have examination papers evaluated by the department in which advanced standing is sought. If the student successfully passes the examination, college credit will be granted in the course and a grade of "P" will be recorded.

Transfer Admission. For the purpose of determining admission, a transfer student is one who has earned a minimum of seven semester hours of college credit. Students with less than seven semester hours of college credit must satisfy the criteria for first-time entering freshmen. Students may transfer to Oklahoma State University from within the state system according to the following criteria:

1. Students who would have satisfied the admission requirements for the fall or spring semester as first-time freshmen, but chose to enroll at another institution within the state, are eligible to enroll as transfer students. Students with seven to 23 hours of credit must have a cumulative GPA of at least 1.7 (on a 4.00 scale); students with 24 or more earned credits must satisfy the retention standards listed below.

2. Students who would not have satisfied the admission requirements for the fall or spring semester as first-time freshmen are eligible to enroll as transfer students after earning at least 24 semester credit hours according to the retention standards listed below.

Retention Standards. The standards pertaining to the retention of students pursuing study in undergraduate programs at OSU are:

<table>
<thead>
<tr>
<th>Hours of Credit</th>
<th>Retention Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 through 60</td>
<td>1.70</td>
</tr>
<tr>
<td>61 or more</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Nonresidents of Oklahoma

(All nonresidents must include a nonrefundable $10 application fee with their "Application for Admission").

Freshman Admission. The admission requirements for students wishing to enroll at OSU from states other than Oklahoma are the same as those that apply to Oklahoma residents. (Students seeking admission must graduate from high schools accredited by the appropriate regional association or accrediting agency within their home state.) Students who do not meet the criteria for fall or spring enrollment may be admissible through the summer probation program. (See "Oklahoma Residents Freshman Admission").

Transfer Admission. For the purpose of determining admission, a transfer student is one who has earned a minimum of seven semester hours of college credit. Students with less than seven semester hours of college credit must satisfy the criteria for first-time entering freshmen. Students may transfer to Oklahoma State University from outside the state according to the following criteria:

1. Transfer students seeking admission to OSU from colleges or universities accredited by the North Central Association or other regional associations will be given full recognition of their credits earned providing:
   a. they are in good standing at the institution from which they are transferring, and
   b. they have a cumulative grade-point average of 2.00 or higher (on a 4.00 scale) for all work attempted.

2. Transfer students seeking admission to OSU from colleges or universities not accredited by a regional association may be given full recognition for their credits earned when the credit is appropriate to the students' degree programs and after OSU has validated the courses. Applicants must meet the conditions of (1-a) and (1-b) above, as well as demonstrate satisfactory progress (2.00 cumulative GPA on a 4.00 scale) during their initial term of enrollment.

Alternative Admission Programs

Special Talent Waivers. As authorized by the Oklahoma State Regents for Higher Education, a number of first-time freshman students, not to exceed seven percent of the class, may enroll, beginning with the Fall 1991 Semester, by meeting the following:

1. The applicants must meet all criteria contained in the regular institutional admission policy with the exception of the prescribed academic criteria, and
2. The individual must demonstrate talent or ability in an area such as art, drama, music, etc., or
3. Be educationally or economically handicapped and show promise of being able to succeed in the program or curriculum in which enrolled.
Opportunity Admission Program. Students who have not graduated from high school but whose composite score on the ACT places them in the 99th percentile, or whose combined verbal and mathematics scores on the SAT places them at the 99th percentile, may apply for full admission. Admissibility will depend on test scores, evaluation of maturity level, and whether the experience will be in the best interest of the student.

Pre-engineering (Transfer-Nonresident of Oklahoma). Engineering is a competitive program; therefore, enrollment preference is given to Oklahoma residents. In addition to the above requirements, a nonresident of Oklahoma applying for admission to pre-engineering must meet requirements determined by the College of Engineering. These requirements may exceed those required for residents of Oklahoma. (See "College of Engineering, Architecture and Technology.")

English Proficiency Requirement All new applicants to OSU for undergraduate study for whom English is a second language shall be required to present a score of 500 or above on the Test of English as a Foreign Language (TOEFL).

Readmission. A nonresident or an Oklahoma resident who has attended OSU but did not attend OSU the immediate past semester must file an "Application for Readmission." A student who has attended another college or university since last attending OSU must file a transcript of all work attempted after leaving OSU. If the student's grade-point average meets minimum University and department standards, and his or her disciplinary record is satisfactory, he or she will be admitted to OSU.

Home Study or Unaccredited High Schools. An individual who is a graduate of a private, parochial, or other nonpublic high school which is not accredited by a recognized accrediting agency is eligible for admission to the University if:

1. The student has graduated from high school or a home study program, and
2. The student has attained a composite score of 21 or higher on the ACT or a 950 on the SAT, and
3. The student has satisfied the high school curricular requirements as certified by the school official or if home study, the parent.

Correspondence Study Enrollment
Admission to the University is not required for enrollment in correspondence work. However, academic credit for correspondence work will not be applicable toward a degree until the student has been formally admitted to the University and has secured the approval of the appropriate academic officer for such credit.

Special Admission Categories. The Oklahoma State Regents for Higher Education have approved, effective Fall 1991, a Transfer Probation Admission category and a Non-Degree Seeking Student Admission category. Contact the Office of Admissions for information.

International Admission
International students are required to meet academic performance standards which are equivalent to those established for all non-resident applicants.

Application Procedure. For purposes of admission, an international student is defined as "a student who is, or will be, in the United States on a non-immigrant student visa." This specifically refers to the F (F) and J Visa categories. All international students are, considered nonresident students. The University will process the International Student Application and Financial Guarantee form for undergraduate admission (freshman and transfer) only after all the following items have been submitted:

1. "Application for Admission" and a fee of $10.00 paid payable to OSU.
2. One official or certified true copy of each academic record with a certified English translation. Students enrolled at U.S. institutions may have certified true copies of their foreign records sent by their current institution. Academic records may comprise one or more of the following:
   a. Yearly secondary school records.
   b. Year-by-year records from each college or university attended.
   c. National examination results.
   d. The international student transferring from another U.S. institution with less than 24 semester credit hours needs to send both the certified true copies of his or her secondary records and official transcripts from his or her current institution in the United States.
   e. The international student transferring from another U.S. institution with more than 24 semester credit hours in the U.S. need only to have his or her official transcripts from each college or university attended forwarded directly to the Office of Admissions.
3. An official Test of English as a Foreign Language (TOEFL) score of 500 or above on the examination taken within the last two years.
4. Documented evidence of financial support. The University has no financial aid available for international students.
5. An international student with F Visa status transferring from another U.S. institution will have his or her I-20 processed for transfer by the Office of International Student Services at OSU. The student with F Visa status should contact his or her foreign student adviser at his or her current institution and also the international student admissions counselor at the Office of Admissions at Oklahoma State University prior to making his or her transfer.

The U.S. Immigration and Naturalization Service (INS) rarely allows international students to work during the course of their studies in the United States. Thus, international students should not expect to support themselves through employment while attending the University.

Freshman Admission (International Students). (See "Application Procedure" above.)

Transfer Admission (International Students). An international student is considered a transfer student under the following criteria:

1. A student who has attended a post-secondary institution in his or her own country or another international country; or
2. A student who has earned a minimum of seven semester hours of college credit in any U.S. institution. If the international student falls under criteria (1), his or her admission will be based on the work completed in his or her institution abroad only. If the international student falls under criteria (2), he or she is subject to the following requirements:
   a. Meet the requirements for "Nonresidents of Oklahoma-Transfer Admission," elsewhere in the Catalog. The international student is eligible for academic admissibility under this criteria only if he or she were admissible as a first-time freshman based on his or her academic credentials from abroad.
   b. The international student who would not have been eligible for academic admission as a first-time freshman based on his or her academic credentials from abroad will be eligible for academic admission after earning at least 24 semester credit hours at another U.S. institution and then meeting the criteria stated for "Nonresidents of Oklahoma-Transfer Admission," elsewhere in the Catalog.

Engineering Program Admission (International Students). The international student intending to transfer from a U.S. institution into the engineering program at OSU must meet one of the following requirements:

1. A student with 24 or more semester credit hours will be eligible for academic admission into the engineering program if he or she has an overall 2.70 GPA on a 4.00 scale, and has a 2.50 overall GPA in engineering-related courses from his or her current institution, and has a 2.00 over the immediate past semester before transferring; or
2. A student with fewer than 24 semester credit hours will be eligible for academic admission into the engineering program only if he or she is both academically admissible by virtue of his or her academic records from abroad and has a 2.70 overall GPA on a 4.00 scale, as well as an overall 2.50 in engineering-related courses from his or her current institution in the United States and a 2.00 over the immediate past semester before transferring; or
3. A student with less than 24 semester credit hours who would not be admissible by virtue of his or her secondary or tertiary academic records from abroad may apply for academic admissibility into the engineering program after earning at least 24 semester credit hours at another U.S. institution and having an overall of 2.70 GPA on a 4.00 scale as well as having a 2.50 overall GPA in engineering-related courses from that institution in the United States, and a 2.00 over the immediate past semester before transferring.
Transfer From Another U.S. Institution (International Students).

The Immigration and Naturalization Service (INS) must be notified when an international student transfers from one U.S. institution to another. With recent changes in INS regulations, a transferring international student must process the transfer with the institution to which the student is transferring, not with the previous institution. However, if a student is out of status with INS, that student must reestablish him or herself with INS before being allowed to enroll at OSU. Questions regarding a student’s immediate immigration status must be directed to the foreign student adviser.

It is entirely the student’s responsibility to obtain the correct visa and to maintain the immigration status while in the United States. Refer to the conditions of the visa on the Form I-20 or on the Form LAP 66 before signing it.

Oklahoma State University has no financial assistance available for international students. INS requires that international students file a statement with the University which shows adequate financial support for their education. OSU has its own financial guarantee form that international students need to complete as a requirement toward admission into OSU.

Students should not plan on financing their education with employment. International students holding F-1 or J-1 visas are seldom permitted to work while they are students in the United States. After international students have been enrolled for a semester, and if they have acceptable grades, then they are eligible to apply for part-time work at the University.

Even though eligible, many students are unable to find a job on the campus and do not work. Students holding F-1 or J-1 visas are almost never permitted by INS to work outside of the University campus, and can be deported from the United States if they are found to be in violation of this regulation. It is the responsibility of each international student to understand the INS regulations and to abide by them.

Enrollment and Records

Robin H. Lacy, Registrar and Director of Admissions
Glen R. Jones, Associate Registrar
Darlene Wilson, Administrative Associate
Paula M. Barnes, Coordinator, Athletes’ and Veterans’ Eligibility
Joan M. Payne, Coordinator, Certification Services
Vera M. Biluye, Coordinator, Enrollment Services
Shirilyn Dehls, Coordinator, Student Records
Linda J. Bentley, Coordinator, Publications
Carl E. Jordan, Coordinator, Student Data

STUDENT ENROLLMENT

Enrollment is the process whereby students are counseled by academic advisers regarding course selection and placement, and the subsequent scheduling of those courses. A student must be admitted to the University prior to the enrollment process (see “Entering the University”).

First-time Students (Freshmen and Transfer)

An advance fee payment is required prior to participation in the enrollment process. The fall enrollment and orientation period for new freshmen takes place during the summer months. New students receive information about these programs after being admitted to the University. Enrollment and orientation activities include career counseling, academic advising and course selection, and an introduction to campus facilities and services. During the program, students meet with academic advisers who are available to assist in the planning of academic programs and the exploration of interest areas. Parents are encouraged to participate in these programs.

ALPHA Program

ALPHA is a fall, four-day orientation program designed for all students new to Oklahoma State University. It is a combined effort of many units of the University and the local community to provide a sense of security and well being for new students. ALPHA allows new students to move into their housing units two days ahead of the upperclassmen, to become aware of the services, resources, and people available to them, and to foster peer friendship, development, and support. ALPHA begins on the Thursday before classes start in August. Specific information is mailed during the summer months to all new students who have applied for admission-freshmen and transfer students.

Continuing Students

Students currently enrolled at OSU may enroll for the subsequent semester during specified periods of the current semester. Priority for these enrollment periods addresses the needs of students in relation to graduation proximity, with priority based on number of hours earned. Prior to the specific enrollment periods, students and academic advisers consult regarding course selections. The Trial Schedule form is then completed and signed by the adviser. Alternate and substitute courses are to be listed on the form where applicable. An overdue account with the University will prevent completion of the enrollment process.

Priority Enrollment. Certain groups of students are extended the option of enrolling prior to the time continuing students begin enrolling. Physically handicapped students are extended the option of priority enrollment. Those students actively participating in the University Honors Program are extended the option of priority enrollment. Current OSU students who accept University scholarships which require that the student perform a service for the University at a regular time specified by the University, will be given priority enrollment. Wentz scholars, President’s Distinguished Scholars (PDS), President’s Leadership Council (PLC) recipients, and participants in the OSHRE Academic Scholars program are also extended the option of priority enrollment. Working part-time for the University or outside the University does not qualify the student for priority enrollment.

Late Enrollment

A student is permitted to enroll during the first week of a semester or through the third day of a summer session or on the first day of a summer short course. A student enrolling late will pay a late enrollment fee. The late enrollment fee will not be charged on or prior to the first day of a summer short course.

Identification Cards

As part of the enrollment process, each new student is issued a photo identification card. This card, along with the current fee receipt, establishes the student’s identity as an OSU student and authorizes access to certain University facilities. Continuing students will have their I.D. cards validated during the enrollment process. Lost or stolen identification cards will be replaced at a nominal fee with proper photo identification from the student.

Change of Schedule

Adding Courses. Approval of the student’s adviser is required for adding a course. The sixth class day of a regular semester or the third class day of a summer session is the last date a course may be added. A short course may be added no later than the first day of the short course.

Dropping Courses. Courses may not be dropped without the approval of the student’s academic adviser.

At any time prior to the end of the second week of a regular semester or the first week of a summer session, or during the proportionate period for block or short courses, a student may drop a course, and no record of the course will appear on the student’s academic record.

After the deadline for dropping with no record, but prior to the end of the sixth week of a regular semester or the third week of a summer session, or proportionate periods for block or short courses, a student may drop a course and receive the grade of “W” (dropped).

After the sixth week of a regular semester or the third week of a summer session but prior to the end of the 10th week of a regular semester or the fifth week of a summer session, a student may drop a course with the grade of “WP” (dropped passing) or “WF” (dropped failing) as assigned by the instructor. The grade of “WF” will be calculated in the grade-point average.
After the 10th week of a regular semester, or the fifth week of a summer session, or proportionate periods for block or short courses, a student may not drop a course and shall be assigned only the grade of "A", "B", "C", "D" or "F", or, when appropriate "I", "NP", "P" or "R" by the instructor at the end of the semester. (Exceptions to this policy may be allowed by petition due to extraordinary circumstances. The petition process is initiated in the student's dean's office. A petition requires the signatures of the student's instructor, adviser and dean with the grade of "WV" or "WF" assigned by the instructor.)

A student may not drop any course in which a formal charge of academic dishonesty is pending against the student. If the student is absolved of the formal charge, he or she may drop the course with either a "W", "WF" or "WF", (according to the drop grade policy), appearing on the academic record. If the student is found guilty, the instructor may take appropriate disciplinary action, including assigning the grade "F" for the assignment or the course.

**Vehicle Registration and Parking Regulations**

Any vehicle driven in the City of Stillwater or on the campus of the University by an OSU student should be currently registered with the Department of Public Safety. When a vehicle is registered, the student will be given an OSU vehicle registration decal at no cost. The decal is solely for the purpose of registration and does not afford the student on-campus parking privileges.

Each student is allowed one paid parking permit. The parking permit fee charged to a student's OSU account. In order to obtain a parking permit, the following items should be presented to the OSU Police Department: a copy of the vehicle registration, a completed "Vehicle Registration" card, student I.D., and, if living in a residence hall, a "Residence Hall Vehicle Registration" form.

Parking permits for motorcycles, motor-propelled bicycles and scooters may be purchased, and such permit holders will be provided special parking areas.

Bicycle registration may be obtained without charge, an advantage in the event the bicycle is stolen or lost. When bicycles are recovered by the OSU Police, they are checked against bicycle serial numbers maintained in the registration files for return to the rightful owners.

(A copy of the OSU Parking and Traffic Regulations booklet is available from the Parking Office, 104 USDA Building, located at Orchard Street and Farm Road.)

**Faculty and Staff Enrollment in University Courses**

The advance fee payment is waived for permanent full-time employees. These employees may audit courses after securing an audit form for a fee of one-half the general fee. Any individual 65 years or older may audit a class at no charge.

Faculty, Permanent (tenure track), full-time (100%) members of the faculty may enroll for credit in one course per semester or a maximum of five hours during normally scheduled working hours and pay one-half the general and activity fees in effect at that time. Exceptions may be permitted only with approvals of the department head, dean and appropriate vice president. If enrollment does not exceed one course, only the department head's approval is needed to receive a fee waiver. If the employee is enrolled in more than one course, the employee's dean and vice president must also give approval for a fee waiver. For more information, refer to the Policy and Procedures Letters.

**Withdrawal from the University**

The withdrawal process is initiated in the student's dean's office. The student should appear in person, request an official withdrawal, and hand carry the form to the appropriate offices to complete the process. If the student is unable to appear in person, the request for withdrawal may be initiated through the mail or by phone to the student's dean's office. A student who withdraws prior to the end of the sixth week of a regular semester or the third week of a summer session will receive a grade of "W" (withdrawn). A student who withdraws after the sixth week of a regular semester or the third week of a summer session but prior to "Pre-finals Week," will receive a grade of "WP" (withdrawn passing) or "WV" (withdrawn failing) as assigned by the instructor of each course. The grade of "WF" will be calculated in the grade point average.

After the beginning of "Pre-finals Week" a student may not withdraw from the University and shall be assigned only the grade of "A", "B", "C", "D", or "F" or (when appropriate) "I", "NP", "P", or "R" by the instructor of each course at the end of the semester or summer session.

**OFFICIAL RECORDS**

**Freshmen Progress Reports**

The faculty will report grades for all freshmen on the dates as printed in the official University calendar. The dates will normally be prior to mid-semester. Progress reports are made available to freshsmen shortly afterward. Copies are made available to the students' advisers and the students' deans.

**Grade Reports**

Reports of the grades of all students are compiled and released shortly after the end of each semester by the Office of the Registrar. These reports are made available to the students, the students' advisers and the students' deans.

**Official Transcripts**

All official transcripts of students' academic records at OSU are prepared and released by the Office of the Registrar. The official transcript includes the academic record, both undergraduate and graduate. It contains the signature of a University official and the official, imprinted seal of the University. Primary usage of the official transcript is for application for transfer to other academic institutions and for employment purposes.

**Students' Rights to Privacy**

The Family Educational Rights and Privacy Act of 1974 (Buckley Amendment) was designed to protect the privacy of educational records, to establish the right of students to inspect and review their educational records in all offices, and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings.

An OSU student has the right to:

1. Inspect and review information contained in his or her educational records.
2. Challenge the contents of the educational record.
3. Have a hearing if the outcome of a challenge is unsatisfactory.
4. Submit an explanatory statement for inclusion in the educational record, if the outcome of the hearing is unsatisfactory.
5. Secure a copy of the institutional policy, which includes the location of all educational records.
6. Prevent disclosure, with certain exceptions, of personally identifiable information from the educational record.

Transcripts of academic records at the University may be ordered in person or by mail from the Office of the Registrar, Transcripts Section, Whitehurst 103, Oklahoma State University, Stillwater, Oklahoma 74078-0102. Official transcripts will not be available until approximately three weeks after final examinations. Requests should include the following:

1. Student's full name (include maiden or other name if applicable).
2. Student I.D. number.
4. The last semester the student attended.
5. Whether the current semester grades and degree are to be included when a transcript is ordered near the end of a semester.
6. Full names of the recipients of the transcripts, whether they are agencies, colleges, or individuals. Complete mailing addresses should also be included.
7. Student's signature. (This is the student's authorization to release the records to the designee.)

A student having delinquent financial obligations to the University will not be granted a transcript.

Copies of transcripts from other institutions cannot be furnished.
## Costs

### FEES AND TUITION

It is extremely important that students carefully consider the total financing of their education, from the entering term to the completion of the degree. Financial help will be needed beyond those funds which the student or the family is able to provide, the student should make the necessary applications for financial assistance well in advance of enrollment. Students should pay particular attention to early deadlines for application for grants, scholarships, work-study, and Perkins Loans. While the needs and resources of each student differ, the University can provide a general list of fees and expenses normally encountered. Students should note that fees are subject to change without notice. The figures which follow are for the 1991-92 academic year.

Students are given information at the time they complete their enrollment on the procedures and deadlines for payment of tuition and fees. (See "Financial Obligations" elsewhere in the Catalog.)

The required fees and nonresident tuition for Oklahoma State University are listed below. General fees and nonresident tuition are based on level of course. All course offerings are listed by first digit identifying level of course. Lower-division courses are all courses with the first digit 0 through 2. Upper-division courses are all courses with the first digit 3 or 4. Graduate-division courses are all courses with the first digit 5 or above.

### Oklahoma Residents

#### Lower-division courses

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fee</td>
<td>$45.00</td>
</tr>
<tr>
<td>Required student activity fee</td>
<td>$2.25</td>
</tr>
<tr>
<td>Required facility fee</td>
<td>$4.30</td>
</tr>
<tr>
<td>library automation and mainframe fee</td>
<td>$1.50</td>
</tr>
<tr>
<td>Student assessment fee</td>
<td>$1.00</td>
</tr>
<tr>
<td>Total per credit hour</td>
<td>$54.05</td>
</tr>
<tr>
<td>Nonresident tuition fee</td>
<td>$112.75</td>
</tr>
<tr>
<td>Student Health Center fee per semester*</td>
<td>$169.80</td>
</tr>
<tr>
<td>Nonresident tuition</td>
<td>$46.00</td>
</tr>
</tbody>
</table>

#### Upper-division courses

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fee</td>
<td>$48.00</td>
</tr>
<tr>
<td>Required student activity fee</td>
<td>$2.25</td>
</tr>
<tr>
<td>Required facility fee</td>
<td>$4.30</td>
</tr>
<tr>
<td>library automation and mainframe fee</td>
<td>$1.50</td>
</tr>
<tr>
<td>Student assessment fee</td>
<td>$1.00</td>
</tr>
<tr>
<td>Total per credit hour</td>
<td>$57.05</td>
</tr>
<tr>
<td>Nonresident tuition</td>
<td>$138.25</td>
</tr>
<tr>
<td>Student Health Center fee per semester*</td>
<td>$211.05</td>
</tr>
</tbody>
</table>

### Nonresidents of Oklahoma

#### Lower-division courses

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fee</td>
<td>$45.00</td>
</tr>
<tr>
<td>Required student activity fee</td>
<td>$2.25</td>
</tr>
<tr>
<td>Required facility fee</td>
<td>$4.30</td>
</tr>
<tr>
<td>Library automation and mainframe fee</td>
<td>$1.50</td>
</tr>
<tr>
<td>Student assessment fee</td>
<td>$1.00</td>
</tr>
<tr>
<td>Total per credit hour</td>
<td>$63.75</td>
</tr>
<tr>
<td>Nonresident tuition</td>
<td>$1,900.00</td>
</tr>
<tr>
<td>Student Health Center fee per semester*</td>
<td>$46.00</td>
</tr>
</tbody>
</table>

#### Upper-division courses

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fee</td>
<td>$48.00</td>
</tr>
<tr>
<td>Required student activity fee</td>
<td>$2.25</td>
</tr>
<tr>
<td>Required facility fee</td>
<td>$4.30</td>
</tr>
<tr>
<td>Library automation and mainframe fee</td>
<td>$1.50</td>
</tr>
<tr>
<td>Student assessment fee</td>
<td>$1.00</td>
</tr>
<tr>
<td>Total per credit hour</td>
<td>$72.80</td>
</tr>
<tr>
<td>Nonresident tuition</td>
<td>$3,410.00</td>
</tr>
<tr>
<td>Student Health Center fee per semester*</td>
<td>$46.00</td>
</tr>
</tbody>
</table>

### Graduate-division Courses

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fee</td>
<td>$63.75</td>
</tr>
<tr>
<td>Required student activity fee</td>
<td>$2.25</td>
</tr>
<tr>
<td>Required facility fee</td>
<td>$4.30</td>
</tr>
<tr>
<td>Library automation and mainframe fee</td>
<td>$1.50</td>
</tr>
<tr>
<td>Student assessment fee</td>
<td>$1.00</td>
</tr>
<tr>
<td>Total per credit hour</td>
<td>$138.25</td>
</tr>
<tr>
<td>Nonresident tuition</td>
<td>$211.05</td>
</tr>
<tr>
<td>Student Health Center fee per semester*</td>
<td>$46.00</td>
</tr>
</tbody>
</table>

### College of Veterinary Medicine

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fee</td>
<td>$1,900.00</td>
</tr>
<tr>
<td>Required student activity fee</td>
<td>$2.25</td>
</tr>
<tr>
<td>Required facility fee</td>
<td>$4.30</td>
</tr>
<tr>
<td>Library automation and mainframe fee</td>
<td>$1.50</td>
</tr>
<tr>
<td>Student assessment fee</td>
<td>$1.00</td>
</tr>
<tr>
<td>Total per credit hour</td>
<td>$63.75</td>
</tr>
<tr>
<td>Nonresident tuition</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Student Health Center fee per semester*</td>
<td>$46.00</td>
</tr>
</tbody>
</table>

*Students enrolled in six hours or less pay only $7.00.

### Fees for Facilities and Special Services

Students regularly enrolled in the University are assessed facility fees which entitle them to use the Student Union, the Colvin Physical Education Center, the Wellness Center and the use of the Student Health Center. Certain groups of students in special courses may be on campus for very short time intervals or may be required by the University to reside off-campus for the entire semester. Such students...
Special Class Charges

In certain courses, special services, supplies or equipment may be used. Costs for these are not normally covered by fees, tuition or departmental operating budgets, and, therefore, the cost is incurred by the student. Special charges are listed in each semester’s class schedule book.

Special Fees

Advanced standing examination fee
- Locally developed (per credit hour): $5.00
- Nationally developed national agency rate
Application fee for nonresident undergraduate students: $15.00
Audit without credit same as Oklahoma residents general fee
Automobile parking permit (per year):
- Campus residents: $25.00
- Off-campus residents: $35.00
Correspondence course fees (per semester hour): $50.00
Extension course fees (per semester hour):
- Undergraduate courses: $48.00
- Graduate courses: $63.75
Graduation fees:
- Bachelor’s degree: $15.00
- Master’s degree: $20.00
- Doctor of Veterinary Medicine degree: $20.00
- Specialist in Education, Doctor of Philosophy, Doctor of Education degrees: $50.00
- Thesis binding fee each: $6.00
- Dissertation microfilming fee each: $35.00
International student status maintenance fee:
- per semester: $15.00
- per summer session: $10.00
Late enrollment fee:
- first day: $5.00
- maximum: $10.00
Music fees:
- Beginning class lessons in music per semester hour: $7.50
- Group lessons in music per semester hour: $15.00
- Individual lessons in music per semester hour: $15.00
- Organ practice per semester hour: $7.50
- Maximum charge per semester for music instruction: $60.00
Transcript (per copy after first one): $1.00

Other Expenses

Books and supplies used by the student are available at the University Bookstore at reasonable prices. Additional incidental and personal expenses such as clothing and entertainment will depend upon the individual student.

International Students. It is the long-established practice of Oklahoma State University to charge a special administrative/management/programming fee for international students who need extra assistance and/or whose sponsors have indicated a requirement or desire for supplementary assistance. This assistance is beyond the content of the regular academic program of the University established for domestic students. The amount of the fees will be based on the level of professional assistance needed. It is the established practice and policy of the University to charge appropriate amounts for such items as special training, research costs, enrollment, necessary travel and transportation, and other costs as may be required to provide a complete and appropriate program of education for international students. The Office of International Programs at OSU is the designated office to coordinate, expedite, and administer all aspects of procedures pertaining to such programs of education and training. Sponsors should direct all matters of the University’s Office of International Programs.

Fee Policy for Graduate Assistants

The University will waive the nonresident tuition for graduate assistants employed at least one-fourth time in instruction, research or extension. Such waiver will include the summer term immediately following employment as a graduate assistant for the spring semester, even though the student is not employed for that summer term.

Fee Refund Policy for Students Entering Military Service

If a student enters military service during the term in which he or she is enrolled and has not completed sufficient work for receiving grades, but is in good standing academically, the University will waive enrollment fees for the student during the term in which he or she re-enrolls after military service has been completed. The amount of the fee waiver is equal to the amount of fees paid for the semester during which withdrawal occurred. If the University finds that it is not feasible to waive the enrollment fees, it will make a refund to the student of the full amount of fees paid.

If a student enters military service during the term and is not in good academic standing at the time, the regular fee refund policy of the University applies.

Residence Hall Rates

All rates are approved by the OSU Board of Regents and are subject to change. The rates listed below are effective for the academic year 1990-91.

Residence Halls

Men’s Halls
- East Bennett
- Kerr
- Stout
- Wentz
- Willham South
- Iba
- Bennett Apartments

Women’s Halls
- West Bennett
- Drummond
- Stout
- Wentz
- Willham North
- Iba

Meal Plan Charges (All halls.):
- 5 meals per week: $400.00
- 10 meals per week: $643.00
- 15 meals per week: $673.00
- 20 meals per week: $703.00

Room Rent Charges. All halls provide a telephone instrument and local phone service in each room, and cable TV in floor lounges. Single rooms are available in all halls except the Bennett Apartments for 1.6 times the double room rate.
University Apartments
(Rates include a telephone instrument and local phone service in each apartment. There is an additional $7.25 per month charge for cable service.)

The University operates complexes and apartments to house married and single parents, and a limited number of single graduate and upperclass students. Priority is given to former residence hall single students and families. Individuals should apply eight to ten months in advance to assure choice apartments.

Furnished apartments include coffee table, end or corner table, one table lamp, two-seater sofa, two occasional chairs, a nightstand, double or single beds as needed, and a study desk. Table lamps and nightstands may not be available in the 1957 area.

The following rates include all utilities (gas, water and electricity). A required local digital telephone service charge of $19.00 per month is included in the basic apartment rent listed below.

<table>
<thead>
<tr>
<th>Apt Type</th>
<th>Monthly Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957 Apartments (AC optional)</td>
<td>$294.00</td>
</tr>
<tr>
<td>Air conditioning, optional</td>
<td>$50.00</td>
</tr>
<tr>
<td>Apartment furnishings, optional</td>
<td>$20.00</td>
</tr>
<tr>
<td>Basic cable television, optional</td>
<td>$7.25</td>
</tr>
<tr>
<td>1964 and 108 Apartments (AC optional)</td>
<td>$306.00</td>
</tr>
<tr>
<td>Brumley and Graduate Apartments (AC included)</td>
<td>$365.00</td>
</tr>
</tbody>
</table>

ESTIMATED TOTAL EXPENSES FOR STUDENTS
An estimated budget (based on 1990-91 figures) for an undergraduate student at OSU is as follows:

<table>
<thead>
<tr>
<th>EXPENSE</th>
<th>PER SEMESTER CHARGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$716.00</td>
</tr>
<tr>
<td>(Based on 14 credit hours)</td>
<td></td>
</tr>
<tr>
<td>University Housing and Board</td>
<td>$1,436.00</td>
</tr>
<tr>
<td>(Based on average, double occupancy, residence hall charges)</td>
<td></td>
</tr>
<tr>
<td>Textbooks and Supplies</td>
<td>$244.00</td>
</tr>
<tr>
<td>Ave. Misc. Personal Expenses</td>
<td>$1,202.00</td>
</tr>
<tr>
<td>Total Per Semester</td>
<td>$3,598.00</td>
</tr>
</tbody>
</table>

FINANCIAL OBLIGATION
Enrollment at Oklahoma State University incurs certain obligations and commitments on the part of an individual student, one of which is the student's responsibility to pay all financial accounts owed to the University in a timely manner. In order to remain in good financial standing with the University and thereby continue to participate in its educational programs, services and benefits, a student must meet all financial obligations incurred at the University on or before the due dates described.

All students are required to pay an advance fee payment toward their estimated fees at the time of enrollment. This advance payment will be credited to the student's account and applied to outstanding charges during the last semester of attendance. A student may request a refund of the advance payment at any time in which it is not required to hold an enrollment and there are no outstanding charges against the account.

Fees and tuition will appear on the regular monthly statement which is mailed to the student's local address.

All fees (required and optional) and tuition associated with the student's enrollment shall be due in the Office of the Bursar no later than 5:00 p.m. on the 15th day of each month following billing. All delinquent accounts in excess of $40 will accrue an interest penalty at the rate of one and one-half percent monthly.

Accounts must be cleared before the student can obtain the release of any records, secure a transcript, receive a diploma, or enroll at Oklahoma State University for subsequent semesters.

Students who need financial assistance to attend college are encouraged to consider the many types of financial aid available through the OSU Office of Student Financial Aid. These programs include scholarships, grants, loans, and part-time jobs.

Financial aid at OSU is awarded on the basis of demonstrated financial need. Each student who wishes to be considered for need-based assistance should complete the American College Testing Service Family Financial Statement (ACT-FFS) and submit it to the processing center in Iowa City, Iowa as soon after January 1 as possible to receive aid for the succeeding academic year. ACT-FFS packets are available at the Office of Student Financial Aid as well as at most colleges and high schools. Early application is encouraged due to the high demand for money available. An analysis of the ACT-FFS is used to determine demonstrated need for federal, state, and institutional programs such as Pell Grants, Supplemental Educational Opportunity Grants (SEOG), Oklahoma Tuition Aid Grants (OTAG), Perkins Loans (formerly NDSL), Stafford Loans (formerly GSL), College Work-Study (CWS), and Fee Waiver Scholarships.
There are also programs available for students who do not demonstrate financial need. A number of fee waiver scholarships are awarded solely on the basis of academic achievement, for which standardized test scores and high school and college grade-point averages are used as awarding criteria. Wentz Service Scholarships provide students with jobs designed to develop skills beneficial to future employment while working in a University office. These scholarships are awarded through each of the seven colleges at OSU as well as a number of administrative offices on campus. The Parent Loan for Undergraduate Students (PLUS), Program and Supplemental Loans for Students (SLS) allow graduate students and independent undergraduates, as well as parents of dependent undergraduates, to borrow through participating lenders.

To be considered for financial aid, a student must:
1. Be a U.S. citizen or a permanent resident of the United States. Those who are not citizens or permanent residents are not eligible for federal or state assistance.
2. Be enrolled at least half-time as a degree or certificate-seeking candidate. Half-time status is defined as taking at least six credit hours as an undergraduate or four credit hours as a graduate student.
3. Not be in default on a Stafford PLUS/SLS, or Perkins Loan.
4. Not owe a repayment to the Pell Grant, SEOG, or OTAG program.
5. Meet minimum satisfactory academic progress standards.
6. Be prompt in responding to any requests for additional information made by the Office of Student Financial Aid. Students and parents are invited to contact the Office of Student Financial Aid for information regarding financial aid programs or to make an appointment with a financial aid counselor to discuss specific eligibility requirements.

**Pell Grant**

Pell Grant eligibility is determined by the U.S. Department of Education by using a congressionally-approved formula. After completing the ACT-FFS, each applicant will receive a Student Aid Report (SAR) from ACT. Eligible students should submit all copies of their SAR's to the Office of Student Financial Aid.

Supplemental Education Opportunity Grants are awarded to students who demonstrate financial need as reflected in the needs analysis form. Funding in this program is limited and is usually awarded to applicants who demonstrate the most financial need.

Oklahoma Tuition Aid Grants are awarded to eligible Oklahoma residents who may apply by correctly completing the ACT-FFS. Grant amounts are determined by the applicant’s enrollment status, demonstrated need, and by the availability of funds. Students are notified of their eligibility and award amounts by the Oklahoma State Regents for Higher Education, not by OSU.

**Grants**

These scholarships are awarded each year to upperclass students who need financial assistance. These funds are available to students who have attained a high scholastic standing in high school. Transfer scholarships are offered each year to outstanding students transferring from two- and four-year colleges to OSU. Applicants must apply for admission by March 1. Further information may be obtained from the offices of High School and College Relations and University Scholarships.

University scholarships for upperclass students are awarded each year to sophomores, juniors, and seniors who have outstanding academic records. Applications for these scholarships can be obtained from the Office of Student Financial Aid and must be received by March 1.

**Scholarships**

Approximately 1,900 undergraduates and graduate students receive fee waiver scholarships each year. Approximately 100 students receive Wentz Service Scholarships, and numerous other scholarships are awarded through the various OSU departments, colleges and other offices.

**Fee and Tuition Waiver Scholarships**

Fee waivers are awarded to undergraduate and graduate students on the basis of both demonstrated financial need and academic achievement. Awards range from approximately $650 to $1,500 per year. Freshman fee waivers are awarded to entering students who have attained a high scholastic standing in high school. Transfer scholarships are offered each year to outstanding students transferring from two- and four-year colleges to OSU. Applicants must apply for admission by March 1. Further information may be obtained from the offices of High School and College Relations and University Scholarships.

**Other OSU Scholarships**

Both undergraduate and graduate students are encouraged to explore other scholarship opportunities that may be offered by the various colleges and academic departments at OSU. The University Scholarships Office and the student academic services office of each college are excellent resources for specific scholarship information. The student may wish to use the scholarship search program, FINDS, to assist in locating other scholarship sources. FINDS is located in the offices of Student Financial Aid, University Scholarships and High School and College Relations.

**Student Employment**

The Office of University Personnel Services, Employment section, provides assistance to OSU students seeking part-time employment. Students are informed of job opportunities both on campus and in the Stillwater community. Students interested in employment may obtain applications in this office. After completing the application, the student should return it to the office. The largest number of jobs are available at the beginning of each semester; however, jobs do become available throughout the year.
Student Rights and Responsibilities

Under the authority granted by article 6, section 31 and 31a of the Constitution of the State of Oklahoma and Title 70, 1965 Oklahoma Statutes, Section 3412 (a), (o), Oklahoma State University is granted full authority to promulgate rules and regulations governing the conduct of its students.

NOTE: The information contained herein has been updated to include the most recent revisions of regulations for students and student activities. The entire statement of Student Rights and Responsibilities is currently under review and will be official pending approval of the Board of Regents.

To obtain copies of University policies related to Students and Student Activities, you may go to the Office of Student Activities (306 Student Union) or the Office of the Vice President for Student Services (201 Whitehurst).

1. Legal Obligations of the Student

All students are expected to conform to all local, state, and federal laws and all duly constituted University regulations. Any student or group of students who should disturb the public peace, do violence to any person, destroy, molest, or deface the University property, or deliberately disrupt the function of the University would fail in their responsibility to the University and be subject to appropriate disciplinary measures, including suspension. Both individuals and organizations, or the officers of the organization, may be subject to disciplinary action.

a. Definition of Disruptive Conduct.

The Oklahoma State University has long honored the right of the individual to free discussion and expression, of peaceful demonstration, and of petition and peaceful assembly. That these rights are a part of the fabric of this institution and of the nation as stated in the Bill of Rights is not questioned. They must remain secure. It is equally clear, however, that in a community of learning, willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated.

b. Responsibility of the Student.

Any student, who willfully by use of violence, force, coercion, threat, intimidation or fear, obstructs, disrupts, or attempts to obstruct or disrupt, the normal operations or functions of the University, or who orally or in writing advises, procures, or incites others to do so, shall be subject to dismissal from the University.

The following, while not intended to be exclusive, illustrates the offenses encompassed herein: occupation of any University building or part thereof with intent to deprive others of its use; blocking the entrance or exit of any University building or corridor or room therein; setting fire to or by any other means substantially damaging any University building or property, or the property of others on University premises; any possession or display of or attempt or threat to use or use of firearms, explosives, other weapons or destructive means or devices, except as necessary for law enforcement, in any University building or on the University campus; prevention of the convening, continuation or orderly conduct of any University class or activity or of any lawful meeting or assembly in any University building or on the University campus; inciting or organizing attempts to prevent student attendance at classes; and, interfering with or blocking normal pedestrian or vehicular traffic on the University campus.

c. Responsibility of the President.

When it appears that there is a violation of Paragraph 1.a or 1.b, it shall be the duty of the President (and he is fully authorized to act) to take all steps which he deems advisable to protect the assumed and designated interests of the Oklahoma State University and to see that its Rules, Regulations, and Policies are enforced. He shall insure that any person or persons found guilty after proper hearing shall be disciplined in accordance with the existing Oklahoma State University Student Disciplinary Regulations.

In carrying out these duties, the President may call upon any members of the University Administration, or any member of the Faculty, and he may call upon any agency of the University created to deal with cases arising under Section a. Action by any state or Federal Court shall not preclude the University from exercising its disciplinary authority.

d. Responsibility of the Board of Regents.

The Board of Regents recognizes that by the Constitution and Statutes it has the power to make such rules and regulations for the management of the University as it may deem necessary and expedient, not inconsistent with the constitution and laws of the State. While the Regents fully appreciate their obligation in this respect, they further recognize that in dealing with those offenses against the University defined in Section a hereof, they must impose the duty and authority of enforcing the policies set forth herein the principal executive Officer of the University, the President. It will be the responsibility of the Regents to furnish all possible assistance to the President when requested by him.

e. Subject to the provisions of Paragraph 1. a. through 1. d., it shall be the duty of the President to exercise full authority in the regulation of student conduct and in matters of student discipline. In the discharge of this duty, delegation of such authority may be made by the President to administrative or other officers of the institution, in such manner and to such extent as may by the President be deemed necessary and expedient; provided, that in the discharge of this duty it shall be the duty of the President to secure to every student the right of due process.

2. Financial Obligations of the Student

It is the policy of Oklahoma State University that in order to remain in good financial standing with the University and thereby continue to participate in its educational programs, services and benefits, a student must meet all financial obligations incurred at the University or on before the due dates herein described.

a. All students are required to pay $40 towards their estimated fees at the time of enrollment. This advance payment will be credited to the student’s account and applied to outstanding charges during the last semester of attendance. Students may request a refund of the advance payment at any time in which it is not required to hold enrollment and there are no outstanding charges against the account.

b. All approved fees (required and optional) and tuition associated with the student's enrollment shall be due in the Office of the Bursar no later than 5:00 p.m. on Friday, the fifth week of a semester (or the third week of a summer session).

c. All room and board charges associated with living in University housing (single or married) shall be due by the dates published in the rate schedule section of the housing contract.

d. All accounts other than those associated with enrollment or housing (such as fines, service charges, short-term emergency loans, etc.) are due within 10 days from their billing date.

Accounts not cleared by their respective due dates are delinquent and shall be subject to the following action:

a. Delinquent accounts which have a cumulative balance in excess of $40 are subject to a late payment penalty at the rate of 1 1/2% monthly on the unpaid balance.

b. All delinquent accounts shall result in a “hold” being placed on the student’s academic record and grade slip, thereby disallowing pre-enrollment subsequent re-enrollment, receipt of a transcript, or diploma until the account has been cleared.

c. The passing of a check to the University which is not honored by the banking institution against which it is drawn may result in the cancellation of the student’s enrollment for failure to pay a delinquent account.

(See University Policy & Procedures Letter No. 3-0335.1)

3. Conduct Violations.

The basic philosophy of university discipline is one of education. It centers around encouraging the growth and development of students' potentialities through the responsible practice of good, sound principles and relationships. This infers a need for the understanding of self-discipline and respect for the rights and privileges of others by those who are involved in the educative process.

Oklahoma State University
The total effort is directed toward corrective and preventive rather than punitive discipline. For this reason, the main concern lies with the individual as well as his actions. On the basis of this individual approach to discipline, emphasis is placed on due process in order to insure a fair hearing. No matter who deals with a particular disciplinary situation, consideration is given to all factors and information in the case. At no time are arbitrary or authoritarian actions sanctioned in Oklahoma State University's disciplinary structure.

The following actions constitute violations for which students are subject to disciplinary actions:

a. Any form of cheating, and/or assisting with cheating, including but not limited to plagiarism, unauthorized possession of examinations, falsification of records.

b. Theft or improper possession of university property or property belonging to others.

c. Individual or group conduct which results in disturbance or distress to others or which causes defacement, damage, or destruction to property. These abuses include any actions, activities, or situations intentionally created to produce unnecessary and undue mental and physical discomfort, embarrassment, harassment, ridicule, excessive fatigue, interference with scholarship or personal lives, or exposure to situations wherein one's physical or mental well being may be endangered. This includes but is not limited to hazing of fellow students.

HAZING LAW

The following is an excerpt of an amendment of 210.S.1981, Section 852.

A. No student organization or any person associated with any organization sanctioned or authorized by the governing board of any public or private school or institution of higher education in this state shall engage or participate in hazing.

B. Any hazing activity described in subsection F of this section upon which the initiation or admission into or affiliation with an organization sanctioned or authorized by a public or private school or by any institution of higher education in this state is directly or indirectly conditioned shall be presumed to be a forced activity, even if the student willingly participates in such activity.

C. A copy of the policy or the rules and regulations of the public or private school or institution of higher education which prohibits hazing shall be given to each student enrolled in the school or institution and shall be deemed to be part of the bylaws of all organizations operating at the public school or the institution of higher education.

D. Any organization sanctioned or authorized by the governing board of public or private school or of an institution of higher education in this state which violates subsection A of this section, upon conviction, shall be guilty of a misdemeanor, and may be punishable by a fine of not more than One Thousand Five Hundred Dollars ($1,500.00) and the forfeiture for a period of not less than one (1) year all of the rights and privileges of being an organization organized or operating at the public or private school or at the institution of higher education.

E. Any individual convicted of violating the provisions of subsection A of this section shall be guilty of a misdemeanor, and may be punishable by imprisonment for a term not to exceed ninety (90) days in the county jail, or by the imposition of a fine not to exceed Five Hundred Dollars ($500.00), or by both such imprisonment and fine.

F. For purposes of this section:

1. Hazing means an activity which recklessly or intentionally endangers the mental health or physical health or safety of a student for the purpose of initiation or admission into, or affiliation with, any organization operating subject to the sanction of the public or private school or of any institution of higher education in this state;

2. "Endanger the physical health" shall include but not be limited to any brutality of a physical nature, such as whipping, beating, branding, forced calisthenics, exposure to the elements, forced consumption of any food, alcoholic beverage as defined in 506 of Title 37 of the Oklahoma Statutes, or nonintoxicating beverage as defined in 163.2 of Title 37 of the Oklahoma Statutes, drug, controlled dangerous substance or other substance, or any other forced physical activity which could adversely affect the physical health or safety of the individual; and

3. "Endanger the mental health" shall include any activity, except those activities authorized by law, which would subject the individual to extreme mental stress, such as prolonged sleep deprivation, forced prolonged exclusion from social contact, forced conduct which could result in extreme embarrassment, or any other forced activity which could adversely affect the mental health or dignity of the individual.

SECTION 4. This act shall become effective July 1, 1990.

SECTION 5. It being immediately necessary for the preservation of the public peace, health, and safety, an emergency is hereby declared to exist, by reason whereof this act shall take effect on the 30th day of April, 1990, and be in full force from and after its passage and approval.

Passed the House of Representatives the 30th day of April, 1990.

Passed the Senate the 17th day of April, 1990.

Approved by the Governor of the State of Oklahoma the 2nd day of May, 1990, at 11:09, o’clock AM.

d. Failure to comply with the lawful directions of all University employees acting within the scope of their duties.

e. Forgery, alteration, or unauthorized use of University documents, records (including computerized records), identification, or property, or providing false representations to the University in any form, written or verbal.

f. Possession or firing of firearms, fireworks, or other explosives on University property or in the course of a University activity other than military sciences or specially authorized teams, e.g., rifle team.

f. False reporting of a bomb, fire, or other emergency.

g. Unauthorized alteration or misuse of any firefighting or other safety equipment.

h. Unauthorized entry into or use of any building, facility, or room on University property. This includes the unauthorized possession or use of University keys, lock combinations, or other access codes.

j. Use, possession, and/or distribution of any state of federally controlled drug or other substance except as authorized by law.

k. Consumption, possession, or service of beer and alcoholic beverages on the campus, in University housing (including residence halls and sorority and fraternity housing), in the State Room for public use and Lobby of the Student Union Hotel, but excluding Married Housing and Lobby of the Student Union Hotel, the State Room for public use and the State Room for public use and Lobby of the Student Union Hotel.

l. Any other conduct that is made an offense by local, state, or federal penal law which takes place on University property or in the course of a University activity.

m. Violation of any local, state, or federal law not on University property will also be subject to University disciplinary action in cases where a clear and distinct interest of the University is involved or affected. This includes, but is not limited to, offenses related to the security and welfare of persons and/or property, the integrity of the educational process, or the illegal use of alcohol or drugs.

n. Smoking. Smoking is prohibited in University classrooms, laboratories, library, arena area of the fieldhouse, and other designated areas.

o. Fire Safety Sprinkler System.

STATEMENT OF CONCERN: To best insure fire safety of residents and other clientele of Oklahoma State University, sprinklers are being installed in various buildings, including residence halls. Accordingly, certain policies are necessary to support the proper care of this life safety equipment. In addition, vandalism, tampering, or reckless action that causes sprinklers discharging will result in serious penalties. Such behavior will be treated as turning in a false fire alarm.

A. Regulations regarding use of sprinkler system.

1. Sprinklers are to be activated automatically only in case of fire related emergencies.

2. Under no circumstances may sprinklers be painted or in any way obstructed. Objects may not be hung or draped from sprinkler apparatus.

3. Sprinklers activated during an emergency are to be turned off only by authorized fire safety personnel. In the event of a false alarm, residence hall staff are to shut off the water at specific head location (by use of sprinkler tongs).

4. No one may commit acts which endanger the proper functioning of sprinkler systems. Violations of this regulation may result in both judicial and administrative disciplinary actions.
B. Penalties for reckless action contributing to sprinkler discharge, vandalism, and destruction.

1. University Administrative penalties include:
   a. Paying for any and all damages caused by violation.
   b. Disciplinary sanctions, which may include probation, suspension, or expulsion.

2. In the event a perpetrator is a conference or guest, the above measures (excluding lb) will be taken and the individual may be expelled from the conference or required to leave the campus and be subject to arrest should such person return.

4. Judicial Process

The Relationship of the University and Civil Authority. The student is responsible to two communities, the larger social community and the academic community. The student is consequently subject to two sources of authority, civil-criminal authority and University authority. The University reserves the right to hold students responsible for offenses arising from without the University in those areas involving: (1) the general welfare of the student involved; (2) the general welfare of the other students; (3) the general welfare of the University; and (4) the general welfare of the "community" as a whole.

a. Disciplinary Procedures. Reports of misconduct are made in the first instance to the Office of the University Discipline Officer for investigation, and appropriate action, if any. Initial review with the student concerning the nature of the complaint is done by a staff member of the University Discipline Office. After the review with the student, staff members of the University Discipline Officer have a responsibility and authority to take disciplinary action if such appears in their judgment to be warranted. If the student desires a formal hearing, the University Discipline Officer will serve as the hearing officer. Should the student believe he/she has been treated unfairly, he/she has the right to appeal the severity of disciplinary action. In many cases in which the action involves suspension or expulsion, the student may appeal to either the University Discipline Officer or the Student Faculty Committee on Student Conduct. In cases involving a less severe action, the student may appeal to the Vice President for Student Services. The Student-Faculty Committee on Student Conduct is composed of eight (8) faculty appointed by the President from a list submitted by the Faculty Council and five (5) students appointed by the President of the Student Government Association with the advice and consent of the Senate. The Student-Faculty Committee on Student Conduct shall be responsible for establishing and making available its own procedures. All decisions of the Student-Faculty Committee on Student Conduct are advisory to the Vice President for Student Services, the President's Office and, finally, the Board of Regents. Copies of the complete appeal procedures are available in the Office of the University Discipline Officer.

b. The following guidelines are established for the direction of all individuals conducting formal hearings in disciplinary matters:

1. The student shall be notified by an appropriate University official that he/she is accused of violating a regulation.
2. At least 72 hours prior to the hearing, the student shall be entitled to the following:
   A. written notification of the time and place of the hearing.
   B. a written statement of the charges sufficient particularity to enable the student to prepare a defense.
3. The student shall be entitled to appear in person and to present a defense to the hearing officer and may call witnesses in his/her behalf. The student may also elect not to appear before the hearing officer. Should the student elect not to appear, the hearing shall be held in his/her absence. The failure of a student to appear shall not be taken as indicative of guilt and must be noted without prejudice.
4. The student shall be entitled to be accompanied by counsel of his/her choice.
5. The student or his/her counsel shall be entitled to ask questions of the hearing officer or of any witnesses.
6. The student shall be entitled to refuse to answer questions.
7. The student shall be entitled to an expeditious hearing of his/her case.
8. The student shall be entitled to an explanation of the reasons for any decision made in the case.

c. Penalties. Penalties for violation of University regulations may include one or a combination of the following: (1) Reprimand; (2) the imposing of specified restrictions; (3) Conduct Probation. When a student is placed on conduct probation, the student's academic dean and Single Student Housing may be notified when appropriate to the case. A second violation means that disciplinary action will be based on both charges. A student who is placed on indefinite conduct probation may petition to be removed from probation status not sooner than one calendar year from the date the probation began. Record of conduct probation will be destroyed after four years or upon graduation of the student, whichever occurs first; (4) Suspension. A student may be suspended for a definite period. Readmission to the University can be granted only by action of the Vice President for Student Services. A student who is suspended for reasons of conduct may apply for readmission no sooner than six months from the date of the suspension. Suspension is recorded on the back of the transcript. (5) Expulsion. When a student is expelled, a record of this action is made a part of the student's permanent record in the Office of the Registrar. A student who is expelled will normally not be allowed to re-enter the University.

d. The University Judicial Structure. The President has delegated to the Vice President for Student Services the authority to enforce conduct regulations and administer a student judicial system. In turn, the Vice President for Student Services may delegate to other groups authority for handling infractions of rules within specified areas. Major governing of groups and the administrative units to whom they are responsible (Residence Halls Association-Single Student Housing; Panhellenic and Interfraternity Councils-Department of Student Activities) may develop rules and regulations to protect the rights and freedoms of their members. Conduct boards or courts may be established by these groups to enforce University, house or hall regulations involving members of their groups, provided that all rules, regulations, procedures, and types of disciplinary actions are approved by the Vice President for Student Services.

e. Policy on Violations by Student Organizations. Alleged violations of regulations by living group organizations shall be referred to the appropriate judicial board for action. Alleged violations by other student organizations shall be referred to the Committee on Student Organizations.

f. Alcohol Education. The target populations for alcohol education include:

1. The Student Body through:
   A. residence halls
   B. fraternity and sorority houses
   C. freshman orientation programs
   D. special programs on alcohol abuse
   E. education as a part of disciplinary action for students violating local or civil laws pertaining to alcohol/drugs use on or off campus
   F. academic offerings especially in education and other helping professions

2. Faculty and Staff through:
   A. faculty and staff meeting agenda items
   B. mail-out brochures, etc.
   C. programs involving intervention techniques

The overall goal of an alcohol education program is to reach as many of the student body, faculty, and staff as possible with some form of educational program on alcohol abuse, including information on referral services. The following efforts are integral to the alcohol education program:

1) Programs for specific campus populations
2) Delivery systems-speakers, video tapes, etc.
3) Evaluation system for individual programs and over all awareness levels

OKLAHOMA STATE UNIVERSITY 19
A Drug Prevention Policy for Students and Employees

1.01 PURPOSE

The Drug Free Schools and Communities Act Amendments of 1989 require an institution of higher education to certify to the U.S. Department of Education by 10-1-90, that it has adopted and implemented a program to prevent the unlawful possession, use, or distribution of illicit drugs and alcohol by students and employees in order to remain eligible for federal financial assistance of any kind. This policy is adopted by Oklahoma State University to comply with this statutory directive.

2.01 POLICY

As set forth in local, state, and federal laws, and the rules and regulations of the University, Oklahoma State University prohibits the unlawful possession, use or distribution of illicit drugs and alcohol by students and employees in buildings, facilities, grounds, or other property owned and/or controlled by the University or as part of University activities.

3.01 INTERNAL SANCTIONS

Any student or employee of the University alleged to have violated this prohibition shall be subject to disciplinary action including, but not limited to, suspension, expulsion, termination, at the individual's request, or referral for prosecution and/or completion, at the individual's request, to the state or federal authorities which could prevent you from entering many careers or obtaining certain jobs. Students and employees are encouraged to review this information. The previous referenced examples of penalties and sanctions are based on the relevant laws at the time of adoption of this policy statement. Such laws are, of course, subject to revision or amendment by way of the legislative process.

5.01 HEALTH RISKS

Alcohol and other drug use represent serious threats to health and the quality of life. More than 25,000 people die each year from drug-related accidents or health problems. With most drugs it is probable that users will develop psychological and physical dependency. The general categories of drugs and their effects are as follows:

Alcohol-short-term effects include behavioral changes, impairment of judgement and coordination, greater likelihood of aggressive acts, respiratory depression, irreversible physical and mental abnormalities in newborns (fetal alcohol syndrome) and death.

Anabolic Steroids-seriously affect the liver, cardiovascular, and reproductive systems. Can cause sterility in males and females, as well as impotency in males.

Barbiturates/Depressants-(downers, quaaludes, valium, etc.) slows down the central nervous system which can cause decreased heart and breathing rates, lower blood pressure, slowed reactions, confusion, distortion of reality, convulsion, respiratory depression, coma and death. Depressants combined with alcohol can be lethal.

Cocaine/Crack-stimulates the central nervous system and is extremely addictive, both psychologically and physically. Effects include dilated pupils, increased heart rate, elevated blood pressure, insomnia, loss of appetite, hallucinations, paranoia, seizures, and death due to cardiac arrest or respiratory failure.

Hallucinogens-(PCP, angel dust, LSD, etc.) interrupt the functions of the part of the brain which controls the intellect and instincts. May result in self inflicted injuries, impaired coordination, dulled senses, incoherent speech, depression, anxiety, violent behavior, paranoia, hallucinations, increased heart rate and blood pressure, convulsions, coma, and heart and lung failure.

Cannabis-(marijuana, hashish, hash, etc.) impairs short-term memory, comprehension, concentration, coordination, and motivation. May also cause paranoia and psychosis. Marijuana smoke contains more cancer-causing agents than tobacco smoke. The way in which marijuana is smoked-deeply inhaled and held in the lungs for a longer period-enhances the risk of getting cancer. Combined with alcohol, marijuana can produce a dangerous multiplied effect.

Narcotics-(smack, horse, demerol, percocan, etc.) initially produce feelings of euphoria often followed by drowsiness, nausea, and vomiting. An overdose may result in convulsions, coma, and death. Tolerance develops rapidly and dependence is likely. Using contaminated syringes to inject such drugs may result in contracting the AIDS virus.

Tobacco/Nicotine-some 170,000 people in the United States die each year from smoking-related coronary heart disease. Some 30% of the 130,000 cancer deaths each year are linked to smoking. Lung, larynx, esophagus, bladder, pancreas and kidney cancers strike smokers at increased rates. Emphysema and chronic bronchitis are ten times more likely among smokers.
Further information concerning health risks may be found in the Student Health Center, Employee Assistance Program Office and others listed below. You should also consult your personal physician about the health risks associated with alcohol and drug use.

6.01 DRUG/ALCOHOL COUNSELING AND REHABILITATION PROGRAMS

University Counseling Services and the Employee Assistance Program have counseling and rehabilitation programs for students and employees, respectively. Should these programs not meet your needs, there are other programs in the community or nearby that may better suit your needs. A number of such programs are listed below. Seeking help from, being referred to or from the services is confidential, and will not, alone, result in disciplinary action. Individual privacy will, of course, be maintained in any counseling/rehabilitation process.

National Institution on Drug Abuse Information and Referral Line, 1-800-662-HELP, M-F, 8:30 a.m.-4:30 p.m.
The National Federation of Parents for Drug-free Youth, 1-800-554-KIDS, M-F, 8 a.m.-5 p.m.
Just Say No Foundation, 1-800 258-2766
National Council on Alcoholism, 1-800-622-2255, 24 hours a day
National Drug Abuse Hotline, 1-800-642-HELP, M-F, 8 a.m.-4:30 p.m.
Cocaine Helpline, 1-800-COCAINE 622-2255, 24 hours a day

6.01 DRUG/ALCOHOL COUNSELING AND REHABILITATION PROGRAMS

University Counseling Services and the Employee Assistance Program have counseling and rehabilitation programs for students and employees, respectively. Should these programs not meet your needs, there are other programs in the community or nearby that may better suit your needs. A number of such programs are listed below. Seeking help from, being referred to or from these services is confidential, and will not, alone, result in disciplinary action. Individual privacy will, of course, be maintained in any counseling/rehabilitation process.

National Institution on Drug Abuse Information and Referral Line, 1-800-662-HELP, M-F, 8:30 a.m.-4:30 p.m.
The National Federation of Parents for Drug-free Youth, 1-800-554-KIDS, M-F, 8 a.m.-5 p.m.
Just Say No Foundation, 1-800 258-2766
National Council on Alcoholism, 1-800-622-2255, 24 hours a day
National Drug Abuse Hotline, 1-800-642-HELP, M-F, 8 a.m.-4:30 p.m.
Cocaine Helpline, 1-800-COCAINE 622-2255, 24 hours a day

6.01 DRUG/ALCOHOL COUNSELING AND REHABILITATION PROGRAMS

University Counseling Services and the Employee Assistance Program have counseling and rehabilitation programs for students and employees, respectively. Should these programs not meet your needs, there are other programs in the community or nearby that may better suit your needs. A number of such programs are listed below. Seeking help from, being referred to or from these services is confidential, and will not, alone, result in disciplinary action. Individual privacy will, of course, be maintained in any counseling/rehabilitation process.

National Institution on Drug Abuse Information and Referral Line, 1-800-662-HELP, M-F, 8:30 a.m.-4:30 p.m.
The National Federation of Parents for Drug-free Youth, 1-800-554-KIDS, M-F, 8 a.m.-5 p.m.
Just Say No Foundation, 1-800 258-2766
National Council on Alcoholism, 1-800-622-2255, 24 hours a day
National Drug Abuse Hotline, 1-800-642-HELP, M-F, 8 a.m.-4:30 p.m.
Cocaine Helpline, 1-800-COCAINE 622-2255, 24 hours a day

6.01 DRUG/ALCOHOL COUNSELING AND REHABILITATION PROGRAMS

University Counseling Services and the Employee Assistance Program have counseling and rehabilitation programs for students and employees, respectively. Should these programs not meet your needs, there are other programs in the community or nearby that may better suit your needs. A number of such programs are listed below. Seeking help from, being referred to or from these services is confidential, and will not, alone, result in disciplinary action. Individual privacy will, of course, be maintained in any counseling/rehabilitation process.

National Institution on Drug Abuse Information and Referral Line, 1-800-662-HELP, M-F, 8:30 a.m.-4:30 p.m.
The National Federation of Parents for Drug-free Youth, 1-800-554-KIDS, M-F, 8 a.m.-5 p.m.
Just Say No Foundation, 1-800 258-2766
National Council on Alcoholism, 1-800-622-2255, 24 hours a day
National Drug Abuse Hotline, 1-800-642-HELP, M-F, 8 a.m.-4:30 p.m.
Cocaine Helpline, 1-800-COCAINE 622-2255, 24 hours a day

6.01 DRUG/ALCOHOL COUNSELING AND REHABILITATION PROGRAMS

University Counseling Services and the Employee Assistance Program have counseling and rehabilitation programs for students and employees, respectively. Should these programs not meet your needs, there are other programs in the community or nearby that may better suit your needs. A number of such programs are listed below. Seeking help from, being referred to or from these services is confidential, and will not, alone, result in disciplinary action. Individual privacy will, of course, be maintained in any counseling/rehabilitation process.

National Institution on Drug Abuse Information and Referral Line, 1-800-662-HELP, M-F, 8:30 a.m.-4:30 p.m.
The National Federation of Parents for Drug-free Youth, 1-800-554-KIDS, M-F, 8 a.m.-5 p.m.
Just Say No Foundation, 1-800 258-2766
National Council on Alcoholism, 1-800-622-2255, 24 hours a day
National Drug Abuse Hotline, 1-800-642-HELP, M-F, 8 a.m.-4:30 p.m.
Cocaine Helpline, 1-800-COCAINE 622-2255, 24 hours a day

End Notes

1 Illicit drug use* is defined as the use of illegal drugs and the abuse of other drugs and alcohol, including anabolic steriods.

2 A drug and/or alcohol abuse assistance/rehabilitation previously approved and/or certified by such purpose(s) by a federal, state, or local health, law enforcement, or other appropriate agency.

3 Cocaine, marijuana, opiates, amphetamines, and other designated substances as set forth in Schedule I of the Controlled Substances Act (21 U.S.C., Sec. 812).

4 Cocaine, marijuana, opiates, amphetamines, and any other drug or substance as set forth in Schedules I through V of the Uniform Controlled Dangerous Substances Act, 63 O.S. 1981, Sec. 2-101, et seq., as amended.

5 Note: Under OSU regulations, no 3.2 beer or other alcoholic beverage is allowed in OSU housing, including fraternities and sororities, except for married student housing, no matter your age. Furthermore, under the same regulations, the possession/consumption of 3.2 beer or alcohol by those of legal age (over 21) is allowed only in certain designated, non-public places on the OSU campus, properties, and facilities.

6. Academic Rights and Responsibilities, Philosophy, and Purpose

As members of the academic community, students have both rights and responsibilities. The most essential student right is the right to competent instruction under conditions conducive to learning. The most important responsibilities are to respect the rights of other members of the academic community and to conform to standards essential to the purposes and processes of the University.

The University should endeavor to provide for students those privileges, opportunities, and protections which best promote the learning process in all its aspects. The following statement outlines those academic rights and responsibilities of students essential in helping the University community fulfill this responsibility. The principles found herein are designed to facilitate communication, foster academic integrity, and defend freedoms of inquiry, discussion, and expression among members of the University community. Such principles should safeguard and enhance conditions conducive to learning, and will serve as a guide for students, faculty, and administrators involved in programs of instruction and classroom activities. (NOTE: Nothing herein, however, shall create or be deemed to create, any claim or cause of action, in law or in equity, against the University or any to its agents or employees.)

I. Access to Academic Programs

As a comprehensive, land grant, public university, Oklahoma State University is committed to serving a wide spectrum of people. Access to the programs and services of the institution should be governed by the following principles:

Within the limitations of its facilities, resources, and personnel, the University should be open to all persons who are qualified according to admission standards.

Except where limited by duly constituted admission standards of professional and graduate programs of study, students who have been admitted to and are in good standing with the University should be allowed to enroll in any major (field of concentration) offered by any college within the University.

Within the limitations of facilities, resources, and personnel, University students should be allowed to enroll in courses for which stated prerequisites are met.

Students should not be refused access to any course of study on the grounds of their beliefs or the possible uses to which they may put the knowledge to be gained in a course.

Students are responsible for representing themselves truthfully and accurately at all times. Providing false or misleading information to gain admission to or advancement in a program or course of study violates this responsibility and may result in forfeiture of one's right of access to an academic program.

II. Student/Faculty Relations and Classroom Activities

The University should endeavor to provide a learning environment where honest academic conduct is fostered and where evenhanded treatment in all aspects of the teacher-student relationship exists. The following principles will facilitate such an environment:

Students should enjoy free inquiry and expression. They should be free to take reasoned exception to the data and views offered in a course and to reserve judgment about matters of opinion. However, students are still responsible for maintaining standards of academic performance and learning the content of any course of study for which they are enrolled.

Subject matter presented to students in a course of study should be generally consistent with the description, purposes, and scope announced for the course.

Students should be free from arbitrary, capricious, or discriminatory action by faculty and should have protection and proper recourse through orderly procedures against such action.

Evaluation of students and the award of credit should be based on academic performance professionally judged and not on matters irrelevant to that performance, whether personality, race, sex, religion, national origin, degree of political activism, or personal beliefs. Course grades given to students should reflect the standards of academic integrity and performance established by the faculty member and the University.

Students and faculty are expected to help maintain the quality and integrity of the educational process by conducting themselves in an honest and ethical manner. Any form of academic misconduct represents an erosion of academic standards and should not be tolerated by either the teacher or student. Knowledge of any dishonest act should be reported and dealt with through orderly procedures.

Students should maintain a sense of responsibility when planning degree programs and class schedules. It is their responsibility to become informed of degree requirements and to meet those requirements satisfactorily.

Students should enroll in courses with the intention of devoting the effort both inside and outside the classroom to complete all their requirements satisfactorily.

It is the responsibility of the student to conform to conduct conducive to learning by being prepared, prompt, attentive, and courteous in the classroom and by conforming to policies set by the teacher to maintain an academic decorum.

OKLAHOMA STATE UNIVERSITY
III. Certification of Spoken English Proficiency of Teaching Personnel

It is the policy of Oklahoma State University that all persons employed as members of the faculty, as teaching assistants or teaching associates, or for any other assignments involving oral instruction be proficient in spoken English.

Each college will develop standards and procedures to ensure that all instructional staff are proficient in the use of English as a spoken language. The standards will include as one means of demonstrating proficiency the achievement of a score of at least 220 on the Test of Spoken English (TSE).

Special standards and/or procedures may be developed for use in individual departments with the approval of the dean of the college. If any department chooses not to require of a prospective instructional staff member a score of 220 on the TSE, the department head shall submit a justification for this decision through the college dean to the Vice President for Academic Affairs and Research for approval.

Prior to assigning any person to teaching responsibilities (as defined above) for the first time at OSU, the department head will submit written certification to the dean of the college that the person has met the standards of the college and department.

An exception to college and departmental standards for appointment of a prospective instructional staff member may be granted upon written petition submitted by the department head through the college dean to the Vice President for Academic Affairs and Research.

Any student at Oklahoma State University may file a complaint regarding the English language ability of any instructional employee with the Office of the President. The President or his designee shall investigate the complaint and make such disposition as may be warranted. Students are encouraged to file such complaints initially with the head of the academic department in which the course is taught. All complaints of this nature received by academic department heads shall be investigated and dealt with as appropriate. The department head shall report to the office of the dean of the college the name of the person against whom the complaint was received; the name of the person making the complaint, the course number, section, and semester involved; and the nature and disposition of the complaint.

The academic deans shall submit reports at the end of each semester to the Vice President for Academic Affairs and Research summarizing the complaints received and the disposition of each complaint.

The Vice President for Academic Affairs and Research shall prepare an annual report for submission by the President to the State Regents for Higher Education.

IV. Course Information and Management

In order to help students plan and prepare for a program of study, they will have the opportunity to be informed of the expectations, administration, and policies of specific courses. To facilitate this, the following information should be available prior to enrollment in a course:

- Course description and type of presentation (lecture, lab, seminar, etc.)
- Notice of course costs (special charge, equipment, services, etc.)
- Name of instructor (when possible)

As early as possible each semester, in a manner appropriate to the course of instruction, persons enrolled in a course will be informed of its requirements and the instructor's policies on such matters as grading, attendance, examination, and assignments.

V. Academic Records

Current and former students, and parents of dependent students when appropriate, shall have the right to review educational records maintained about them by the institution, except for material to which the student has waived the right of access or for material specifically determined to be confidential by law.

Students will be protected through orderly procedures against improper disclosure of information concerning a student's academic records, ability, or character.

Transcripts of academic records will contain only information about academic status.

VI. Participation in Instructional Affairs

Students should have the opportunity, through an established institutional mechanism, to assess responsibly the value of a course to them and to make suggestions as to its direction. Students should also be able to express responsibly their views on the form and conduct of a class which they have taken.

Students should have an opportunity to communicate formally their views concerning the policies and decisions affecting the administration of academic affairs at the department, college, and university levels.

7. Academic Appeal of a Final Grade

a. It is the responsibility of the faculty members of Oklahoma State University to communicate to students early in the term a clear statement of the grading practices and procedures that will be used to determine the student's final grade. If a student believes those practices and procedures were not consistently and accurately followed when the faculty member determined the student's final grade, the student shall have the right to appeal the case to the Academic Appeals Board within four months after the grade was assigned, or six weeks after the student begins a new semester, whichever comes first, if informal discussions fail to resolve the issue.

b. In hearing a case, the Academic Appeals Board shall base its decision of changing or not changing the assigned grade solely upon whether the grade was assigned fairly within the grading system adopted by the faculty member. In all other instances, the case will be referred back to the departmental and college levels for resolution.

c. The Academic Appeals Board has the authority to instruct the Registrar to change a final course grade. (This is an excerpt of the official University policy. For detailed, official copy of this policy and the procedure governing grade appeals or for assistance with the filing of an appeal, contact the Office of the Vice President for Academic Affairs and Research, 101 Whitehurst Hall.)

8. Alleged Academic Dishonesty/ Misconduct

ACADEMIC DISHONESTY

Academic dishonesty is not condoned nor tolerated at Oklahoma State University.

Academic dishonesty is behavior in which a deliberately fraudulent misrepresentation is employed in an attempt to gain undeserved intellectual credit, either for oneself or for another. It includes, but is not necessarily limited to, the following types of cases:

Plagiarism. The representation of someone else's ideas as if they are one's own. Where the arguments, data, designs, etc., of someone else are being used in a paper, report, oral presentation, or similar academic project, this fact must be made explicitly clear by citing the appropriate references. The references must fully indicate the extent to which any parts of the project are not one's own work. (For instance, it would be plagiarism to credit someone else with the content of only one paragraph in a paper, when in fact one is borrowing two pages of the paper from this source.) And one must not suppose that only verbatim copying requires crediting. Paraphrasing of someone else's ideas is still using someone else's ideas and must be acknowledged.

Unauthorized Collaboration on Out-of-Class Projects. The representation of work as solely one's own, when in fact it is the result of a joint effort.

Cheating on in-Class Exams. The covert gathering of information from other students, the use of unauthorized notes, unauthorized aids, etc. It is the responsibility of the instructor to make clear what aids, if any, are authorized for use during an exam.

Unauthorized Advance Access to an Exam. The representation of materials prepared at leisure, as a result of unauthorized advance access (however obtained), as if it were prepared under the rigors of the exam setting. This misrepresentation is dishonest in itself even if there are no complicating factors, such as unauthorized use of books and notes.

(Note: Access to an exam given in a previous semester and routinely returned to a previous student is not unauthorized access. Nor is it unauthorized access for a student to discuss an exam taken by a student in an earlier section. It is the obligation of the instructor to insure that access of this sort does not become an unfair advantage for some students.)

Fraudulent Alterations of Academic Materials. Alterations of graded papers, research data, course withdrawal slips, falsifying and altering trial schedules or any other academic material in order to receive undeserved credit or advantage.

THE UNIVERSITY
Knowing Cooperation with Another Person in an Academically Dishonest Undertaking. Failure by a student to prevent misuse of his/her work by others. Care must be taken that exam answers are not seen by others, that term papers or projects are not plagiarized or otherwise misused by others, etc. Even passive cooperation in a dishonest enterprise is unacceptable. This must not, however, be understood to require that a student inform on another student. That is, a student must actively protect his/her own work, but he/she is not obliged to report cheating or attempted cheating to anyone.

The test in any case of suspected academic dishonesty is whether undeserved intellectual credit or advantage is being sought through deliberately fraudulent means.

Burden of Proof for Allegations of Academic Dishonesty

In the case of an academic dishonesty appeal, the burden of proof rests with the faculty member to demonstrate by clear and convincing evidence that the alleged act(s) of academic dishonesty have occurred. Clear and convincing evidence is a level of proof which may be said to be midway between preponderance of the evidence and beyond reasonable doubt.

Evidential Standards for Allegations of Academic Dishonesty

Experience of the Academic Appeals Board has indicated that the standard of proof required is that a mere assertion that a student has been involved in dishonesty.

In most circumstances, evidence supporting the faculty member’s assertion of academic dishonesty should be presented in the form of (1) documentary evidence or (2) corroborating testimony from other University faculty or staff, or both.

Only in instances in which no other supporting evidence is available should other students in a class be utilized as witnesses by a faculty member in support of an allegation of academic dishonesty. In no case should a faculty member base an allegation of academic dishonesty on an allegation by a student which is unsupported either by documentary evidence or observation of the allegedly dishonest conduct by a member of the University faculty or staff.

Because the student accused of academic dishonesty has the right to cross-examine the witnesses against him or her, written statements by persons not present at the Academic Appeals Board hearing normally will not be considered by the Board. In the event that a majority of the Board concludes that such written statements are necessary, the record of the case shall contain the reasons for the conclusion.

Examples of documentary evidence which have been found acceptable in past cases include examination papers with identical or highly similar answers, particularly when the answer on one or both examinations is incorrect, and when the faculty member can demonstrate that the papers were produced by students seated in close proximity to one another during an examination, written work submitted by the student in which plagiarism is charged when the faculty member can produce the original source(s) from which the work is alleged to have been taken; improper source materials such as notes taken from a student during the course of an examination for which no such notes were allowed; and text materials improperly in the possession of a student during the examination. In these situations, the documentary evidence should be retained by the faculty member. It of course strengthens the faculty member’s case to have another witness to the presence of improper materials during the examination, particularly if there is a dispute as to the presence of the materials.

Academic dishonesty requires intent to deceive. The fact that intent is a state of mind-rather than an externally observable phenomenon—does not present insurmountable evidential difficulties. A person’s actions in context can provide clear and convincing evidence of his/her guilty intentions, protestations of innocence notwithstanding.

The examples listed above in no way may be taken to be an exhaustive list of the types of documentary evidence which may be submitted to the Academic Appeals Board; rather they are provided by way of illustration.

Procedures in Cases of Academic Dishonesty

Instructor of Record. The instructor of record is the individual responsible for grade assignment. Other faculty members who are participating in a course (such as in team-taught courses) and/or teaching assistants are also expected to participate in an appropriate way in assessing any penalties for misconduct or dishonesty and in any appeal.

Instructor’s Procedure. In instances where the instructor of record has clear and convincing evidence that a student has engaged in dishonest academic behavior, the following procedures will be used:

1. The instructor of record shall discuss the situation as soon as possible with the student, explaining the allegation, the reasons for it, and the disciplinary action(s) being considered, and shall give the student the opportunity to respond to the allegation.
2. If after consultation with the student the instructor of record decides to initiate disciplinary action, he/she may do one or more of the following:
   a. Require the student to complete a substitute assignment or examination
   b. Award a grade of "zero" or "F" for the assignment or examination
   c. Award a reduced grade for the examination, assignment, or course
   d. Award a grade of "F" for the course
3. Recommend to the Office of Student Conduct that action be initiated for more stringent disciplinary action (e.g., conduct probation, suspension or expulsion) by the University.
4. If such a recommendation is made, the Unit Administrator involved will write a memorandum to the Registrar requesting that the student’s transcript/diploma be withheld until a decision can be made concerning the recommendation.
5. If any disciplinary action(s) is taken, the instructor of record must communicate in writing, within ten (10) working/school days, the actions taken and the reasons for them to the (1) student, (2) student’s advisor, (3) instructor of record’s department head, (4) student’s academic dean, and (5) Office of Student Conduct.

STUDENT APPEAL

A student alleged to have engaged in academic dishonesty shall have the right of due process and appeal as delineated herein, should he/she believe the instructor’s action was unfair. If the student decides to challenge any disciplinary actions not involving a recommendation of suspension or expulsion, he/she may file an appeal with the Academic Appeals Board within ten (10) working/school days of receiving the written notice of action taken by the instructor of record. No disciplinary action may carried out while a case is being appealed; nor may the student who has been accused of academic dishonesty withdraw from the course while the accusation is pending. If the student is absolved of alleged academic dishonesty, withdrawal from the course with no record appearing on the transcript is allowed. The student will use the following procedures in filing an appeal:

1. The student obtains and completes an appeal form. Appeal forms are available from the Office of the Vice President for Academic Affairs and Research. In completing an appeal form, the student must discuss the situation with (1) his/her advisor, (2) the instructor of record, (3) the instructor of record’s department head, and (4) the student’s academic dean or designated representative.
2. The completion of this form insures that appropriate parties have an opportunity to consider the allegation and appeal.

b. The student submits the appeal form to the Secretary of the Academic Appeals Board. The secretary, who can be contacted in the Office of the Vice President for Academic Affairs and Research, (1) gives the student notice of receipt of the appeal, (2) notifies the Office of Student Conduct that an appeal is being made, (3) assembles the verification documents, and (4) transmits the case to the Academic Appeals Board.

In cases of alleged academic dishonesty where the instructor of record has recommended that the student be suspended or expelled from the University, the Office of Student Conduct shall be responsible for implementing disciplinary action according to University Disciplinary Procedures. These procedures afford the student the right of due process and appeal; therefore, no action is required of the student to appeal the initial recommendation of suspension or expulsion made by the instructor of record. In such cases, the Office of Student Conduct shall immediately request that the Academic Appeals Board rule on the student’s guilt or innocence respecting the alleged instance of academic dishonesty. If the Academic Appeals Board finds that an instance of academic dishonesty has occurred, a decision about suspension or expulsion will be made by the Office of Student Conduct. The Academic Appeals Board will decide the appropriateness of any lesser penalty.

If either the student’s academic dean or the Office of Student Conduct, after reviewing the outcomes of the case, believes in light of previous dishonesty offenses that more stringent disciplinary action is warranted (i.e., conduct probation, suspension, or expulsion from the University), such action may be initiated through the University Disciplinary Procedures. When such additional disciplinary action is contemplated, the student will be afforded the right of due process and appeal.
When a student is officially notified of a charge of academic dishonesty with a recommendation for more stringent disciplinary action, and if the Unit Administrator involved agrees that the alleged offense merits such a measure, he/she will write a memorandum to the Registrar requesting that the student’s transcript/diploma be withheld until a decision can be made concerning that recommendation.

*University Disciplinary Procedures are available from the Office of Student Conduct, Student Union, Room 315

**ACADEMIC MISCONDUCT**

Academic misconduct is academically unacceptable behavior that is distinguished from academic dishonesty in that the intent to obtain "undeserved intellectual credit or advantage" by "fraudulent means" is missing. It includes, but is not necessarily limited to, the following types of cases:

- Failure to observe the rules governing the conduct of examinations through ignorance, carelessness, preoccupation, or psychological stress. (Specific examples: bringing study notes into a closed-book examination, but without the intent or act of consulting them during the examination; failure to stop when time is called at the end of an examination.)

- Failure to observe strict requirements for the proper identification and citation of sources and supporting ideas in reports and essays. (Specific example: inadvertently incomplete or erroneous attribution of ideas to bibliographically identifiable sources.)

- Excessive reliance upon and borrowing of the ideas and work of others in a group effort. (Specific example: uncritical acceptance of calculations—perhaps erroneous—in joint laboratory reports in which it is understood that the reports will be prepared jointly.)

- The factor distinguishing these and similar events from academic dishonesty is the lack of intent to obtain intellectual advantage by fraudulently violating specific rules and accepted academic standards. If after consultation with the student the instructor of record decides to take disciplinary action, he/she may do one or both of the following:

  1. Require the student to complete a substitute assignment or examination.
  2. Award a grade of "zero", "F" (or a reduced grade) for the assignment or examination.

- The student must be clearly notified of any penalty within ten working/school days of the discovery of the alleged act of misconduct. These penalties can be severe (a zero on an examination, for example) if the student has been properly instructed in the rules and warned of the consequences of violating them; such warning is of course the responsibility of the instructor and calls for care in the writing of the course syllabus.

**Burden of Proof and Procedures for Allegations of Academic Misconduct**

Grade reductions for reasons of academic misconduct make no allegations of moral shortcomings and require no further notification of University officials. Student appeals in such cases are to be seen as generally comparable to grade appeals. The burden of proof rests upon the student to establish his/her case. This may be done by showing that (1) the student was not clearly notified of the impermissibility of the behavior in question, (2) the penalty was inconsistently administered, or (3) the impermissible behavior did not occur. If the student wishes to argue the third alternative, he/she should be prepared to present corroborating evidence in support of the claim.

**Academic Appeals Board**

The Academic Appeals Board is authorized by the President of the University to review appeals of alleged academic misconduct or dishonesty, and to decide upon the appropriateness of all penalties except suspension or expulsion. These will be decided by the Office of Student Conduct. The Academic Appeals Board will (1) determine whether or not the parties involved acted within the prescribed policies and procedures for academic dishonesty or misconduct, (2) determine whether or not the allegations of academic dishonesty or misconduct are valid; and (3) decide whether or not the instructor's disciplinary action was appropriate.

The Academic Appeals Board has the final authority to sustain, reduce, or dismiss the disciplinary action (except suspension or expulsion) taken by the instructor of record.

The procedures for the Academic Appeals Board afford the student and the instructor of record their right of due process by providing them with:

- Written notification of the time and place of the hearing of the appeal;
- A copy of the appeal verification form;
- The right to appear in person and present their case. Either party may elect not to appear; in this instance, the hearing shall be held in his/her absence. Failure to appear must be noted without prejudice;
- The right to meet with the Board at the same time, so no further allegations can be made against the student without the student’s knowledge or against the instructor without the instructor’s knowledge;
- The right to be accompanied by an advisor, colleague, or friend;
- The right to call witnesses to assist in establishing facts of the case;
- The right to ask questions and refuse to answer questions;
- The right to an expeditious hearing of the case;
- The right to an explanation of the reasons for any decision rendered.

The decision of the Academic Appeals Board and its justification are communicated in writing within ten (10) working/school days to the (1) student, (2) instructor of record, (3) student’s advisor, (4) instructor of record’s department head, (5) student’s academic dean, and (6) Office of Student Conduct.

In the event that an academic dishonesty or misconduct appeal shall involve any current member of the Board as a party (either student or instructor), the ad hoc board shall be convened to hear the appeal.

- The ad hoc board shall be composed of three former chairs or co-chairs of the Academic Appeals Board, selected by the Vice President for Academic Affairs and Research, and one student selected by the Vice President for Academic Affairs and Research on the advice of the President of the Student Government Association (if the appeal involves an undergraduate student) or of the President of the Graduate Student Council (if the appeal involves a graduate student). One of the faculty members shall be designated as chair of the ad hoc board by the Vice President for Academic Affairs and Research.
- The ad hoc board shall hear the appeal as soon as is reasonably possible and shall adhere to all rules, regulations, and procedures applicable to the Academic Appeals Board which shall be in force at the time of the consideration of the appeal.

9. The Committee on Student Organizations

The Committee on Student Organizations, as a standing committee of the Student Government Association Senate, is composed of the Manager of Student Activities, as a non-voting permanent secretary; three administrative professional staff members appointed by the University President from a list recommended by the Vice President for Student Services, four faculty members appointed by the President from a list recommended by the Faculty Council; seven student senators chosen in a manner specified by the SGA bylaws; and one student appointed by the President from a list of non-senate members approved by the SGA Senate and submitted by the SGA President One of the student senators serves as chairperson of the committee. The period of service for the faculty, staff, and appointed student members is two years, with alternating dates of expiration.

It is the responsibility of the Committee on Student Organizations:

- a. To serve in an advisory capacity to the Manager of Student Activities for policy related to student organizations and their co-curricular activities.
- b. To recommend the issuance or denial of recognized or registered status for student organizations to the SGA Senate. The SGA Senate shall act upon the recommendations of the Committee on Student Organizations. The recommendations of the Committee on Student Organizations and notification of the action of the SGA Senate shall be forwarded to the President of the Student Union for final action.

1. Recognized groups are those which:

- A have a purpose which relates directly to the academic mission of the University as demonstrated through its affiliation with a college student council, departmental sponsorship, or is an organization recognizing scholarship or leadership; or
- B have been granted status by the University administration. These groups are associated student government associations; Interfraternity Council and its associated fraternities; Panhellenic Council and its associated sororities; Residence Halls Association and...
components thereof, the Off Campus Student Association; and the Student Union Activities Board.

2. Registered groups are those which are affiliated with the University only because their members are students, yet the purposes of these groups do not qualify them for recognized status, as cited in section 9.B.1.

c. To approve or deny constitutional revisions of student organizations.

d. To serve as the hearing panel for complaints concerning student groups’ adherence to standards and responsibilities and to administer appropriate sanctions against student groups when warranted (see Paragraph 13).

e. All decisions of the committee concerning registration or recognition of groups shall be made public.

10. Relationship to the University.

Recognition or registration of organizations does not mean that the University supports or adheres to the views held or positions taken by such groups. Responsibility for any action which violates federal, state, or local laws, or University regulations must be assumed by the individual groups and their individual officers and members.

11. Benefits Available to Student Organizations.

a. Subsequent to the initiation of action to seek formal status, a group of students desiring to form a student organization may schedule up to three organizational meetings.

b. Recognized groups may have:
   1. The opportunity to use the name of the University to show their academic affiliation;
   2. The opportunity to request the use of student fee allocations from the Student Activity Fee Committee.

c. Both recognized and registered groups may have:
   1. The opportunity to use University facilities, normally at no cost, for regularly scheduled business meetings in designated areas;
   2. The opportunity to have space in the Redskin;
   3. The opportunity to use the announcement service in the Daily O’Collegian;

4. The opportunity to use the unrestricted bulletin boards on campus;

5. The opportunity to be listed in the Student Handbook;

6. The opportunity to use the non-postage mail service for distribution of the materials that are related to the purpose and business of the organization.

12. Application Process and Requirements of Student Organizations

a. Student groups wishing to seek and maintain formal recognized or registered status must adhere to the following standards:
   1. A student organization seeking recognized status must be sponsored by one of the following: a college student council, a University department, the Student Government Association, Interfraternity Council, Panhellenic Council, Residence Halls Association, Off Campus Student Association, or the Student Union Activities Board.
   2. Membership is open only to students.
   3. Organizations especially for spouses of students, faculty, and staff may seek official University registration.
   4. Associate members: Some organizations may deem it advisable to have participation of individuals not included in the categories enumerated above. In such cases, an organization may establish an associate member status. Associate members may neither vote nor hold office in a student organization.
   5. Certain written information and documents must be filed in the office of the Manager of Student Activities;
   6. The proposed organization does not duplicate specific purpose existing organizations.
   7. There is indication of sufficient student interest as evidenced by a sufficient number of charter members.

b. There is no automatic guarantee that recognition or registration will be granted. Each organization will be evaluated on the merits of its presentation according to the following standards:
   1. The purpose of the organization is in accord with these policies and the established rules and regulations of Oklahoma State University.
   2. The organization is under the supervision and control of the officers and members of the organization as reflected by the constitution.

13. Change in Status.

The Committee on Student Organizations may, acting on its own initiative or at the request of interested University agencies, review and take disciplinary action against recognized or registered student groups. The reasons for these actions may include: failure of the group to maintain current records; failure to plan and implement a program of activities; failure to hold any meeting for a period of one year; failure to maintain an adequate system of financial accountability; failure to perform in compliance with its constitution and by-laws; violation of University standards, municipal, state, and federal laws; or other conduct prejudicial to the best interests of the University.

Prior to any disciplinary action which may adversely affect the recognized or registered status of a student group, the Committee on Student Organizations will normally inform the group of its concerns and may grant the organization an opportunity to take steps necessary to correct the situation. Any decision to discipline, or revoke the status of a recognized or registered group, shall be made only after an appropriate and fair hearing by the Committee on Student Organizations. Any disciplinary action will be reported to the Student Government Association Senate and to the Manager of Student Activities by the Secretary of the Committee on Student Organizations.

Any group which has been the subject of disciplinary action may appeal the decision to the SGA Supreme Court by filing a request with the Chief Justice within 10 working days.
following the action of the Committee on Student Organizations. The SGA Supreme Court may render a judgment regarding the adequacy of the due process received and/or the sanctions imposed. If the decision-making process is judged to be inadequate, the case will be remanded to the Committee on Student Organizations for a new hearing. The SGA Supreme Court has the authority to take the following actions based on the findings of the hearing: (1) sustain, (2) reduce, or (3) dismiss the disciplinary action taken by the Committee on Student Organizations. The action of the SGA Supreme Court will be reported to the SGA president and the Student Union Director. Any subsequent appeals will be processed through established administrative channels beginning with the Student Union Director.

Under extraordinary circumstances, the Vice President for Student Services or his/her designee is delegated the authority to act, within sound discretion, to protect the best interests of the University when normal procedures pertaining to student organizations are deemed by the Vice President, or designee to be incomplete or actions based thereon are considered inadequate. Normally, such action would involve temporary denial of any further activity as an organization, temporary suspension of the organization’s University privileges, or similar sanctions, until the situation which precipitated the action can be addressed by the Committee on Student Organizations through its hearing procedures.


Each organization must have an advisor who is a full-time member of either the University staff or faculty. This condition applies to registered as well as recognized organizations. Social fraternities and sororities may select their advisors from non-University individuals, if they so choose, but such individuals must be registered in the Office of the Coordinator for Greek Life. This registration would consist of name, address, and telephone number to the Coordinator’s office.

Other exceptions to this policy may be granted by the Manager of Student Activities with the concurrence of the Committee on Student Organizations. An organizational advisor should be available for:
1) Attending group meetings.
2) Assisting in program and/or project development.
3) Serving as a resource to the organization regarding University policy and regulations.
4) Advising the organization regarding financial matters.

15. Funds of Organizations.

a. Funds of recognized student organizations which are derived from the following sources must be kept on deposit with the University:
   1. Funds collected by the University on behalf of the organization;
   2. Funds allocated by the University to the organization;
   3. Mandated dues, fees or assessments which must be paid by all members of the organization;
   4. Funds raised through sales and solicitation.
   Each account, on campus or off campus, must be audited once a year by the Department of Internal Audits. Only incorporated social fraternities and sororities are exempted from the deposit requirements of this section, however, the University encourages these groups to maintain an adequate system of financial control.

b. Funds of recognized student organizations that are deposited with the University may not be used for the purchase of alcoholic beverages, including 3.2 beer.

c. No student organization may use mandatory dues, or assessments which must be paid by all members of the organization, for the purchase of alcoholic beverages, including 3.2 beer.

16. Organizational Reports.

Recognized and registered groups will file a report with Student Activities by October 1 of each year or at the change of officers, but no less than annually. These reports will include (1) name, address, and phone number of each officer; (2) overall grade point and number hours carried by each officer; (3) name of faculty advisor; and (4) time and place of regular meetings. Changes during the school year in officers and/or faculty advisor will be reported promptly.

Additionally, each recognized and registered organization is required to submit an end-of-the-year report to the Student Activities Center, detailing their program activities which were planned and implemented during the previous school year. The Committee on Student Organizations will review these reports and may consider elimination of any organizations which have not justified their existence by programs of activity for the previous year.

17. Ad Hoc Status.

The Manager of Student Activities may grant or deny ad hoc status to student groups. If granted, this status shall be for a limited period of time not to exceed six weeks. The decision of the Manager of Student Activities is subject to review by the Committee on Student Organizations.

18. Special Events.

Recognized or registered student organizations desiring to conduct special events, programs or activities of a general campus appeal, including entertainment programs, for which admission is charged, must seek the approval and coordination of the Program Advisory Board. The Board may grant approval for such events once it is satisfied that all of the following conditions are met:

a. The group must file (in writing) the proposals of the project, type of facilities needed, potential participants, tentative budget, source of funding, and name of group’s advisor.

b. The project must not duplicate the objectives or active plans of any other recognized or registered student organization with regard to time and place.

c. The project or event otherwise conforms to University policies on use of facilities.


The IFC and Panhellenic, with their staff advisor, will determine the need to expand the Greek system. When the need is established, those fraternities and sororities who are interested in colonizing at Oklahoma State University will be invited to submit proposals to the IFC or Panhellenic and their staff advisor. The appropriate council will review the applications and then make a recommendation to the Vice President for Student Services through the Director of the Student Union requesting that the selected national fraternity(s) or sorority(s) be allowed to colonize at Oklahoma State University.

20. Scheduling.

With the exception of regular business meetings, all activities of student organizations must be scheduled at least one week in advance in the Student Activities Center, and registered with the following related administrative office:

- Residence Hall Groups-
- Program Coordinator, Single Student Housing
- Fraternities and Sororities-
- Program Coordinator, Student Activities
- Other Student Organizations-
- Manager of Student Activities

The event scheduled first will have priority. In the event of scheduling conflicts, the Program Advisory Board will make a final decision.

Only student groups which are formally declared ad hoc, recognized, or registered by the University may schedule, sponsor, or hold activities utilizing University facilities, property, and buildings, and only if the following conditions are met:

a. The activity must be properly scheduled through the Manager of Student Activities or the appropriate administrative office.

b. All health, safety, fire and other regulations applicable to the facility being used for the activity will be observed.

c. When decorations are used, clearance must be obtained from a representative of the fire department. A copy of the fire regulations is available in the Student Activities Center.

d. During pre-finals week, no student or campus organization may hold meetings, banquets, receptions, or may sponsor or participate in any activity, program, or related function which requires student participation. (See Academic Policy statement on Pre-finals week, Section 23 of Rights and Responsibility Statement).

21. Activities Outside Payne County.

Activities held outside Payne County must be registered at least one week in advance. The advisor to the organization must be involved in the registration process. Exceptions to this policy can be approved only by the officials listed below:

- Residence Hall Groups-
- Program Coordinator, Single Student Housing
- Fraternities and Sororities-
- Program Coordinator, Student Activities
- Other Student Organizations-
- Manager of Student Activities
22. Use of Facilities and Grounds.
   a. Facilities-Student organizations are encouraged to use facilities in the Student Union. Room reservations may be made through the Student Union Scheduling Office; however, if space is not available, special interest and service organizations expecting to use other campus facilities should secure clearance through the Student Activities Center and see the following people for room reservations in their areas:
   - Classrooms-Classroom secretary in Registrar's Office
   - Gallagher Hall or Lewis Stadium-Director of Athletics
   - Bennett Memorial Chapel-Manager of Student Activities
   - Colvin Physical Education and Recreation Facilities-Assistant Director for Facilities
   - Seretean Center Concert Hall- Seretean Building Manager
   - Residence Halls-Residence Halls Program Coordinator

   Recognized and registered groups may schedule University facilities through the offices responsible for reservation of a facility. All groups will be expected to comply with the following statements:
   1. Facilities will be scheduled through the office responsible for scheduling the facility.
   2. The purpose of the activity is consistent with the stated purposes of the organization.
   3. The organization will comply with all University policies and regulations or those remaining up beyond the expiration date will be removed.

   b. Chaperones:
      - Be present during the scheduled hours of the activity
      - Make suggestions related to the hospitality, comfort, and entertainment of participants
      - Assist the student(s) in charge of the event regarding activities which may be contrary to University policies and regulations or state law.

23. Pre-Finals Week Statement
   a. Policy:
      1. Final examinations are scheduled at the end of each semester and are proceeded by finals week which shall begin seven (7) days prior to the first day of finals.
      2. During finals week, all normal class activities may continue, however, no assignment, test, or examination accounting for more than 5% of the course grade may be given; and no activity or field trip maybe scheduled that conflicts with another class, this excludes make-up and laboratory examinations, out-of-class assignments (or projects) made prior to finals week, and independent study courses.
      3. During finals week no student or campus organization may hold meetings, banquet, receptions, or may sponsor or participate in any activity, program, or related function which requires student participation.
   b. Procedure:
      a. Any deviation from the above policy must have prior approval of the Department Head, the Dean of the College, and the Vice President for Academic Affairs and Research.

   Events sponsored by recognized or registered student organizations, where alcoholic beverages (including 3.2 beer) are consumed, must be chaperoned. Events held at public establishments in the City of Stillwater are an exception to the above. For all other sponsored events, including those excluded above, the usefulness of chaperones is to be determined by the faculty-staff advisor to the organization and the student in charge of the event. If chaperones are present, the following guidelines are suggested:
   a. The name(s) of the chaperone(s) will be registered with the appropriate office at the time the event is registered.
   b. Chaperones should be mature, responsible individuals who could provide advice and suggestions to the sponsoring student leaders if needed or requested. The following categories are suggested as possible resources for identifying chaperones:
      1. Faculty or Staff
      2. Graduate Student
      3. Single Student Housing employees
      4. Chapter Hostesses in the Greek system
      5. Parents of students in the sponsoring organization
      6. Alumni of the sponsoring organization
   c. Chaperones are encouraged to:
      1. Be present during the scheduled hours of the activity
      2. Make suggestions related to the hospitality, comfort, and entertainment of participants
      3. Assist the student(s) in charge of the event regarding activities which may be contrary to University policies and regulations or state law.

25. Serenades.
   Arrangements for serenades must be cleared through the president and/or head resident in the living group to be serenaded.

26. Special Weeks.
   Student organizations and units of the University expecting to schedule "special weeks" during the year must contact the Program Advisory Board for clearance before setting the date for the week.

27. Loud Speakers.
   Loud speakers and electronic amplification devices may not be used out of doors on campus between 7 a.m. and 8 p.m. on weekdays, if such use is disruptive to classes or the classroom area.

   Gambling is prohibited on the campus or at any activity sponsored by a student organization. Raffles and lotteries are prohibited by Oklahoma statutes.

29. Posters and Displays.
   The posting of signs, handbills and flyers, and the placing of displays in buildings at Oklahoma State University will be limited to recognized and registered groups and official units of the University.

POSTING IN STUDENT UNION AND CLASSROOM BUILDINGS.
   a. Procedures. In order to obtain authorization for posting or displays, a representative of the sponsoring group or unit must bring all material to be posted to the Student Activities Center for an authorization permit. Upon completion of the permit, the representative will be permitted to stamp each poster with a stamp available in the Student Activities Center. Once this is done, the group's representative will be given a listing of approved posting areas in the Student Union and classroom buildings, or in designated display areas.
   b. Regulations.
      1. Posters and flyers must not exceed 400 square inches in size. Signs exceeding this limitation must receive special permission from the Manager of Student Activities.
      2. The name of the sponsoring group or unit must appear on each flyer, sign, and display. The organization name spelled out is preferred, but Greek letters, acronyms, and logos will be accepted if these clearly identify the sponsor. In case of symbols or initials which are not clear, the group will spell out the entire name of the group.
      3. No poster or display in a language other than English will be approved.
      4. Publicity encouraging the abuse of alcohol at events sponsored by registered or recognized student organizations is prohibited.
      5. Guidelines for advertising events at which alcoholic beverages are present are available in the Department of Student Activities.
      6. All posters are to be removed by the sponsoring group or unit following the advertised event. Signs without a registered stamp or those remaining up beyond the expiration date will be removed. Failure to remove signs or posting in unauthorized places may result in the individual or group being billed for the sign's removal.
      7. Signs are not to be posted on walls (interior or exterior), trees or shrubs, trash cans, elevators, etc. Only bulletin boards and wooden sign standards are approved for posting. Any signs posted in unapproved areas will be removed. Only one poster per event is permitted on each bulletin board or sign standard.
7. The painting of sidewalks, buildings, etc., is not permitted.

8. Lawn signs for campus elections will be stamped as registered in the same manner as those to be posted and must conform to the SGA Election Board posting rules. The Manager of Student Activities may approve lawn signs for special events of an all-campus interest on the day(s) of the event.

POSTING IN RESIDENCE HALLS.

Persons wishing to post in Residence Halls must make such arrangements through the Residence Hall Program Office (Student Union 440). The regulations (a. and b.) cited above are applicable for posting in the Residence Halls.

30. Definition of Fund Raising and Sales Solicitation.

For the purpose of this document, the terms "fund raising" and "solicitation of funds" will mean the solicitation of donations, the charging of admission, or the selling of products and services.

31. Solicitation on Campus.

All solicitation in university recognized housing must have primary approval of the Consumer Action Council, subject to final approval of the appropriate administrative heads (i.e., Residence Halls Program Coordinator, Fraternity Affairs Program Coordinator, Fraternity Affairs Women's Program Coordinator, Director of Student Activities, Manager of Student Housing, or Manager of Student Activities during intercessions and summer sessions).

No sales or solicitation may be conducted if such is in competition with products or services offered in the Student Union or in conflict with the covenants of the University bond requirements. Bond indentures or buildings financed with self-liquidating bonds pledge all revenues collected in the buildings to be deposited with the official depository or accounted for by the University administration; therefore, close supervision of sales must be maintained. Normally, solicitation can be divided into the following categories:

a. Student Organizations. Solicitation by recognized student organizations will follow these steps:

1. Secure permission from the Student Activities Center.

2. Secure permission from the head of the department affected by the sale.

3. Sales solicitation to more than one campus group or residence must have the approval of all student groups and department heads which are affected by the sale. Charges for rental of space to the sales solicitor will be $10 per table per day or 10 percent of the gross sales, whichever is greater.

b. Private Enterprise. No private enterprise will be permitted to solicit business on University grounds, in academic buildings, or in University Physical Plant service facilities.

Special permission is granted to newspaper distributors, laundry, and cleaners to sell and deliver through student agents to the residents of residence halls. Door-to-door sales to students' rooms are not permitted; however, deliveries may be made to rooms. Sales should be made from tables in public spaces or in assigned areas of first floor or basement levels. A charge of 10 percent of the gross sales is to be the accepted rental fee. However, newspapers sold through wire racks or by annual subscription will not be charged a rental fee.

32. Charitable Fund Drives on Campus.

Solicitation of funds for charitable purposes wherein such solicitation involves the personnel of one college, one department, or one residence group, must be cleared in advance by the college dean, the department head, or the program coordinator. Solicitation involving broader segments of the student body must be cleared with the Manager of Student Activities.

33. Distribution of Literature.

Distribution of handbills, pamphlets, etc., is a privilege granted only to students of recognized and registered organizations. All such literature must bear the name of the organization or responsible individual on the front page of the material distributed. Such material may be distributed only in those areas designated as distribution areas by the Student Activities Center. A copy of the literature to be distributed must be filed with the manager of Student Activities.

a. The privilege of distribution which is accorded to any free student publication shall be equally accorded to all free student publications.

b. For buildings other than organized living units, the Manager of Student Activities shall determine, after consultation with the administrative occupants, the places of distribution.

c. Residents of each living unit shall decide for themselves whether (and if so, where) they want such a place of distribution in the building for publications either free or for sale.

d. The establishment of self-service stands for the sale of student publications shall be permitted in the lobby of the Student Union without charge to the sponsoring department, agency, or group subject to scheduling procedures.

e. Free distribution and sale by students of student publications shall be permitted on the campus outside the confines of campus buildings subject only to such limitations as deemed necessary by the Manager of Student Activities to prevent interference with the use of streets, sidewalks, and building entrances and as are consistent with the guidelines established herein.

f. The Student Activities Center shall keep available an up-to-date list of places of distribution within campus buildings.

34. Housing.

Oklahoma State University officials reserve the right to assign men and women students to rooms in the residence halls in preference to other living quarters. The following guidelines are current university procedures and are subject to change as conditions warrant.

35. Where Undergraduate Unmarried Students May Live.

All unmarried freshmen under the age of 21 are required to live in University housing. All other students may live in places of their choice. A student is classified as a freshman until he/she has successfully completed 28 semester hours. The following exceptions may be made:

a. Freshman students may live with their parents or legal guardian and commute from home.

b. Freshman students who are pledges or members may live in their respective fraternity or sorority houses. (Contractual approval must be obtained through the offices of Single Student Housing and Student Program Coordinator for Fraternities and Sororities.) Freshman students depleting a fraternity or sorority are required to return to University housing until such time as they have successfully completed 28 semester hours.

c. Freshman students carrying eight hours (three hours in the summer session) or fewer, may, with the approval of their parents and the office of Single Student Housing, live in places of their choice.

d. Freshman students may, in unusual or hardship cases, with the approval of their parents and the office of Single Student Housing, live in places of their choice.

e. Veterans (students who have been in the U.S. Armed Forces whose form DD214 indicates at least 180 days of active duty.)

36. Closing Hours for University Housing.

a. Residence halls will close week nights (Sunday through Thursday) at 12 midnight with the exception of one (1) main entrance.

b. Residence halls will close weekend nights (Friday and Saturday) at 2 a.m. with the exception of one (1) main entrance.

c. All residence halls are on self-limiting hours and may return to the residence hall at the time of their choosing.

d. Overnight Guests. Students may have same sex overnight guests on Friday and Saturday nights. Special permission from the Head Resident must be obtained for all guests.

e. Guests must observe the same hours and rules as their host or hostess.

37. Off-Campus Housing.

The University does not approve or disapprove off-campus housing, recognizing that the selection of off-campus housing is a decision to be made by the student. Students living in off-campus housing are subject to the Code of Student Conduct.

38. Married Students and Graduate Students.

Married students and graduate students may use their own judgment in selecting housing. The University has apartments available for married students and single graduate students may live in residence halls.
39. Rooming at a Fraternity House.
Only regularly enrolled University students who are members or pledges of the chapter shall room or board in a men’s or women’s fraternity house.

40. Fraternity Hostesses.
Each men’s and women’s social fraternity which operates a house is required to have a resident supervisor who shall live in the house. Such hostess or married couple is to be employed by the chapter with the approval of the respective Program Coordinator of Fraternity Affairs.

41. Document Revision.
This document may be revised and amended according to the following procedure:
a. Revisions and amendments may be proposed in the following ways:
1. Revisions and amendments may be submitted to the Student Senate. The Student Senate may propose revisions and amendments to the Vice President for Student Services.
2. Revisions and amendments may be proposed by living-unit governments to the Vice President for Student Services.
3. The Student Affairs Committee of the Faculty Council may propose revisions and amendments to the Faculty Council. Following action by the Faculty Council, these revisions and amendments will be forwarded to the Vice President for Student Services.
4. The Manager of Student Activities shall have authority to propose revisions and amendments to the Program Advisory Board for their review and recommendation. The Program Advisory Board may initiate revisions and amendments to be submitted to the Vice President for Student Services.
b. All proposed revisions and amendments, together with the recommendations from Student Government Association and/or Faculty Council shall be sent by the Vice President for Student Services to the President of Oklahoma State University.
c. All decisions by the President and/or the Board of Regents regarding a proposed revision or amendment shall be communicated to the body that proposed it; if a proposed revision or amendment is rejected, an explanation shall also be sent to the body that proposed it.

42. Other.
a. Local Mailing Address. All students are responsible for keeping the University informed of their current local mailing address. If a residence has not been established at the time of enrollment or if the student changes addresses during the semester, a change of address form must be completed in the Registrar’s Office.
b. Official Announcements. Official announcements are published in the Official Bulletins section of the Daily Oklahoma Collegian. Students are held responsible for regularly checking this section.
c. Use of Tobacco in Academic Facilities. The use of tobacco (including smokeless tobacco) is prohibited in all Oklahoma State University academic buildings except in individual offices and research laboratories. Smoking in conference rooms may be permitted only by majority vote of the assembled group. (Excluded from this policy are the Student Union except already designated no-smoking areas, Gallagher Hall except already designated no-smoking areas, Lewis Field, Reynolds Stadium, Physical Plant buildings, residence halls, and other non-academic facilities.)

POLICY STATEMENT GOVERNING THE EXTRACURRICULAR USE OF UNIVERSITY FACILITIES, AREA OF MEDIA FOR THE PURPOSE OF EXPRESSION

I. Philosophy and Scope
a. Philosophy
A goal of the faculty, students, administration, staff, and Board of Regents, is for Oklahoma State University to be a superior educational center for the preservation, transmission, and discovery of knowledge. The wide variety of extracurricular activities at Oklahoma State University represent one way this goal is achieved. Therefore, these activities are an integral part of the total educational mission of the University.

In fulfilling this mission, the University must recognize and protect free inquiry and free expression as indispensable components of the critical examination of philosophies and ideas. Given the unique mission of educational institutions in a democratic society, this inquiry should be more open and vigorous, and should consequently have greater protection than in society at large, provided that such inquiry does not infringe upon the rights of others. Commitment to free inquiry and expression creates a strong presumption against prohibition of expression based upon its content. This philosophy is intended to apply to all forms of expression occurring at the University and any uncertainty regarding the application or operation of this policy statement shall be resolved in a manner consistent with this philosophy.
b. Scope
1. This policy statement shall be applicable only to the extracurricular use of any University-controlled facility, area, or medium used as a form generally open to members of the university community and others for the purpose of expression.
2. Any University policy providing for conditions or limitations on extracurricular expression shall be consistent with the Principles and Standards stated in Section II.
3. The Procedural Standards in Section III apply only to scheduling the extracurricular use of University-controlled facilities or areas for the purpose of expression.
4. Any question regarding the applicability of this policy statement shall be resolved by the Campus Review Committee following consultation with University Legal Counsel, and its decision in this regard shall be final.

II. Principles and Standards
a. In General
1. The freedoms of expression and assembly as guaranteed by the first and fourteenth amendments of the United States Constitution shall be enjoyed by all members of the academic community. Free discussion of subjects of either controversial or noncontroversial nature, even when they are considered to be offensive or in poor taste, shall not be curtailed.
2. Although our Constitution establishes a sweeping commitment to these freedoms, it is well-recognized that there is no absolute right to assemble, or to receive or present expression. As described below, permissible limitations include only those based on reasonable time, place or manner requirements and, in extremely rare circumstances, those based on content.
3. The fact that certain content-based limitations on expression have been established as legally permissible does not create an obligation or responsibility on the University or any of its officials or employees to exercise any form of limitation or control of expression. Rather, because of its educational mission, it is the responsibility of the University and its officials to actively encourage free and open inquiry by avoiding and resisting limitations of expression.
b. Tune, Place or Manner Considerations
1. Expression may be limited or restricted with respect to time, place or manner only as provided for in this policy statement and other related statements of policy such as the Statement of Student Rights and Responsibilities. Such limitations shall be narrowly tailored to serve a significant interest (such as avoiding disruption of regular classes, avoiding the scheduling of two events at the same time in the same facility, and the protection of the public order) and to assure compliance with applicable local, state and federal laws. Any limitations must be both reasonable and content-neutral, the latter term meaning that they shall be applied without regard to the content of the expression or the purpose of the assembly.
2. Limitations may include requiring (a) scheduling and planning with the appropriate authorized designee, (b) restricting or prohibiting the use of certain areas, (c) limiting certain forms of expression in specific areas, and (d) reimbursing the University any costs associated with the use of a facility, area, or medium.
c. Content Considerations
1. The First Amendment of the Constitution protects and guarantees freedom of speech by prohibiting any law which would serve to deny or limit expression. Through the Fourteenth Amendment, this prohibition is extended to all actions of state government, including those of publicly-supported universities. Accordingly, expression may not be denied or limited, based upon content, unless it is determined in a state or federal court proceeding that such speech or expression is not protected by the Constitution.
2. Denials or limitations of expression based upon content are not required by the Constitution or any law. Indeed, such content-based regulation is presumed to be constitutionally invalid by the United States.
The request should be made as far in advance as possible to provide for adequate review and orderly scheduling of facilities or areas. The amount of time required for review of a request will vary depending on the nature of the request. Barring extraordinary circumstances (e.g. extensive safety and security arrangements, or review by the Campus Review Committee, and/or a court), review should normally be completed within a few hours or days. If the authorized designee determines that additional time is required for review, he/she should ask the requestor to specify the latest date by which a final response is necessary. This date is important so that the total review and decision process may be completed in sufficient time to allow the requestor to make final arrangements for the proposed expression in the event the request is granted.

3. As promptly as possible, but not later than six working days from the receipt of a request, the authorized designee must take one of the following actions:

A. Grant the request. This will be the routine action taken on the vast majority of requests. The authorized designee should work with the requestor in preparing or revising a request so that it may be granted. If the authorized designee has any questions about whether to grant the request, he/she should consult with his/her administrative supervisor(s) and the Manager of Student Activities. When a request has been granted, such action shall be final and the requestor shall be promptly notified.

B. Ask the Manager of Student Activities for a specific additional period of time to continue review of the request. An extension of time will be granted only if it is warranted and will permit a final response on the request to be reached in time to allow the requestor to carry out final arrangements for the proposed expression in the event the request is granted. The authorized designee shall promptly notify the requestor that a request for an additional period of time has been submitted. The Manager of Student Activities shall promptly notify the requestor and the authorized designee of his/her decision.

C. Deny the request because it was not submitted in a timely manner. The authorized designee should take this action only if he/she can document that the time between the filing of the request and the date by which a final response is necessary is so short that adequate review and action cannot be reasonably completed by the University [See Section III(B)].

D. Deny or limit the request based on time, place or manner considerations [See Section III(B)].

E. Recommend that the request be denied or limited based on content considerations [See Section III(C)].

If the authorized designee fails to take one of the above actions within six working days of submission of the request, the request shall be deemed granted.

IV. Procedural Standards for Scheduling University Areas or Facilities for Extracurricular Expression

2. Upon receipt of the recommendation of the chairperson of the Campus Review Committee, the University President shall take one of the following actions:

A. Disapprove the recommendation of the authorized designee and direct him/her to grant the request; or

B. Approve the recommendation of the authorized designee and initiate a proceeding in state or federal court to determine the validity of the recommended denial or limitation.

The University President shall also inform the authorized designee, the chairperson of the Campus Review Committee, and the requestor of his/her action within this same period of time. If the University President approves the recommendation, but fails to initiate a court proceeding within the three day period, the request shall be deemed granted.

4. If the court determines that the recommended denial or limitation would not be valid, then the request shall be granted. Alternatively, a determination that the recommendation is valid shall result in the request being denied or limited.
d. Disclaimers

At a meeting or event where the expression is to occur the user shall publicly make or post a statement to the effect that the views or opinions stated within the context of the expression do not necessarily reflect the views of the Board of Regents, the University, its administration, staff, faculty, student body, or any individual member of these constituencies. Alternatively, such a statement may be included in advertisements for the meeting or event.

c. Outside Organizations or Individuals

Organizations or individuals not affiliated or connected with the University shall contact the authorized designee for the purpose of requesting the use of any University facility or area. Such requests shall be governed by this policy and other relevant regulations.

IV. Definitions

a. Authorized Designee

The person or persons who have the authority to schedule the use of a particular campus facility or area.

b. Expression

Any communication, discussion, acquisition, manifestation, representation or indication, whether clear or unclear, ambiguous or unambiguous, of attitudes, information, ideals, beliefs, opinions or ideas on any subject by any student, faculty or other member of the academic community, outside speaker or act, process or instance of representation in any media. The media of expression may include but shall not be limited to speech, publications, literature or documents, art, cinema, theater or music, electronic emissions, audio or visual recording in any medium or media, or recordings in any medium or media that combine audible, visible or other sensory expression, whether expressed, transmitted, presented or sponsored individually or by a group.

c. Campus Review Committee

1. Composition: The committee shall be composed of two (2) faculty members, two (2) staff members, and three (3) students. The two (2) faculty members shall be appointed by the Chair of the Faculty Council who shall also designate one of them as chairperson. One staff member shall be appointed by the Chair of the Staff Advisory council and the other by the University President. Each faculty and staff member shall serve for a two-year period. The three student members shall be appointed by the President of the Student Government Association, and they shall serve for a one year period. Those responsible for appointing members shall appoint interim replacements to temporarily serve in the absence of regular members. Four members of the Committee shall constitute a quorum, provided at least one faculty member, one staff member, and one student is part of such quorum. Only those motions which pass with a majority vote shall be considered approved by the committee. Motions which fail to pass or on which there is a tie vote, shall be considered disapproved by the Committee. The chairperson shall have the responsibility of arranging for and conducting all proceedings. A list of current membership and the designated chairperson shall be maintained by the University President. When appropriate, the Committee shall be provided administrative assistance and the services of the University's Legal Counsel.

2. Duties: The Committee shall convene and conduct hearings in accordance with the Procedural Standards stated in Section III. In the conduct of such hearings, the Committee shall have access to any information relevant to the issue involved and shall permit the parties to provide related additional information and oral testimony.

The Committee shall also be responsible for resolving issues concerning the applicability of this policy and to recommend changes in other policies and procedures to bring them into compliance with the Principles and Standards stated in Section II.

d. Extracurricular

All activities outside the University’s instruction, research, extension and related academic functions.

e. Unprotected Speech

The following are currently recognized by the United States Supreme Court as categories of speech or expression which are unprotected and can be barred or limited:

1. Clear and Present Danger-Preparing a group for imminent lawless action, and steering it to such action, as opposed to the abstract teaching of the moral propriety or even moral necessity for a resort to force and violence; AND there must not only be advocacy to action, but also a reasonable apprehension of imminent danger to the essential functions and purposes of the University. Such imminent lawless action shall include the following:

i. The violent overthrow of the government of the United States, the State of Oklahoma, or any political subdivision thereof;

ii. The willful damage or destruction, or seizure and subversion, of the institution's buildings or other property;

iii. The forcible disruption of, or interference with, the institution's regularly scheduled classes or other educational functions;

iv. The physical harm, coercion, intimidation, or other invasion of the person, property, or students; or

v. Other campus disorder of violent nature.

2. "Fight Words" - Words which by their very utterance inflict injury or are likely to incite an immediate breach of the peace. Personally abusive words that, when spoken to ordinary persons, are inherently likely to incite immediate physical retaliation.

3. Obscenity - A description or depiction of sexual conduct that, taken as a whole, by the average person, applying contemporary community standards:

i. appeals to the prurient interest;

ii. portrays sex in a clearly offensive way; and

iii. using a reasonable person standard rather than the contemporary community standard, does not have serious literary, artistic, political or scientific value.

V. Enabling Clause

This policy shall become effective upon approval by the Board of Regents for the Oklahoma Agricultural and Mechanical Colleges, and insofar as Oklahoma State University is concerned, supersedes the speaker's policy adopted by the Board on December 12, 1970. In accordance with Article I of the Rules and Regulations of the Board adopted on October 13, 1967, the University President has full authority to administer the provisions of this policy statement.

VI. Endnotes

1 For a definition of "extracurricular" and other terms in this policy statement see Section N.

2 Pursuant to this particular statement, and based on prevailing law, existing circumstances and current manner of operation. The Daily O'Collegian, KOSU, and cable Channel 30 are not presently subject to this policy statement.

3 For a definition of "unprotected speech" and other terms used in this document see Section N.

4 For the purpose of calculating the expiration of time deadlines specified in this policy statement, weekends, official University holidays, and the day that a request, recommendation, or report is received are not counted. For example, if a request is received on Monday, the authorized designee must take one of the specified actions no later than Tuesday of the following week in order to meet the six day deadline.

5 The "community" shall be comprised of the faculty, staff and students of Oklahoma State University.

VII. Off-Campus Organizations

Organizations not connected with Oklahoma State University, but which propose to use any facility of the University, will make their initial contact with the University Coordinator of Conferences in the Student Union Building. Groups not sponsored by University departments or personnel, and groups not previously convened on the University campus must have approval of the President's Office (through the Coordinator of Conferences and the Auditorium Usage and Maintenance Committee where applicable).

Any off-campus group approaching the Coordinator of Conferences must realize that time is needed for a decision. An immediate answer to a request will not be the rule. Scheduling must be compatible with the University Master Calendar.

Off-campus organizations granted use of University space, other than in the Student Union, will normally not be allowed to charge an admission fee. However, in case an admission charge is approved, the off-campus group will reimburse the University for staff assistance, electricity, use of facilities, etc.
Sexual Harassment Policy

(This policy is designed to apply only to employment and/or academic relationships among faculty, staff, and students.) It is the policy of Oklahoma State University (OSU) that sexual harassment of faculty and staff is prohibited in the workplace and in the recruitment, appointment, and advancement of employees; sexual harassment of students is prohibited in and out of the classroom and in the evaluation of student’s academic performance. It is also the policy of the University that accusations of sexual harassment which are made without good cause shall not be condoned. It should be remembered that accusations of sexual harassment are indeed grievous and can have serious and far-reaching effects upon the careers and lives of individuals. This policy is equally applicable to faculty, staff, and students. This policy is in keeping with the spirit and intent of various federal guidelines which address the issue of fair employment practices, ethical standards and enforcement procedures.

Grievance procedures consistent with the principles of due process have been developed and implemented for faculty, students, and staff; the latter includes both Administrative and Professional employees and Classified staff. (Complaints and grievances concerning sex discrimination will be reviewed under the appropriate grievance procedures for the accuser. Complaints and grievances concerning sexual harassment are handled in a separate manner.) Grievance procedures are available for students in the Office of the Vice President for Student Services, Student Activity Center, and the Director of Student Services in the respective colleges. The grievance procedures for faculty are included in the Faculty Handbook. Grievance procedures for staff can be obtained in the Office of Academic Affairs or in the Office of University Personnel Services.

POLICY GUIDELINES

a. Definition

The Equal Employment Opportunity Commission’s Guidelines on Discrimination Because of Sex (See Appendix A) define sexual harassment as follows (for the purpose of this policy definition, academic situations are incorporated). Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when

1. submission to such conduct is made either explicitly or implicitly a term or condition of an individual’s employment or academic standing;
2. submission to, or rejection of, such conduct by an individual is used as the basis for employment decisions or academic decisions affecting that individual’s, or
3. such conduct has the purpose or effect of unreasonably interfering with an individual’s work or academic performance or creating an intimidating, hostile, or offensive working/academic environment.

b. Regulations

1. It shall be a violation of University policy for faculty, staff and/or students to engage in sexual harassment as defined in Section a.
2. It is a violation of University policy for anyone to seek gain, advancement, improved academic standing or consideration in return for sexual favors.
3. Any allegation of sexual harassment which is made without good cause is a violation of University policy.
4. It is a violation of University policy for faculty, staff and/or students to initiate any action as a reprisal against a faculty or staff member or student for reporting sexual harassment.
5. Whenever there is a demonstrated instance of sexual harassment, or reprisal for reporting same, prompt and corrective action shall be taken. Failure to take appropriate actions is against University policy.

Procedures

a. Persons who have a complaint alleging sexual harassment should state their complaint through normal administrative channels. Individual administrators empowered to receive complaints shall include department heads, academic deans, directors or administrative supervisors of an operational unit.

b. This policy will be published in the student and faculty handbooks, the student rights and responsibilities document, and the OSU Policy and Procedures Letters.

2. This policy will be administered through Appendix D of the Faculty Handbook and the grievance procedures for staff and students respectively.

Appendix A

Equal Employment Opportunity Commission

29 CFR Part 1604

DISCRIMINATION BECAUSE OF SEX. UNDER TITLE VII OF THE CIVIL RIGHTS ACT OF 1964, AS AMENDED: ADOPTION OF FINAL INTERPRETIVE GUIDELINES

AGENCY: Equal Employment Opportunity Commission

ACTION: Final Amendment to Guidelines on Discrimination Because of Sex

SUMMARY: On April 11, 1980, the Equal Employment Opportunity Commission published the Interim Guidelines on sexual harassment as an amendment to the Guidelines on Discrimination Because of Sex, 29 CFR part 1604.11, 45 FR 25024. This amendment will re-affirm that sexual harassment is an unlawful employment practice. The EEOC received public comments for 60 days subsequent to the date of publication of the Interim Guidelines. As a result of the comments and the analysis of them, these Final Guidelines were drafted.

EFFECTIVE DATE: November 10, 1980.

FOR FURTHER INFORMATION CONTACT: Karen Danart, Acting Director, Office of Policy Implementation, Equal Employment Opportunity Commission, 2401 E Street, NW, Washington, D.C. 20506, (202) 634-7060. (Supplementary information concerning comments received on the interim guidelines, and relevant case law is omitted.)

Accordingly, 29 CFR Chapter XIV, Part 1604 is amended by adding 1604.11 to read as follows:

PART 1604-Guidelines on Discriminations Because of Sex

1604.11 Sexual Harassment

a. Harassment on the basis of sex is a violation of Sec. 703 of Title VII. (The principles involved here continue to apply to race, color, religion, or other origin.) Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual’s employment, (2) submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual, or (3) such conduct has the purpose or effect of unreasonably interfering with an individual’s work performance or creating an intimidating, hostile, or offensive working environment.

b. In determining whether alleged conduct constitutes sexual harassment, the Commission will look at the record as a whole and at the totality of the circumstances, such as the nature of the sexual advances and the context in which the alleged incidents occurred. The determination of the legality of a particular action will be made from the facts, on a case by case basis.

c. Applying general Title VII principles, an employer, employment agency, joint apprenticeship committee or labor organization (hereinafter collectively referred to as "employer") is responsible for its acts and those of its agents and supervisory employees with respect to sexual harassment regardless of whether the specific acts complained of were authorized or even forbidden by the employer and regardless of whether the employer knew or should have known of their occurrence. The Commission will examine the circumstances of the particular employment relationship and the job functions performed by the individual in determining whether an individual acts in either a supervisory or agency capacity.

d. With respect to conduct between fellow employees, an employer is responsible for acts of sexual harassment in the workplace where the employer (or its agents or supervisory employees) knows or should have known of the conduct, unless it can show that it took immediate and appropriate corrective action.

e. An employer may also be responsible for the acts of non-employees, with respect to sexual harassment of employees in the workplace, where the employer (or its agents or supervisory employees) knows or should have known of the conduct and fails to take immediate and appropriate corrective action. In reviewing these cases the Commission will consider the extent of the employer’s control and any other legal responsibility which the employer may have with respect to the conduct of such non-employees.

f. Prevention is the best tool for the elimination of sexual harassment An employer should take all steps necessary to prevent sexual harassment from occurring, such as affirmatively raising the subject, expressing strong disapproval, developing appropriate sanctions, informing employees of their right to
raise and how to raise the issue of harassment under Title VII, and developing methods to sensitize all concerned.

g. Other related practices: Where employment opportunities or benefits are granted because of an individual’s submission to the employer’s sexual advances or requests for sexual favors, the employer may be held liable for unlawful sex discrimination against other persons who were qualified for but denied that employment opportunity or benefit.

(Title VII, Pub. L. 88-352, 78 Stat. 253 (42 U.S.C.2000e et sez.)) (FR Doc. 80-34981 Filed 11-7-80, 8:45 a.m.)

Federal Register/Vol. 45, No. 219/ Monday, November 10, 1980/Rules and Regulations 74667r-74677

As required by the Family Rights and Privacy Act of 1974-Buckley Amendment, Oklahoma State University is hereby acquainting students with their privacy rights.

Students of Oklahoma State University have the right to:

1. Inspect and review information contained in their educational records.
2. Challenge the contents of their educational records.
3. A hearing if the outcome of their challenge is unsatisfactory.
4. Submit an explanatory statement for the record.
5. Prevent disclosure, with certain exception, of personally identifiable information from their educational records.
6. Secure a copy of the institutional policy, which includes the location of all educational records.
7. File complaints with the Department of Health, Education and Welfare concerning alleged failures of OSU to comply with the Act.
8. File with the Registrar’s Office during the first two weeks of the Fall Semester, written requests not to release directory information pertaining to them. Directory information will be released by the Registrar until receipt from the student asking that the information not be released. Information that Oklahoma State University has declared to be directory information:
   a. Student’s name, local and permanent addresses
   b. Telephone number
c. Date and place of birth
d. Major field of study
e. Weight and height of students participating in officially recognized sports
f. Dates of attendance at OSU
g. Degrees and awards granted
h. Academic classification as freshman, sophomore, junior, senior, etc.
i. Sex
j. Class schedule
k. Educational institutions previously attended
l. Degree(s) held, dates granted, and institution(s) granting such degree(s)
m. Dissertation or thesis title
n. Advisor and/or thesis advisor
o. Participation in officially recognized organizations, activities and sports
p. Parent’s name and address

The following have been designated as the offices where educational records are maintained and where information may be released:
The Registrar-for academic records and directory information;
Office of Student Conduct for disciplinary records.
The appropriate Placement Office-for records pertaining to securing employment

Equal Opportunity Policy
Oklahoma State University, in compliance with Title VI of the Civil Rights Acts of 1964 and Title IX of the Educational Amendments of 1974 (Higher Education Act), does not discriminate on the basis of race, ethnicity, religion, national origin or sex in any of its policies, practices, or procedures. These equal opportunity provisions include but are not limited to admissions, employment, financial aid, and student services.

Residence Halls
OSU Residence Halls offer a variety of living accommodations: apartments in Bennett, traditional non-air-conditioned space in Bennett and Stout, and contemporary air-conditioned space in Kerr-Drummond, Wentz and Willham North and South. Iba Graduate House provides year-round housing for graduate and undergraduate students who are 21 years of age or older. (Other students who need continuous housing should request Iba.) Stout and Wentz halls are available for students of sophomore standing and above.

The Office of Residential life emphasizes the development of interpersonal skills by having the staff teach leadership skills, group development skills, personal interaction skills, and study skills in non-credit seminars and credit classes. These programs are the formal aspect of helping students become involved in the residence halls. Residence halls and dining centers offer numerous opportunities for student leadership. More than 1,000 students are involved in planning and leading educational, recreational and social activities within the residence halls.

Residence hall living is relatively inexpensive. Over $1,400 per year is saved by the average student living in residence halls versus living off campus. Residence hall rates include all utilities including telephone (cable TV in some halls.) The 20-meal plan costs approximately $2.00 per meal. The in-hall laundry facilities are convenient and economical as is the on-campus parking. Residence hall rates rarely increase during the academic year.

Students are offered several lifestyle options from which to choose, such as floors and houses for fine arts, foreign languages, honors, intensive study, engineering, and wellness.

In every residence hall there is a well-trained professional staff to coordinate the day-to-day operations of the building, as well as the student staff whose primary function is to see that students benefit educationally from their residence hall living experience. Each floor or wing has a live-in student staff member (resident assistant) responsible for advising and guiding the residents. Resident assistants are undergraduate students specially trained in all aspects of residence hall living with the experience and knowledge to answer questions and act as an adviser for student government and programs.

Students who live on campus enjoy the opportunity to participate in the on-campus meal plan. Students may...
choose from five to 20 meals per week. (freshmen are required to take at least 10 meals per week) depending on their individual needs. Some students choose not to be on the meal plan. A variety of offerings are available in the four dining centers (Bennett, Kerr-Drummond, Scott-Parker- Wentz, and Willham cafeterias). Any student may eat any meal in any of the four dining centers. Each dining center offers a unique menu as well as the standard cafeteria selection. Specialty menus include delicatessen, health club, country cooking, fast food and others. These speciality plans vary as the students’ needs change. Mazzio’s Pizza restaurant is housed in Kerr-Drummond.

For more information, contact the Office of Residential Life, Oklahoma State University, Iba Hall, Stillwater, Oklahoma 74078.

Mobility Impaired Student Housing

All residence halls offer some housing for students who have impaired mobility. Upon notification, the Office of Residential Life routinely modifies rooms to meet an individual’s special needs. Six single-occupancy rooms on the first floor of Drummond Hall have been permanently modified for students with physical disabilities. Alterations to this area include special bathroom and laundry facilities, bedlifts, specialty kitchen, automatic entrance and exit doors, and beds and desks that meet federal standards. No staff are provided in this area. Residents must hire and supervise their own 24-hour attendants who may use an office in this area.

University Apartments

More than 700 all-brick apartments are available within walking distance of the campus. These apartments serve students in the following priority: families, single graduate students, and single, upperclass, undergraduate students. Priority for single students is given to those who have lived in the residence halls. All apartments are two-bedroom units that are available fully or partially furnished, or unfurnished.

The apartments have attractive outdoor surroundings with sidewalks, off-street parking, play areas, and laundry facilities provided in the University laundry and Brumley Apartments.

School bus transportation is provided to the Stillwater Middle School and High School, and one of the elementary schools. All other schools are within one and one-half miles of the housing area.

The Family Resource Center, located in the University Apartments area, offers a variety of programs to meet the needs of University Apartment residents. These programs vary depending upon the needs of the clientele as determined by surveys and individual meetings with residents. Typical programs have included: car seat loans, toy library, adolescent sexuality, child care information, and Thanksgiving dinners.

University Apartments provide an on-site staff member, an apartment assistant who is readily available to the residents. Each apartment assistant has responsibility for about 90 apartments. The assistant’s duties include helping residents resolve inter-apartment conflicts, providing information about the facilities and the University, meeting new residents, initiating activities which encourage residents to get to know each other, and providing referrals to appropriate University offices for residents’ needs. The apartment assistant can be a very helpful person for all residents.

For more information contact the University Apartments Office, E-2 Brumley, Oklahoma State University, Stillwater, Oklahoma 74078.

STUDENT HEALTH SERVICES

Patrick M. Murphy, Ed.D., Interim Health Administrator
Alice F. Gambill, M.D., Assistant Director
Donald L. Cooper, M.D., Staff Physician and Director of Athletic Medicine
Joseph Hake, M.D., Staff Physician
Thomas L. Hansen, M.D., Staff Physician
Ngek Huc, M.D., Staff Physician
Mary Sue Pinski, M.D., Staff Physician
Ronald R. Sanders, M.D., Staff Physician
Sherry Maxwell, Coordinator Mental Health Clinic

A student enrolling at Oklahoma State University for the first time is required to present a record of a physical examination by his/her private physician, or present a recent equivalent record of physical examination, such as a record from a place of employment or school, or the Armed Forces. An immunization record is of utmost importance. This health report is for determination and evaluation of the condition of the student so that corrective measures may be taken.

Oklahoma State University is as interested in the student’s physical and emotional well-being as it is in his or her intellectual and cultural development. Good health will not guarantee academic success, but it will help; while poor health, either physical or emotional, can impair both the academic and the extra-curricular career.

The OSU Student Health Center maintains a staff of seven full-time physicians, three staff psychologists, 12 registered nurses, three laboratory and x-ray technicians, and other necessary supportive and ancillary personnel who make a specialty of providing the best possible care at the least possible expense for the student. Along with this full-time help, there are part-time specialists in internal medicine, psychiatry, dietetics and radiology. Specialists in all other fields are available for individual and group cases.

Most injuries and illnesses can be treated at the Student Health Center, except major surgical cases, which can be diagnosed and then referred to either the family physician if time permits, or to a local surgeon in Stillwater. No dental care is offered.

There are no charges for office visits to see the physicians. This service is covered by the designated health fee paid by the student. To cover direct costs on laboratory, x-ray, pharmacy and hospital services a moderate fee is charged. There are 18 beds available for hospitalization and isolation if needed. A licensed nurse is on duty in the hospital and a physician is on call 24 hours a day for care of patients.

COUNSELING SERVICES

Patrick M. Murphy, Director
Martha Jordan, Assistant Director

The University Counseling Services provides free and confidential professional counseling assistance to students. Students experiencing a variety of concerns may find this service helpful to them.

Assistance can be provided with emotional problems, as they affect personal and academic goals, intellectual functioning or relationships with others. Services include a broad range of developmental, remedial and preventive activities.

Help is available with the selection of an academic major, when such selections are more complicated or difficult than usual.

The Counseling Services also assist students with problems, concerns, and experiences relating to educational difficulties; i.e. study habits, unusual test-taking stress, lack of motivation, or attitudes related to school.

Most services are provided at no charge. Minimal fees are assessed for certain tests and for specific programs or workshops. Depending upon the need, tests and other University services may be used in conjunction with counseling.

All information regarding appointments and content of meetings is confidential.

The University Counseling Services is an accredited member of the International Association of Counseling Services, Inc.

Personal Counseling Services

Personal counseling is offered in either an individual or group setting. Discussions between counselor and student in personal counseling can center on any situation which keeps the client from fully realizing his or her personal or academic potential. Among the variety of concerns dealt with in personal counseling are stress, anxiety, depression, eating disorders, substance use/abuse and interpersonal relationships.

Additional services provided to the academic community are developmental programs and workshops and consultation services.

Career Counseling Services

Counselors are available to assist students in personal assessment of career interests, values, and abilities to identify possible career directions related to a major area of study. Several services are provided for career decision making: individual counseling, DISCOVER Center, Career Interest Testing, and Career Outreach Programs.
Disabled Student Services

Maureen McCarthy, Coordinator

Disabled Student Services (DSS) is committed to providing support services to physically and learning disabled students. The underlying philosophy of the program is to promote comprehensive support services that will facilitate the academic progress of each individual student. A plan for services is developed on an individualized basis and may include academic advisement, specialized testing, recorded textbooks, academic accommodations, technological assistance, and other services as requested. Students may initiate a request for services by contacting Disabled Student Services.

Minority Programs and Services

Howard Shipp, Coordinator
Teresa Newson, Black Student Counselor
Mardo Salinas, Hispanic Student Counselor
Pete G. Coser, Native American Student Counselor

Minority Programs and Services (MPS) is a comprehensive support service for Black, Hispanic, Native American and Vietnamese-American students. The program provides educational and personal growth opportunities to enhance the university experience for minority students matriculating at Oklahoma State University. Support services are provided through one-to-one counseling, group counseling, outreach programs, academic skill development programs, and tutoring. The following areas of student development are emphasized: academic development, personal adjustment/development, motivation, and career goals.

Minority Programs and Services staff work closely with other offices of the University. These efforts include direct and indirect assistance in the following areas: recruitment and retention; financial assistance; career development and employment opportunities; and a network of accurate information.

To enhance the social and cultural opportunities for minority students, MPS staff members serve as a resource to various minority student groups and organizations in an advisory or consultative capacity. These organizations include: Hispanic Student Association, Afro-American Student Association, Minority Women’s Association, Native American Student Association, Vietnamese-American Student Association, American Indian Science and Engineering Society, Burnin’ Black Choir, NAACP, Society of Black Engineers, Technicians and Architects, and the Black Greek organizations.

International Student Services

Elaine Burgess, Coordinator
Stephen Haseley, Counselor
Mary Ann Kelly, Counselor
Regina Henry, Program Specialist

The International Student Services office (ISS) provides assistance to more than 1,500 international students from countries as far away as Singapore and Zambiya and as close as Canada and Mexico. The goals of the office are to assist international students to: learn about their new surroundings; use the resources of the University and community; provide programs and services to promote academic and social adaptation; and be advocates for students throughout the University and the community.

The staff in the International Student Services office is responsible for advising students and faculty on matters which are unique to international students and scholars. Personal counseling, financial planning, liaison with embassies and consulates, legal referrals, academic referrals, immigration matters, orientation programs, and advisement to groups, are among the services offered. Non-immigrant students can apply for on-campus work permits in the office.

Pre-arrival information is sent to new students from the office. Orientation and assistance with housing, banking, enrollment, etc., are offered to newly-arrived students. A one-hour credit course, “American Studies Survey,” (UNIV 1011) taught by many OSU professors, is coordinated by ISS. In collaboration with other OSU departments and community groups, a variety of cross-cultural programs is presented throughout the year. Interested American student volunteers participate and assist with a variety of activities.

The International Student Services office encourages international and American students, faculty, staff and community members to use its services and participate in the programs.

STUDENT ACTIVITIES

Jan Carlson, Manager, Student Activities
Marlon Morgan, Interim Coordinator of Greek Life
Marie Basler, Program Adviser, Off-campus Students and Adult Students
Antra Archer, Program Coordinator, Allied Arts
Muhrizah Brunken, Program Coordinator, SUAB and Student Union Programs

The Office of Student Activities is located in the basement level of the Student Union. This office is responsible for the program development of several student organizations and serves as the liaison with all student groups. The staff of this unit advises the Student Government Association, Off Campus Students Association, fraternities and sororities, Adult Student Organization, as well as other student leadership groups. This office also develops training programs for student leaders.

Also included in Student Activities is the Office of Student Union Programs. The staff of this area advises the Student Union Activities Board and is responsible for program development within the Student Union. These programs include films, speakers, exhibits, Freshman Follies, as well as other special events within the Student Union.

Disabled Student

The Honors Program

The University Honors Program is composed of a university-wide General Honors component and specialized components at the departmental or college levels. The Honors Program provides academically talented students with the opportunity to study, conduct research, and exchange ideas in an exciting and supportive academic environment. Honors sections are offered in many general education courses, and special honors seminars and interdisciplinary honors courses also are available. Honors classes are taught by outstanding faculty members, and the classes are small in size to facilitate active student involvement.

Completion of the requirements for the General Honors award leads to special designation on the student’s OSU transcript, as does completion of the requirements for the Departmental or College Honors award in the student’s academic major. Students earning the Departmental or College Honors award as well as the General Honors award receive the bachelor’s degree with honors including a special entry on their transcripts and special honors diploma.

Additional advantages to active participants in the Honors Program (minimum of three honors credit hours per semester) include use of the Honors Program Study Lounge in the Edmon Low library (with Apple Macintosh and IBM personal computers), extended check-out privileges for library materials, and priority enrollment for the following semester.

Admission of new freshmen to the University Honors Program is based on an ACT composite score of 27 or higher. New freshmen with ACT scores
of 25 or 26 may be admitted to the program upon recommendation of their academic college after a review of their high school transcripts. No formal application is required, but students must obtain an "honors stamp" on their Trial Schedule form prior to enrolling in honors courses. Students other than new freshmen may be admitted to the program on the basis of their cumulative grade-point averages (3.25 at the end of the freshman year, 3.37 at the end of the sophomore year, and 3.50 at the end of the junior year) and, in the case of transfer students, ACT composite scores in addition to these cumulative grade-point average levels.

For additional information about the University Honors Program, interested students should consult the Director of the University Honors Program, 509 Edmon Low Library.

Bachelor of University Studies

Individualization and flexibility are the features of the program leading to the degree of Bachelor of University Studies. This program is designed for the goal-directed, motivated and mature student who finds that the present degree programs (majors) at the University will not enable the student to attain his or her educational objectives; it is not intended for students whose educational objectives are undetermined. The Bachelor of University Studies degree permits a student to utilize the total resources of the University available in accomplishing unique educational objectives. The program may or may not prepare a student for a particular occupation or entry into a professional school.

Students interested in the Bachelor of University Studies Extended Studies Option (BUS-ESO) should visit with the dean or designated administrative officer of the college. This option may be available in some colleges. It is designed especially to meet the needs of the adult learner who has amassed either a number of credits from a variety of institutions of higher education or life-experience learning which can be documented and substituted for credits via a portfolio or other form of examination.

A student who believes that his or her educational objectives can best be fulfilled through a Bachelor of University Studies degree program can obtain information on the program from the office of student academic services in the college in which the student is to be enrolled.

All students who intend to present a program for the Bachelor of University Studies degree must enroll in one of the colleges of the University. The Bachelor of University Studies degree program must meet requirements stated in the "University Academic Regulations" in the Catalog.

Pre-law, Premedicine and Other Preprofessional Programs

Students planning to enter a professional school should visit with their advisers and consult professional school admission and course work requirements listed in the specific school catalog. It is the practice of many professional schools to select students with a variety of bachelor's degrees, although others may require a minimum basic core curriculum of varying length and grade-point average. Preprofessional program information is available in such areas as law, medicine, dental hygiene, dentistry, engineering, library science, medical technology, nursing, occupational therapy, optometry, osteopathy, pharmacy, physical therapy, physician's assistant, radiologic technology, social work, and veterinary medicine. For more information, students should consult their advisers or the director of student academic services of the appropriate college.

Oklahoma State University-Kyoto

Oklahoma State University-Kyoto (OSU-K) offers a two-year curriculum of General Education courses, on the campus located in Kameoka, Japan, to all students-Japanese, American, or other nationalities-who may then complete their baccalaureate degrees on the main campus in Stillwater. Admission requirements for students seeking to enter programs offered at OSU-K are the same as if they were enrolling at the Stillwater campus. Kameoka is a suburb of Kyoto, a city of 1.5 million and site of the ancient capital of Japan. Kameoka is located in the Kyoto Prefecture which is the equivalent of a U.S. state. Since 1984, Kameoka has had a sister-city relationship with Stillwater, and Kyoto has maintained a sister-state relationship with Oklahoma. In 1987, Kameoka officials asked OSU to establish an educational program which would benefit students from both nations. For additional information contact the Office of Admissions or the Office of International Programs.

University Center at Tulsa

The University Center at Tulsa (UCT) was established in 1982 to provide the third and fourth years of undergraduate study and master's degree programs for the Tulsa metropolitan area.

Programs of study are offered by each of four institutions-Langston, Northeastern, Oklahoma State University, and the University of Oklahoma. The Oklahoma State Regents for Higher Education exercise governmental control of the University Center at Tulsa including allocating and administering state-appropriated funds.

Oklahoma State University is approved to offer courses leading to 26 degree programs, five of which are undergraduate and the remaining are graduate programs. The four cooperating institutions are not permitted to duplicate programs.

Courses taken through the University Center at Tulsa are treated as residence credit at the institution teaching the course. To ensure programs at UCT are comparable to those on the Stillwater campus, Oklahoma State University assigns UCT classes as part of the regular teaching load of OSU faculty when possible. Courses taken through the University Center at Tulsa taught by Langston, Northeastern, or the University of Oklahoma are accepted at Oklahoma State University as transfer credits. For information on transfer of credits, refer to the section "Transfer of Credits" elsewhere in the Catalog.

Admission requirements for students seeking admission to programs offered by Oklahoma State University through the University Center at Tulsa are the same as if they were enrolling in classes at the Stillwater campus.

Degrees are granted by each of the cooperating institutions, not by the University Center at Tulsa. Graduates participate in the home institutions' commencement programs.

Credit Through Examination

Oklahoma State University Testing and Evaluation Service is a national test site for the College Board's College Level Examination Program (CLEP). National CLEP testing centers offer two kinds of examinations: general examinations and subject examinations. OSU only grants college credit for the subject examinations. Credit earned through these examinations are normally recognized by other colleges and universities throughout the nation.

Oklahoma State University is a national test site for ACT's Proficiency Examination Program (PEP). The University Testing and Evaluation Service administers PEP examinations in business, the arts and sciences and education.

OSU grants credit for acceptable scores in the Advanced Placement Program (AP) as administered by the College Entrance Examination Board in Princeton, New Jersey. The AP tests are taken by high school students while in high school. High school counselors can be of assistance in making testing arrangements.

Oklahoma State University recognizes credit earned through the International Baccalaureate Program which is administered through some high schools.

Military personnel and veterans who wish to establish credit for military training should submit to the Office of the Registrar and Admissions a copy of their DD214, Armed Forces of the United States Report of Transfer or Discharge, or their DD295, Application for the Evaluation of Educational Experiences During Military Service. OSU accepts credits earned throughout the DANTES Subject Standardized tests for active military personnel.

Academic departments on campus at OSU may offer advanced standing examinations in subject areas not offered by the CLEP, PEP or AP. Any currently enrolled student whose travel, employment, extensive readings or educational experience appear to have given the student proficiency in a subject that is offered at OSU, equivalent to the proficiency ordinarily expected of those students who take the subject in a regular class, may apply for an examination on the subject.

A student who has earned credit in a course which OSU refused to accept, because the institution at which the course was taken was not accredited, may apply for a validation examination. The dean of the college in which the course is offered appoints a committee of three to construct, administer and evaluate the examination.

Information pertaining to these examinations may be obtained from the Office of the Registrar and Admissions. See also the "Academic Regulations" section of the Catalog.
Oklahoma Scholar-Leadership Enrichment Program

The Oklahoma Scholar-Leadership Enrichment Program (SLEP) is a statewide academic program designed to develop scholarship and leadership abilities of outstanding students. Students study in intensive, five-day seminars with a distinguished scholar and are selected from Oklahoma's 21 four-year colleges and universities. OSU's upper-division and graduate students with a 3.00 GPA are eligible to apply. Freshmen and sophomores who have demonstrated exceptional academic achievement are also considered. SLEP seminars carry two hours of credit, and the only cost to students is the tuition for two credit hours and a transcript fee. The seminars are graded on a satisfactory/unsatisfactory basis and is transferred to OSU as Pass/Fail. Application should be made as early in the academic year as possible. Further information and application materials may be obtained from OSU's SLEP Coordinator, College of Arts and Sciences Dean's Office.

Semester at Sea

Semester at Sea is an opportunity for OSU undergraduates in good academic standing to earn a semester of credit in a wide range of academic areas while traveling around the world on the S.S. Universe. Approximately 50 percent of the semester is spent at sea and 50 percent in various ports allowing students to travel and relate experiences directly to the academic program aboard ship. Specific information may be obtained by contacting the Office of International Programs.

Study Abroad

Students at OSU are encouraged to broaden and add an international aspect to their education by taking part in study abroad programs. Students may earn credit while participating in programs in many parts of the world, including China, France, Germany, Japan, Mexico, Spain and the Soviet Union.

Students may earn OSU credit for summer work and residence in Belgium, France, Germany and Switzerland, through the International Cooperative Education Program.

Outstanding undergraduate and graduate students may qualify for the Bailey Trust Memorial Scholarship for study abroad in the liberal arts.

Students interested in study or work abroad and in scholarship opportunities should inquire at the Center for Global Studies, Life Science East 322, or at the Department of Foreign Languages and literatures.

SPECIAL SERVICES

Academic Advising

Academic advising is considered a major function within the University and is student-centered in that it serves the student first and foremost and not a particular discipline, department or college. Academic advising is designed to assist students in developing their intellectual potential through effective use of all resources available at the University—academic, cultural and social. Thus the role of the student's academic adviser is (1) to assist in educational planning, including clarification of career and educational goals, curriculum planning, and short-term course selection, (2) to become aware of and make appropriate referrals to campus support services, (3) to provide information to prospective majors, and (4) to prepare degree plans for graduating seniors and submit these to the respective college graduation certification office.

The advising function is performed within each of the undergraduate colleges and in the Office of University Academic Services. Each college structures its advising system based upon the college's philosophy and perceived student needs. In most colleges, freshmen and undeclared students are advised through the college's office of student academic services, while students who have declared majors are advised by an adviser in their major department.

Each academic dean has established an office of student academic services to represent him or her in matters concerning undergraduate students. Students are encouraged to contact their office of student academic services when questions arise regarding academic programs and requirements, and academic support services.

The locations of the offices of student academic services are:
Agricultural Sciences and Natural Resources-136 Agricultural Hall
Arts and Sciences-202 Life Science East
Business-2011 Business Building
Education-102 Gundersen
Engineering, Architecture and Technology-101 Engineering North
Home Economics-113 Home Economics West
University Academic Services-201 Whitehurst Hall

Students should keep in mind that while the University provides advising as a service and resource, the ultimate responsibility for identifying and completing degree requirements rests with the student.

University Academic Services

The Office of University Academic Services (UAS) is responsible for providing academic advisement and other related academic services to entering freshmen who do not wish to declare a major or college during their first semester and to students who are admitted provisionally to OSU. Students who enroll through UAS are assigned to advisers who assist with the exploration of career goals and decision making regarding appropriate degree programs, as well as with the clarification of University policies. The primary goal of UAS is to provide personal attention and assistance to students as they explore the various academic options available to them at OSU. Advisement in University Academic Services is also directed toward assisting students in meeting the University's General Education requirements for all students pursuing a baccalaureate degree. UAS advisers are knowledgeable in the degree programs in all of the six undergraduate academic colleges and maintain liaison relationships with the student academic services offices on campus.

University Academic Assessment Program

The office also provides academic advising and counseling to students enrolled in the University Academic Assessment Program (UAAP). This program is designed for students who have been placed on probation due to academic difficulty, yet recommended by their academic college to UAAP on a probationary basis for academic advisement and assistance. UAAP gives students an opportunity to re-evaluate their career and educational goals in an attempt to develop a realistic and successful educational plan. In addition to meeting minimum grade-point averages required by the Oklahoma State Regents for Higher Education, students must enroll in and satisfactorily complete the course "Academic Assessment and Evaluation." This course is designed to help students identify their reasons for experiencing academic difficulty and determine ways to overcome their academic weaknesses. It also assists students in exploring various career and educational alternatives.

In addition to the teaching, academic advising and counseling functions of UAS, the office serves as a central informational center through which referral to a variety of campus academic and non-academic support services may be obtained.

Tutor Referral Service. The Tutor Referral Service is a resource which refers OSU students to qualified tutors, free departmental tutoring programs, and other academic support and resource centers. This information is offered on a campus-wide basis and is made available to students through the Office of University Academic Services.

Computer Center

The University Computer Center (UCC) is one of three departments in the University Computing and Information Systems unit. The purpose of the Computer Center is to provide computing services to support the instruction, research and administrative functions of the University. The Center also provides technical assistance and training to the University community in the use of the Computer Center facilities.

The UCC main office is located in Math Science 113. In addition, the UCC has remote facilities for general use, consisting of computer terminals and printers located in Business 009, Engineering South 113, Math Science 108, Parker Hall basement and Thatcher Hall 205 and 221. The terminal rooms are open the same hours as the buildings.

A UCC microcomputer lab with IBM and Apple Macintosh microcomputers is located in room 020 of the Classroom Building. These microcomputers are equipped with Microsoft Word, Systat, and several other software packages. Students may use this software or bring their own. Lab monitors are available to help with the equipment. The lab is open for extended hours during the week and limited hours on the weekends.
Mathematics Learning Resource Center

The Mathematics Learning Resource Center (MLRC) is intended to be the hub of undergraduate mathematics instruction at OSU. The MLRC is located in the basement of South Murray Hall and is open to students on a walk-in basis. The MLRC consists of a 52-station, networked, microcomputer lab, a 20-station video lab, and a tutoring room. Instructional software and several programming languages are available, as well as a library of video cassettes which contain lessons on almost all levels of mathematics courses through calculus. There are also five Caramate audiovisual units for studying audio tapes and slide presentations.

Graduate and undergraduate students majoring in mathematics are assigned to the Center to tutor students and to assist students in the use of the equipment.

Psychological Services Center

The Psychological Services Center in North Murray Hall was established in 1971 as a training, service, and research facility for Oklahoma State University, Stillwater, and the surrounding community. It is operated by the Department of Psychology through the College of Arts and Sciences.

Services are provided to children, adolescents, and adults. The Center's clients include residents of Stillwater and the surrounding community as well as OSU students, faculty, and staff.

The Center offers a variety of psychological services such as: emergency and crisis intervention; individual, group, family, and marital therapy; parental counseling and training; play therapy for children; treatment of phobias and anxiety disorders; biofeedback; relaxation training; assertiveness training; hypnosis; stress management; intellectual, personality, neuropsychological assessment; and school consultation.

The Center's staff includes master's, doctoral, and postdoctoral students in the clinical psychology training program, which is accredited by the American Psychological Association. The staff also includes supervising clinical and developmental psychologists from the Department of Psychology faculty. Although the exact composition of the staff may change from year to year, the staff is generally composed of individuals from diverse ethnic and cultural backgrounds.

There is a graduated fee ranging from $2.50 to $35.00 per hourly session, depending on one's financial situation, although no one is turned away because of an inability to pay. Partial coverage is generally available for OSU staff and faculty covered by the OSU group insurance policy.

The Center is open from 8:00 a.m. until 10:00 p.m. Monday and Tuesday and from 8:00 a.m. until 5:00 p.m. Wednesday, Thursday and Friday. Appointments for confidential assistance can be made by contacting the Center, or on a "walk-in" basis.

University Placement

University Placement assists OSU students and alumni in the colleges of Arts and Sciences, Business Administration, Education, and Home Economics with career planning, development, and professional employment after graduation. Placement services for students and alumni in the colleges of Agriculture and Engineering, Architecture, and Technology are coordinated by their respective student academic services offices. Services to students by University Placement include: facilitating campus interviewing, providing job vacancy information, referring graduates to employers, assisting in resume preparation, sending placement credentials to employers, maintaining a career library, and providing job search counseling. Services have recently been expanded to include assisting all students with part-time and internship employment activities. Support is given to the academic areas by providing placement information to faculty and facilitating employer and faculty interaction.

SPECIAL FACILITIES

Bartlett Center for the Studio Arts and the Gardiner Art Gallery

Old Gardiner Hall, as the Bartlett Center was formerly known, was built in 1910 as a women's residence hall and has served also as a classroom building for women's physical education, speech, agriculture extension and the College of Business. The building was named to recognize Maude Gardiner, founder of the University's home economics program. Gardiner Hall was renamed the Bartlett Center when Mr. & Mrs. E M. "Pete" Bartlett gave Oklahoma State University a generous gift designated for the renovation of the Hall.

The Bartlett Center has greatly enhanced the image of the visual arts at OSU. The Center provides activities which have brought regional and national recognition to OSU in the visual arts. The Center contains eleven new studios, custom designed for specific activities. Special studios include oil painting, watercolor, graphic design, and drawing. In addition to studio space, the center provides a 100 seat auditorium with rear screen projection, Art Department faculty offices and the Gardiner Art Gallery.

The Gallery provides year-round exhibitions of regional and national importance to which the public is invited. Exhibitions have included the work of Manuel Neri, Deborah Butterfield, Lucus Samaras, and traveling exhibitions such as "American Works on Paper: 100 years of American Art," and "Watercolor U.S.A." Since 1987, the Gallery has hosted a biennial juried show, 'The Cimarron National Works on Paper." Faculty and student work is also exhibited on a regular basis.

Bartlett Independent living Laboratory

In 1988, a residential structure owned by the University was renovated and renamed the Bartlett Independent Living Laboratory. The renovation was funded by a generous gift from the F.M. "Pete" Bartlett family. Furnishings and equipment have been provided by cash and in-kind gifts from a wide variety of corporate and individual donors.

The purpose of the laboratory is to demonstrate ways that handicapped and older persons can live independently, comfortably, safely, and securely in the environments of their choice. Features of the lab include low thresholds, wide doorways and hallways, and universal hardware; computerized environmental control systems; motorized windows, blinds, and draperies; special features for visually and hearing impaired; adjustable-height work centers; and numerous examples of devices that help with daily living skills.

The laboratory is used daily by students and faculty from various disciplines. Visitors to the laboratory have included home builders, architects, interior designers, professionals who work with handicapped and older clients, families who want to build new homes or adapt present homes, inventors, engineers and others. The laboratory, nicknamed "Independence Hall," is open by appointment, Monday through Friday 8:00 a.m.-5:00 p.m. Appointments may also be arranged on weekends.

Colvin Center

The Colvin Physical Education Center, one of the finest facilities in the nation, encompasses a wide variety of organized and informal recreation activities for all University students. It houses the School of Health, Physical Education and Leisure, which includes the academic program, as well as recreation, intramurals, sports clubs, non-credit activity courses and outdoor recreation programs. Activity areas include racquetball, indoor and outdoor swimming, gymnastics, fencing, billiards, dance, golf, table tennis, wrestling, weight lifting, basketball, volleyball, badminton and squash. Intramural programs are conducted for women, men and co-rec (coed) teams.

Outdoor facilities available for student recreational use include tennis courts, basketball courts, archery range, golf driving range, jogging track and fields for soccer, rugby, football and softball. Facilities are also available at Lake Carl Blackwell and Camp Redlands for sailing, canoeing, and crew. Additional information about recreation programs may be found in the "Student Life" section.

Edmon Low Library

Conveniently situated in the center of the campus, Edmon Low Library contains more than 1,500,000 volumes and about 15,000 serials which support the diverse academic and research programs of the University. In keeping with its tradition of service, the library has a friendly and competent faculty and staff and an open-stack arrangement so that patrons may browse and select their own materials. The philosophy of service which underlies the Library's operation is also reflected in the number of reference desks located throughout the building. In the public service photocopier machines situated on every floor (5 cents per copy), in the more than 110 hours that the library is open each week that classes are in session, and in the extended hours to accommodate study for final examinations at the end of the fall and spring semesters. Guides to the use of the library are available inside the main entrances and adjacent to the various reference desks throughout the building.

Arrangement of the Collections is in broad subject areas (humanities, science and engineering, and social sciences) which are based upon the Dewey Decimal Classification System. There are also a number of special areas which house unique kinds of materials.
NOTIS is the name of the Library's new automated system. The on-line catalog component is expected to be operational sometime during the fall of 1991 through access terminals located adjacent to the Catalog Assistance and Information Desk on the Library's second floor. When fully operational, the system will also include automated circulation control and computer control of acquisitions and serial records.

Other On-line Access. CD-ROM products are available in various departments of the Edmon Low library and may be accessed directly by users. The 19 databases currently operational cover articles, newspapers, dissertations, and monographs from a wide variety of disciplines. Persons seeking information on a topic merely go to a work station on which an appropriate CD-ROM database is loaded and type in the request using key words or terms. Bibliographic citations retrieved are displayed on the monitor. The search can be modified as necessary and the results printed.

On-Line provides direct access to a number of remote databases. Persons who wish to arrange for a search should contact a reference librarian regarding an appointment.

Interlibrary Loan. Located adjacent to the Catalog Assistance and Information Desk on the second floor, this area provides access to needed materials that are not available in the OSU Library. Requests may be placed at any area reference desk. All borrowing of material is conducted within the provisions of the Oklahoma Interlibrary Loan Code and the National Interlibrary Loan Code of the American Library Association. To provide faster response to requests, courier service between the libraries at the University of Oklahoma, University of Oklahoma Health Sciences Center, OSU-Oklahoma City, College of Osteopathic Medicine in Tulsa, the University Center at Tulsa, the University of Tulsa, and the Oklahoma Department of Libraries is used Monday through Friday. The library also uses facsimile machines (FAX) as needed to send interlibrary loan requests and to receive copies of some articles.

Documents. Located on the fifth floor of the Library, the documents collection, considered by many to be the best in the Southwest, contains information on almost every subject. The documents area is a regional depository for all publications distributed by the United States Government Printing Office and the State of Oklahoma. Nondepository materials acquired from federal agencies supplement the depository collection. Publications of states, foreign governments, and international organizations are obtained to support fields of special interest to the University.

Patent and Economic Development (PED) Department. The Library was designated as a U.S. Patent Depository in 1956, providing a valuable and much-used resource for inventors, attorneys and businesses throughout the state. Patent searching is available by appointment from 8:00 a.m. to 5:00 p.m., Monday through Friday, and on some Saturdays. There is no charge for the assistance provided in searching the patent collection. The PED librarian is also available to discuss the patent collection and the patenting process with classes and other interested groups. The office is located in the southwest corner of the basement.

Maps. The Map Room houses one of the largest and most comprehensive collections of maps in the state. This collection contains more than 195,000 maps, as well as aerial photographs of Oklahoma and over 80 metropolitan areas in North America. The Map Room is a depository for maps from both the Defense Mapping Agency and the United States Geological Survey. The collection provides complete USGS topographic coverage of the United States. A fast-growing collection is the MPSI collection of urban aerial photographs. This collection consists of high-quality, large-scale aerial photographs of urban areas throughout North America, dated from 1980.

Microform. Numerous manuscripts, research reports, theses, books, periodicals, documents, and newspapers are available on the more than three million microforms which are housed in the Microform and Media Room and the Documents Department. In addition to the back files of newspapers on microfilm, including the New York Times and the London Times, the collection in the Microform and Media Room also contains large sets of material, such as Landmarks of Science, Early American Imprints, Early English Books, U.S. Patents, and Western Americana, as well as video cassettes, slide/tape programs, and taped lectures.

Special Collections and University Archives. Located on the third floor, and open from 8:00 a.m.—5:00 p.m. on Monday through Friday, the Library's Special Collections consist of rare books, selected material on Oklahoma history, and several manuscript collections. The collecting focus is on Oklahoma politics and agriculture, as well as journalism and natural resources. Among these collections are Oklahoma historian Angie Debo's books and papers; papers from the files of Paul Miller, the noted newspaperman; fine first editions of 19th and 20th century British and American authors which were collected by Henry G. Bennett, the papers of Henry S. Johnston, former governor of Oklahoma; and the Finnell, Fly, and McBride Collections on soil conservation and water resources. The University Archives house official records and other material which depict the development of Oklahoma State University. In addition to records which must be retained permanently, the Archives contain publications of the agricultural and engineering experiment stations; published faculty and departmental research; OSU theses and dissertations; and publications of the agricultural development of Oklahoma State University. Microforms of records of state government, state historical societies, and related organizations are available.

M. B. Seretean Center for the Performing Arts

The M.B. Seretean Center for the Performing Arts provides a modern and well-equipped home for the Music and Theater departments. Constructed in 1970 at a cost of three million dollars and named in honor of its principal benefactor, M.B. "Bud" Seretean, a 1947 OSU graduate, the Center is the focal point of all major dramatic and musical events on the OSU campus. The center's 75,000 square feet include a 900-seat auditorium and a 600-seat continental theater which attract a myriad of fine arts activities such as ballet, concerts, mime, opera, plays, faculty and student recitals, and a host of summer conventions.

In addition to the auditorium and theater, the Seretean Center houses teaching studios for music and theater, a variety of classrooms, a specially-designed choral room, a rehearsal hall for band and orchestra, costume and scene shops, and a well-equipped audio center, all designed to provide the best atmosphere in Oklahoma for the teaching of the fine arts.

Museum of Higher Education in Oklahoma-Old Central

Old Central, the oldest building on campus (1894), was placed on the National Register of Historic Places in 1971; it is now operated by the Oklahoma Historical Society as a museum. The building presently has exhibits relating to OSU's early history, and some rooms have been recreated as they would have been in 1894. Traveling exhibits are also presented on various subjects.

Information and exhibit materials are being collected from other higher education institutions around the state; when completed, the Museum of Higher Education in Oklahoma will be the only museum offering a comprehensive history of higher education for an entire state. There will be permanent and rotating displays portraying the development of the educational system from Oklahoma and Indian Territory days to the present.

The museum is open to the public Tuesday-Friday, 9:00 a.m.—5:00 p.m., and Saturday and Sunday, 2:00—5:00 p.m. Special tours and slide presentations are available for groups by appointment. The Assembly Room, on the second floor, may be reserved by non-profit groups and organizations.

Student Union

The primary purpose of the Oklahoma State University Student Union is to serve the members of the University community through an organization which provides a myriad of necessary and convenient goods and services; offers programs to enhance the educational, social, cultural, and recreational development of individuals; and fosters an atmosphere conducive to open interaction and exchange among all students, faculty, staff, alumni and guests.

Dating back to 1815, college unions have always been thought of as "places where all may meet on common ground." In their early years, the college unions were debating halls for university students. Through the years, student unions have added to these halls such facilities as recreation centers, dining halls and meeting rooms. Today student unions bring together students, faculty, staff, alumni and guests in a friendly, casual atmosphere. They are not merely buildings, but serve as the community center—"the heart of the campus."
The OSU Student Union is certainly no exception to this tradition as it has been serving the University community and state since opening in 1950. With a facility consisting of 543,441 square feet, it stands as one of the largest and most comprehensive unions in the world. It provides the University with such services as an 81-room hotel, a variety of lounges, a theater, an art gallery, extensive food services, a shopping mall, a recreation center, a bookstore, a post office, a travel agency and many University offices.

The Student Union is the center of student activities as it houses the offices for most student organizations. Many activities such as movies, dances and speakers are provided for students by the Union’s student programming organization, the Student Union Activities Board.

As Oklahoma State University’s conference center, the Student Union hosts many continuing education conferences throughout the year. The variety of meeting rooms located throughout the Union are also available for student and faculty use, normally at no charge.

Although the OSU Student Union has an annual budget of approximately $9 million, less than 10 percent of the total cost of operating the Union is funded from student fees. As the Union receives no state funds for its operations, the remainder of its budget is generated from the sale of goods and services, thereby making it virtually a self-supporting University facility.

Telecommunications Center

The Telecommunications Center is a visible commitment to the University’s desire to keep pace with the communications revolution. Educational Television Services (ETS) occupies the facility and is equipped with two independent, fully operational studios with a capacity of eight cameras. A third studio is a self-contained, instructor-controlled, classroom-style studio for videotaping courses and live two-way presentations via compressed video fiber optic lines. There are two off-line and one on-line editing suites and two remote camera units.

ETS has the ability to transmit or receive on either the C-band or Ku-band satellite format, including using a Ku-band satellite truck from remote locations. ETS produces over 1400 live and taped programs per year consisting of video-teleconferences, educational programs, documentaries, video training tapes, and public service announcements for the University, state agencies and for state and federal grants.

ETS employs a full-time staff of 35 in the areas of production, engineering and art. Each of these areas is also staffed with students working to earn practical experience under the guidance of professionals. For those students who meet the prerequisites, who are conscientious and who are willing to work, there are three methods of entry into employment at ETS. One method is through an internship which allows the student to earn college credit. Another method is through part-time employment at ETS, usually reserved for those students who have completed an internship, and the third is through the University’s work-study program.

Wellness Center

The OSU Wellness Center offers a variety of health-related programs for all OSU students. These programs include free wellness screening (cholesterol, blood pressure, body composition, and computerized health risk appraisal), wellness education classes, certification of aerobics and weight training instructors, and campus-wide health promotion activities. Upon graduation, OSU students, who have participated in the wellness program, will receive a wellness transcript, which will demonstrate to prospective employers that this job candidate will be a better employee because he or she has actively pursued a lifestyle of improved health and well-being.

The Wellness Center houses a 140-seat theater, demonstration kitchen and dining room, aerobics area, weight room, computer lab, resource center and a full-service wellness laboratory. These rooms are available to OSU student groups for OSU-sponsored events, in cooperation with the Wellness Center.

ALLIED ARTS

A unit of the Office of Student Activities, Allied Arts has the responsibility of developing and implementing for the University a diversified program in the performing arts. This includes musical performances from orchestras to quartets and soloists. Allied Arts brings to campus outstanding dance and theatrical companies. Each year, Allied Arts schedules five to six performances for the campus community.

CAMPUS RECREATION

Campus recreation programs are designed to provide equipment, space and professional assistance in helping University students, staff members, and their families pursue individual recreation interests. Located in the Colvin Center and Annex are facilities for 32 activities including racquetball, gymnastics, basketball and swimming. In addition, areas for soccer, football, rugby, softball, archery, tennis, jogging, sailing, canoeing and hiking are made available for student and staff use.

Recreation. Through the recreation program, the staff of the Colvin Center offers a variety of noncredit instructional programs each semester to students, faculty and their dependents. Speciality services include poolside dances and movies, International Olympics, married student recreation, freshman programming, and extension services for visiting groups. Instructional programs for adults include yoga, noon fitness, evening fitness, beginning karate, advanced karate, tennis, racquetball, swimming, scuba, water exercises, exercise to music, aerobic dance, weight training, massage, country swing, ballet and belly dancing. Instructional programs for dependents include beginning gymnastics, intermediate gymnastics, beginning swimming, intermediate swimming, karate, creative dance and rhythmic gymnastics (3-4 years). Free children’s activity programs are offered prior to the dependent’s instructional program each Saturday morning.

Intramurals. The intramural program at Oklahoma State University is an important part of student life on campus. The goal is to offer a wide variety of sports experiences for each student, regardless of skill or ability, to develop carry-over sports skills for life, to encourage physical activity, to develop habits of fair play and to provide for leadership development. Programs are available for both men and women (23 different activities), as well as participation in co-recreational activities.

Sports Clubs. The campus recreation program advises and helps organize the active sport clubs on campus, which are governed by the Sports Club Council. The Council is chartered by the University and its officers are elected students. This Council develops sports club policies, sets priorities, and functions as the official representative for all sports clubs. The campus recreation program provides the adviser for this Council. Membership in all sports clubs is open to all students. If a group of students is interested in starting a sports club, the coordinator will assist them.

Active sports clubs are Auto Club, Bowling, Crew, Cycling, Fencing, Karate, Lacrosse, Racquetball, Rugby, Sailing, Scuba, Skydiving, Soccer, Snow Skiing, Volleyball, Waterskiing, Weightlifting and Wilderness Pursuits.

Outdoor Adventure. Another thrust of the program is the OSU Outdoor Recreation Program. Organized trips are led by professional staff and trained students. The student’s choice of activity will lead to the top of the mountains, over rocks and down rivers. The wilderness trips are designed to offer an opportunity for developing outdoor skills, but even more importantly, to develop and explore the individual, other people and the surroundings.

Camp Redlands, Lake Carl Blackwell, and a challenge ropes course at the Redlands site as well as the OSU Aquatic Center (Lake Carl Blackwell) are included in the varied offerings. The management and development of the 80-acre Camp Redlands for use by University and community groups has recently been incorporated into this program.

Rental and purchase of quality outdoor equipment is available in the Colvin Center.

FILM SERIES

There are several regularly scheduled film programs on campus, in addition to individual films scheduled by campus groups. A classic film series is sponsored by the Department of English. This series brings the best of foreign and classic films to campus.
The Arts and Sciences Film Series presents screenings of six international films during the regular semester and three during the summer session. Season subscriptions as well as single admissions are available. The Series devotes itself to films otherwise unavailable in Stillwater, whether motion pictures from abroad (all foreign language films have English subtitles) or from the U.S. At least two films each season are recent Academy Award winners or nominees for Best Foreign Film. The Series occasionally co-sponsors lectures by visiting filmmakers.

**GREEK ORGANIZATIONS**

The fraternity and sorority system is and has been a viable part of Oklahoma State University since 1917. There are approximately 3500 men and women who are members of the 22 national fraternities and 14 national sororities. The majority of these Greek letter organizations own their own houses which are considered by the University as University-recognized housing. The primary thrust of the Greek system is to enhance and promote brotherhood/sisterhood, academic achievement, leadership and social awareness. Fraternities have an informal rush and normally contact potential members during the spring and summer months. Sororities hold a formal rush which traditionally begins in late August. For additional information on the Greek system or how to apply for rush, write to the Office of Greek Life, OSU Student Union.

**HONOR AND SERVICE ORGANIZATIONS**

OSU offers opportunities for personal and professional development through many nationally-affiliated honor and service organizations. These organizations provide opportunities for leadership and program development, new friendships and recognition of achievement. University-wide organizations include:

- Blue Key (junior and senior honor society)
- Golden Key (junior and senior honor society)

**RELIGIOUS LIFE**

Campus religious centers, supported by state and national church bodies specifically to serve the University community, provide opportunity for worship in both traditional and contemporary services; religious education commensurate with higher learning for the development of the whole person; counseling that maintains a spiritual basis for the cohesion and meaning of life; and social activities which allow relationships and life views to deepen. The 18 religious centers have strategic locations close to campus and, in addition to their own ministry, coordinate many of their efforts with each other and the University administration through the Association of University Ministers.

**LECTURES**

Oklahoma State University, through its academic organizations and student groups, has a significant number of speakers each year, enriching the intellectual life on campus. Individuals, from both off-campus and on-campus, share their expertise with faculty, students, staff, and town's people on a wide variety of topics.

Many of the academic units as well as student groups invite speakers to their meetings in order to enhance the educational component of the University. These lectures are generally of interest to specific academic areas, rather than to the general campus. The Student Government Association, through its Forum Committee, brings major figures in politics, entertainment, and business to the campus. The Student Union Activities Board also has a speaker's program related to topics of general student interest. Other student organizations conduct active lecture programs of general interest.

**THEATER**

The four to six plays produced each year range from classical to contemporary; from sublime to ridiculous; from high seriousness to low comedy. So too, variety in casting is assured by a policy of choosing actors from the entire range of the OSU student body, regardless of major. While one play may be of greatest interest to students of history or philosophy, the next may appeal most to those who need escape for an evening's light entertainment.

OSU Theater extends beyond OSU student productions in the Seretean Center. In recent years the local department has hosted statewide versions of the American College Theater Festival, displaying outstanding theater from other Oklahoma colleges and universities enroute to regional and national festivals.

**RESIDENTIAL LIFE**

Residence halls are popular places to live on the OSU campus. The housing and food service programs have a proud tradition of excellence recognized nationwide. Much of the success of the residence halls is the strong and vital student government system consisting of floor governments, councils for each hall or complex and the Residence Halls Association, which represents all halls on campus.

The Residence Halls Association acts as the voice of residence hall students to the University administration concerning policies and regulations, and coordinates campus-wide activities for the enrichment of residence hall living. All residence halls on campus combine to form the Residence Halls Association (RHA). Each hall has its own elected officers and constitution, and is a part of the RHA system of representative government. There are numerous opportunities for involvement in the hall, such as floor officer, social committees, food committee, and sports and athletic activities.

The Alumni Association serves as a liaison between OSU and its former students, and provides members immediate and direct contact with the University. The Association operates for the benefit of both former students and Oklahoma State University.

All graduates, former students, and friends of OSU are eligible for membership in the Alumni Association by paying an annual or life membership fee.

The OSU Alumni Association is governed by a board of directors. The director of alumni relations also serves as executive director and secretary-treasurer. Four program directors, a student program coordinator, and an administrative associate serve as staff.

The Alumni Association promotes involvement of alumni and friends in many ways.

**Clubs.** There are approximately fifty alumni clubs in the state of Oklahoma. Other clubs are located across the United States. Club activities include membership drives, social functions, and other programs to support OSU.

**Student Recruitment**

The Alumni Association helps the alumni clubs to sponsor honors programs for the top academic achieveers in Oklahoma high schools. Key alumni clubs outside of Oklahoma are trained by Alumni Association staff to recruit out-of-state students. Expanded activities include organizing alumni across the state to personally contact students and to raise endowed scholarships for students in their area.

**Homecoming and Reunions.** Alumni are invited to return to campus to renew friendships and participate in a series of informative and social activities.

**Travel.** The Alumni Association organizes travel packages designed to meet educational and social objectives of alumni and friends.

**Awards and Recognition.** Each year students and alumni are honored for outstanding service to OSU or for outstanding personal achievement.
OSU Foundation

Established in 1961 as an independent, private, not-for-profit corporation, the OSU Foundation is the official fundraising organization for Oklahoma State University. The Foundation's mission is to generate, and prudently manage and disburse funds raised for a wide variety of programs, including scholarships, fellowships, endowed faculty positions, the library, varsity athletics and capital improvement projects.

Private funds raised by the OSU Foundation enable Oklahoma State University to obtain the necessary resources vital in maintaining educational excellence.

OSU-Okmulgee

Robert Klabenes, Provost and Vice President of Oklahoma State University
Thomas Dooley, Assistant Director for Business Affairs
Larry Williams, Assistant Director for Student Affairs
Linda Avant, Assistant to the Director, Academic Affairs

Oklahoma State University-Okmulgee, offers post-secondary, technical education in a residential campus setting culminating in the associate degree. This branch campus has been labeled a national pacemaker in this specialized field of higher education.

OSU-Okmulgee's mission is accomplished in a multidimensional program of general studies, related and specific programs, and cocurricular activities. OSU-Okmulgee offers approximately 40 post-secondary, college credit technical programs not duplicated at state vocational and technical schools or at other colleges. The Okmulgee campus emphasizes teaching of emerging and advancing technologies. Students are introduced to computer applications as an enhancement to their educational studies.

OSU-Okmulgee serves the educational needs of students seeking exciting and rewarding careers in business and industry. These students want an education that is of sufficient breadth and depth to enable them to enter the world of business and industry with highly marketable skills, and provide a pathway for career advancement. OSU-Okmulgee graduates are employed throughout Oklahoma, the nation and the world in fields ranging from high tech and manual arts to business and fine arts.

OSU-Okmulgee operates year round on the trimester system-three 15-week sessions per year. Classes begin in early January, late April and late August.

Major instructional departments include air conditioning and refrigeration technology, automotive technology, business and office occupations, computer information systems, construction technology, diesel and heavy equipment technology, electrical and electronics technology, engineering graphics technology, hospitality services technology, manufacturing technology, small business occupations, and visual communications.

OSU-Okmulgee's academic programs are complemented by outstanding educational facilities. Labs feature state of the art instructional equipment. Nationwide attention is being focused upon the college's Noble Center For Advancing Technology. This facility houses many computer-intensive technologies, including information processing, microelectronics and automated manufacturing.

Oklahoma State University-Okmulgee is located at 1801 East Fourth Street, Okmulgee, Oklahoma 74447-3901.

University Academic Regulations

Contents-Academic Regulations

1. Admission Withdrawal
1.1 Admission of Freshmen
1.2 Admission of Transfer Students
1.3 Admission to Certain Professional Programs
1.4 International Student English Proficiency Requirement
1.5 Satisfactory Academic Progress
1.6 Scholastic Requirements for Student under Academic Probation in an Undergraduate College
1.7 Academic Suspension
1.8 Reinstatement after Academic Suspension
1.9 Readmission
1.10 Withdrawing from the University

2. Student Status
2.1 Classification of Students
2.2 Full-time Students
2.3 Part-time Students
2.4 Special Students

3. Requirements
3.1 Date of Matriculation
3.2 Changes in Degree Requirements
3.3 Honors Programs
3.4 General Education Requirements
1.5 Satisfactory Academic Progress. Students not under academic suspension from the University are judged to be making satisfactory progress toward their educational objectives. They are eligible to enroll in any of the undergraduate colleges except as may be restricted. (See "Admission to Certain Professional Programs").

1.6 Scholastic Requirements for Continuing Enrollment of a Student under Academic Probation in an Undergraduate College. For continued enrollment in an undergraduate program, a student must have earned a cumulative grade-point average as indicated below:

<table>
<thead>
<tr>
<th>TOTAL HOURS ATTEMPTED</th>
<th>MINIMUM CUMULATIVE GRADE-POINT AVERAGE REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 through 60</td>
<td>1.70</td>
</tr>
<tr>
<td>61 or more</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Freshman students, 30 or fewer credit hours, with a cumulative GPA of 1.70 to less than 2.00 will be placed on academic notice. These students should remain in contact with their student academic service offices regarding special academic support services and procedures.

Each course in which a student has received a recorded grade will be counted in the calculation of the grade-point average for retention purposes.

A senior, with 90 or more hours in a specified degree program, who has failed to meet the cumulative grade-point average of 2.00 may enroll in an additional 15 semester hours in further attempt to achieve the requirements for retention. Such students will be afforded this extension one time only.

1.7 Academic Suspension. A student who has not attended OSU but was not enrolled during the immediate past semester must file an application for readmission. A student who has attended another college or university since last attending OSU, must file a transcript of all work taken elsewhere. Readmission may be considered on the merits of the individual case. Suspended students can be readmitted only one time.

1.8 Reinstatement after Academic Suspension. A student who has been suspended from the University for academic reasons may not be readmitted until one regular semester (fall or spring) has elapsed; readmission will be considered on the merits of the individual case. Suspended students can be readmitted only one time.

1.9 Readmission. A student who has attended OSU but was not enrolled during the immediately prior semester must file an application for readmission. A student who has attended another college or university since last attending OSU must file a transcript of all work taken elsewhere. Admission status will be determined after an evaluation of the previous work has been made.

1.10 Withdrawing from the University. The withdrawal process is initiated in the student’s dean’s office.

A student who withdraws prior to the end of the sixth week of a regular semester or the third week of a summer session will receive a grade of “W” (withdrawn). A student who withdraws after the sixth week of a regular semester or the third week of a summer session but prior to “Pre-finals Week” will receive a grade of "WP" (withdrawn passing) or "WV" (withdrawn failing) as assigned by the instructor of each course. The grade of “WV" will be calculated in the grade-point average.
After the beginning of "Pre-finals Week" a student may not withdraw from the University and shall be assigned only the grade of "A," "B," "C," "D," or "F" (or when appropriate) "L," "NP," "P," or "R" by the instructor of each course at the end of the semester or summer session.

2. STUDENT STATUS

2.1 Classification of Students. Undergraduate classification is determined by the criteria below:
- Freshman: fewer than 28 semester credit hours passed
- Sophomore: 28 to 59 semester credit hours passed
- Junior: 60 to 93 semester credit hours passed
- Senior: 94 or more semester credit hours passed

2.2 Full-time Students. Regular semesters: undergraduate students who are enrolled in 12 or more semester credit hours are classified as "full-time" students. Graduate students enrolled in nine or more semester credit hours are classified as "full-time." Summer session: undergraduate students who are enrolled in six or more semester credit hours, or graduate students who are enrolled in four or more semester credit hours, are classified as "full-time." Students engaged in an internship or cooperative education program assignment that requires full-time work on the assignment are regarded as full-time students when they are enrolled in the number of credit hours deemed appropriate for the academic credit they receive for the assignment.

A student holding a 0.50 FTE graduate assistant appointment, and enrolled in a minimum of six hours during the fall or spring semester, and three hours during the summer semester will be certified as a full-time graduate student. Any FTE appointment less than 0.50 requires nine hours of enrollment for the fall or spring semester, and four hours of enrollment for the summer semester in order for the student to be certified as a full-time student.

A student enrolled for the final semester of a bachelor's degree program may be classified as a full-time student if enrolled in less than nine hours during the semester in which the degree will be conferred. If

the dissertation, thesis, report, or creative component is the only item left to complete the plan of study, the student is designated as being enrolled full-time upon the approval of the department head and dean of the Graduate College.

2.3 Part-time Students. Students who are enrolled but not meeting the definition of full-time students are classified as "part-time." Undergraduate students are classified as "half-time" if they are enrolled in six hours in a regular semester (or three hours in a summer session). Graduate students are classified as "half-time" if they are enrolled in four hours in a regular semester (or two hours in a summer session).

2.4 Special Students. A student who does not have immediate plans to enter a degree program but wants to take courses, may be classified as a "special student." A student on an F-1 visa may not enroll as a special student since he or she must be admitted to a degree program.

3. REQUIREMENTS

3.1 Date of Matriculation. Matriculation occurs when a student first enrolls in an accredited institution of higher education. That date will be used in calculating the time limit for the use of a given plan of study.

3.2 Changes in Degree Requirements. When a student first enrolls at OSU, the degree requirements are made available. Although the curriculum may be revised before a student graduates, a student who makes normal progress toward graduation (completing a four-year degree in not more than six years) will be held responsible for the degree requirements in effect at the time of matriculation, and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation. A student has the option of adopting the new requirements that have been established since matriculation.

33 Honors Programs. (See "Honors Programs" in the Catalog.)

3.4 General Education Requirements. Although there is a University-wide general education program, each college determines and publishes the general education requirements for its degree programs. College requirements may exceed the minima for general education established by the University, which are:
- 40 semester credit hours, including six semester credit hours of English composition;
- three semester credit hours of American history (HIST 1103), and three semester credit hours of American government (POLS 1013);
- at least six semester credit hours in approved general education designated areas of Analytical and Quantitative Thought, Humanities, Natural Sciences and Social and Behavioral Sciences (at least one course in each of these four areas must come from the approved general education lower-division course list, and at least three hours of (A) must be MATH 1513, College Algebra, or a more advanced general education MATH course);
- at least one course in the International area and one course in the Scientific Investigation area;
- and a senior capstone course.

Substitution of general education courses is allowed when background for the major demands greater depth in an area in which a general education requirement is stated. Only in the Analytical and Quantitative Thought (A) and Natural Sciences (N) areas is substitution of the more advanced lower-division course permitted. Such a substitution requires the recommendation of the student's academic adviser and dean and the approval of the Office of the Vice-President for Academic Affairs and Research. Courses used to fulfill general education requirements are identified by code letters which appear preceding the course titles listed in the back of the Catalog and in the class schedule book. The code letters designate the general education category for which the course may be used:
- A Analytical and Quantitative Thought
- H Humanities
- I International Dimension
- L Scientific Investigation
- N Natural Sciences
- S Social and Behavioral Sciences
- Specially designated courses in the categories A, H, N, and S which have been designed especially to provide general education experiences to students outside their major field are marked with SpD.

3.5 English Composition Requirement. The University requires a minimum of six semester credit hours in English composition for a baccalaureate degree. The required sequence of courses is ENGL 1113 and ENGL 1213. For those who qualify, ENGL 1013 or 1313 may be substituted for ENGL 1113. Students who earn an "A" or "B" in ENGL 1113 (or ENGL 1013 or 1313) or who earn three semester credit hours in English composition by advanced standing examination, and who have the consent of their college, may substitute ENGL 3323 for ENGL 1213. Students who qualify may substitute ENGL 1013 or 1413 for ENGL 1213. A third course may be required by the student's college to satisfy either an additional composition or oral communication requirement.

3.6 English Essay Proficiency Examination. All candidates for a baccalaureate degree at OSU must pass the University English Essay Proficiency Examination. Students are required to take the examination no later than the first semester of their junior year. The Department of English administers the examination in special group sessions; for a small fee, it may also be taken by appointment at the University Testing and Evaluation Service. Registration for the examination is in the office of student academic services of each college. Only students who present registration cards will be permitted to take the examination. Students who fail the examination will be required to take it again until they have demonstrated proficiency; they may want to provide additional educational experiences for themselves, such as attending tutorial sessions in the Writing Lab or taking or auditing any writing courses. The National Teacher Education Communications Skills Test may be substituted for the University English Essay Proficiency Examination.

3.7 Substitution of Required Courses. In meeting degree requirements a lower-division course may not be substituted for an upper-division course requirement. Substitution policy is governed by the individual colleges.

3.8 Waiving of Required Courses. A maximum of six semester credit hours may be waived. Required courses in English, American history and American government cannot be waived, and the total number of semester credit hours required for the degree cannot be reduced. Waive cards must be signed by the student's adviser, the head of the student's major department and the dean of the college.

3.9 Changing Majors. Students are advised to select a specific major no later than the end of the sophomore year. Students on probation, or not making satisfactory progress toward a degree, may change majors only with the approval of the dean of the college in which they wish to pursue a different degree.
3.10 Deadline for Completion of Requirements. Degrees are conferred only on specific commencement dates. If a student completes requirements for a degree after a commencement date, the degree will be granted at the next scheduled commencement after the student files a diploma application. (See "Diploma Application.") The student may receive a certified statement of completion of graduation requirements at the Office of the Registrar. All candidates for degrees must have their names listed in the commencement program.

3.11 Second Baccalaureate Degree. A student who receives a baccalaureate degree from OSU may use all applicable courses toward a second baccalaureate degree. A minimum of 30 semester credit hours of additional work, including all requirements of the second baccalaureate degree, is required. The Bachelor of University Studies degree has separate requirements.

4. CREDITS

4.1 Residence Credit. Residence credit is awarded for work taken on campus (not through extension or correspondence) or at a location officially designated as a residence center by the governing board of the institution (e.g., in-state military bases and OSU courses at the University Center at Tulsa).

4.2 Extension and Correspondence Credit. Academic credit is awarded for courses offered through the extension offices of the six colleges, by the Independent and Correspondence Study Center of OSU, or by transfer of work certified as extension or correspondence credit by another fully accredited institution.

Extension Credit. OSU will accept, toward a degree, a maximum of eight semester credit hours earned through extension at another institution if that institution is fully accredited. Credits earned through extension plus any earned through correspondence cannot exceed one-fourth of the credits required for a baccalaureate degree.

Correspondence Credit. OSU will accept, toward a degree, a maximum of eight semester credit hours earned through correspondence at another institution if that institution is fully accredited. Credits earned through correspondence plus any earned through extension cannot exceed one-fourth of the credits required for a baccalaureate degree.

4.3 Transfer Credit from Other Accredited Four-year Institutions. Except as excluded in the section on "transfer of Credits from Junior Colleges" and "Residence Requirements," credits transferred from accredited senior colleges will apply toward baccalaureate degrees in the same way that they would apply had they been earned in residence at OSU. Students may not use transfer credits to satisfy more than one-half the major course requirements for a department unless they have the approval of the head of that department and the academic dean.

4.4 Transfer Credit from Junior Colleges. Credits will be accepted by transfer from a junior college to meet lower-division (i.e., 1000- and 2000-level courses) requirements only. A minimum of 60 semester credit hours must be earned at a senior college. Within these guidelines, transfer credits are subject to the individual colleges' degree requirements.

4.5 Transfer Students with Less than a "C" Grade-point Average. Students who are accepted with transcripts with grade-point averages below "C" will be placed on academic probation.

4.6 Advanced Standing Credit. Any currently enrolled student whose travel, employment, extensive readings or educational experience appear to have given the student proficiency in a subject that is offered at OSU, equivalent to the proficiency ordinarily expected of those students who take the subject in a regular class, may apply for an examination on the subject.

Credit will be recorded with a grade of "P" if the student earns a "C" or better on the examination. In order to qualify for an advanced standing examination, the student must

a. be enrolled at OSU;

b. need 15 or more semester credit hours at OSU (excluding the hours in which currently enrolled) toward meeting the requirements for the degree. These 15 hours must be resident course work, i.e., exclusive of transfer, correspondence, extension or other advanced standing credit hours; (See "Residence Requirements.")

c. need the course to meet some requirement for a certificate or degree that is being pursued at OSU;

d. not have taken an examination over the course within the preceding six months;

e. have the recommendation of the Office of the Registrar and the approval of the head of the department in which the course is offered;

f. have paid the fee of $5.00 per credit hour. (This fee is not refunded even if the student receives no credit.)

Advanced standing credit awarded to a student must be validated by successful completion of 12 or more semester credit hours of academic work before the credit is placed on the students transcript. The amount of advanced standing credit which may be applied to a degree program is subject only to meeting the residency requirements of OSU. (See "Residence Requirements" in the "Graduation" section.)

4.7 Validation Examination Credit. A student who has earned credit in a course which OSU refuses to accept, because the institution at which the course was taken was not accredited, may apply for a validation examination. In order to qualify for a validation examination, a student must

a. be enrolled at OSU at the time the student takes the examination;

b. present the necessary evidence to prove that the student has taken the course;

c. get approval from the Office of Admissions, the dean and head of the department in which the course is offered to take the examination;

d. take the examination within the first semester after entering OSU;

e. take only one such examination in each subject

The student secures the forms for the examination at the Office of Admissions. The dean of the college in which the course is offered appoints a committee of three to construct, administer and evaluate the examination. The result is reported to the Office of the Registrar where a "P" grade is recorded if the examination result is "C" or above.

4.8 Graduate Credit Hours for a Senior. A senior who is graduating from OSU at the end of a semester or summer session may take a limited number of courses for graduate credit during the last two semesters or summer sessions. The written request to receive graduate credit must be made before the end of the fifth week of class instruction of a regular semester or the second week of a summer session.

Such credit may be earned under the following conditions:

a. the student must meet the same admission requirements and be subject to the same possible probationary or provisional restrictions as students admitted in graduate status.

b. the student must achieve an overall 3.00 grade-point average in all courses and make no less than a "B" in those courses for which he or she wants graduate credit.

c. the student must have the approval of the head of the department in which the course is offered;

d. the student must complete the requirements for the baccalaureate degree at the end of the semester or summer session or be within 12 semester credit hours of completing such requirements at the beginning of the semester or summer session in which graduate credit is requested;

e. a student must either complete the requirements for a baccalaureate degree by the end of the semester or summer session or be within 12 semester credit hours of completing such requirements at the beginning of the semester or summer session in which graduate credit is required.

4.9 Semester Credit Hour. A semester credit hour is equivalent to (a) 16 50-minute class sessions (including examinations) conducted under the guidance of a qualified instructor plus 32 hours of preparation time, or (b) 16 3-hour laboratory sessions, or (c) 16 2-hour laboratory sessions plus 16 hours of preparation time. These same equivalencies apply to extension courses, short courses and other learning formats for which academic credit is awarded.

4.10 Foreign Language Credit for Native Speakers. A native speaker of a foreign language cannot enroll in or earn credit toward graduation in lower-division (1000- or 2000-level) courses in that language. A native speaker of a foreign language is defined as a person whose high-school level instruction was conducted principally in that language. Native speakers may occasionally have valid reasons for establishing credit in a lower-division course. Requests for such consideration should be directed to the dean of the student's college for recommendation to the head of the Department of Foreign Languages and Literatures.
5. ENROLLMENT

5.1 Course Numbering System. All courses are identified by numbers composed of four digits. The first digit indicates the class year in which the subject is ordinarily taken, although enrollment is not exclusive as to student classification; the second and third digits identify the course within the field; and the last digit indicates the number of semester credit hours the course carries. For example, a course numbered 1123 should be interpreted as a freshman, or beginning, level course carrying three hours of credit. A course number beginning with zero indicates that the course does not carry University credit. A course number ending in zero indicates that the course carries variable credit.

5.2 Maximum Semester Credit Hour Load. All semester credit hours above 19 (nine during a summer session) are excessive and require written approval in advance of enrollment by the student's adviser and the dean of the college. Excessive hours will be limited to the number of semester credit hours 50 percent greater than the number of weeks in the applicable academic semester or summer session.

5.3 Adding Courses. Approval of the student's academic adviser is required for adding a course. The sixth class day of a regular semester or the third class day of a summer session is the last day a course may be added. A short course may be added no later than the first day of the short course.

5.4 Dropping Courses. At any time prior to the end of the second week of a regular semester or the first week of a summer session, or during the proportionate period for block or short courses, a student may drop a course, and no record of the course will appear on the student's academic record. After the deadline for dropping with no record, but prior to the end of the sixth week of a regular semester or the third week of a summer session, or proportionate periods for block or short courses, a student may drop a course and receive the grade of "W" (dropped). After the sixth week of a regular semester or the third week of a summer session but prior to the end of the 10th week of a regular semester or the fifth week of a summer session, a student may drop a course with the grade of "WP" (dropped passing) or "WV" (dropped failing) as assigned by the instructor. The grade of "WF" will be calculated in the grade-point average. After the 10th week of a regular semester, or the fifth week of a summer session, or proportionate periods for block or short courses, a student may not drop a course and shall be assigned only the grade of "A," "B," "C," "D" or "F," or (when appropriate) "I," "NP," "P" or "R" by the instructor at the end of the semester. (Exceptions to this policy may be allowed by petition due to extraordinary circumstances. A petition requires the signatures of the student's instructor, adviser and dean with the grade of "WP" or "WF" assigned by the instructor.) No course may be dropped without the approval of the student's academic adviser.

A student may not drop any course in which a formal charge of academic dishonesty is pending against the student. If the student is arrested or convicted of the charge of dishonesty, and the student requests that the charge be dropped, a hearing is required before the student's disciplinary hearing board. The grade of "WF" will be given. If the student is expelled, the instructor, adviser and dean with the grade of "WF" assigned by the instructor.

5.5 Concurrent Enrollment. A student who desires to earn credits concurrently at another institution or through correspondence, extension, advanced standing examinations, or DANTES (Defense Activity for Non-Traditional Education Support) examinations while enrolled for residence credit at OSU, must secure approval in advance from his or her dean if he or she expects this institution to accept these credits. Armed Forces personnel will be granted 60 days from the date of their first enrollment to establish, through DANTES examinations, advanced standing in subject matter that they mastered while in the Armed Forces.

5.6 Prerequisites to Upper-Division and Graduate-Division Courses. When no prerequisites are listed for courses numbered 3000 or 4000, it is understood that the prerequisite is 60 credit hours of work completed, or 45 credit hours of work completed with an overall grade-point average of 3.25. The prerequisite for courses at the 3000 or 6000 level is graduate standing in addition to any other prerequisites listed. Instructors may waive prerequisites when the student's background justifies. Prior approval of the instructor may be required in problems courses, independent study, internships, thesis and dissertation courses, and courses taught in a professional school.

5.7 Class Enrollment Maxima. The maximum numbers of students permitted to be enrolled in each section of a course is determined by the department head and can be increased or decreased only by the department head or dean.

5.8 Priority Enrollment. Certain groups of students are extended the option of enrolling prior to the time continuing students begin enrolling. Physically handicapped students are extended the option of priority enrollment. Those students actively participating in the University Honors Program are extended the option of priority enrollment. Current OSU students who accept University scholarships will be given priority in enrolling. Scholarships that qualify students for priority in enrolling in University Honors Program courses are also extended the option of priority enrollment (These are not to be considered inclusive, but the scholarship must require that the student perform a service for the University at a regular time specified by the University.)

Working part-time for the University or outside the University does not qualify the student for priority in enrolling in a course. Students enrolled in transfer agreements with other institutions may be granted priority in enrolling. Scholarships, President's Distinguished Scholars (PDS), President's Leadership Council (PLC) recipients, and participants in the OSREAcademic Scholars program are extended the option of priority enrollment. Certain students who have been unavoidably prevented from completing the remaining work of the course. The conditions, including appropriate time limits, for the removal of the "I" are indicated on the official transcript.

6. GRADES AND GRADING

6.1 Official Transcripts. All official transcripts of the student's academic record at OSU are prepared and released by the Office of the Registrar. Copies of transcripts from other institutions cannot be furnished.

6.2 Grade Interpretation. The quality of student performance in all classes is indicated by the following letter grades: "A," "B," "C," "D," "F," "I," "P," or "R." Descriptions of the grades are:

Grade "A" Superior performance
Grade "B" Good performance, but not superior
Grade "C" Average performance
Grade "D" Minimal passing performance
Grade "F" Failing

Grade "I" This grade is given to a student who satisfactorily completed the majority of the course work and whose work averaged "D" or better, but who has been unavoidably prevented from completing the remaining work of the course. The conditions, including appropriate time limits, for the removal of the "I" are indicated on the official transcript.
the course requirements, a second entry is posted beside the original "I" on the transcript to show the final grade for the course. The incomplete grade which is not removed within the allotted period becomes a permanent incomplete.

Grade "NP." This grade is given for unsatisfactory work (including that evaluated as "D") in courses on the pass-no pass grading system. Both credit hours and grade-points are ignored in calculating grade-point averages.

Grade "P." This grade is given for passing work in OSU courses approved for pass-no pass and pass-fail grading systems. Both credit hours and grade-points are ignored in calculating grade-point averages.

Grade "R." This grade is given to a student in a thesis or dissertation course (5000 and 6000) when the student has failed the course requirements, a second entry is posted beside the original "R" on the transcript to show the final grade. Grade "W." This grade indicates that the student dropped the course while doing passing work. Grade "WF." This grade indicates that the student dropped the course while doing failing work.

Mark of "AU." An "AU" indicates that the student audited the course, and requested that it be recorded on the academic record. An "AU" is not a grade and is not used in calculating grade-point averages.

Mark of "N" An "N" indicates that at the time grades were due in the Office of the Registrar, the final grade was not reported by the students' instructors. An "N" is not a grade and will be changed to the grade earned within a reasonable time. It is not used in calculating grade-point averages.

6.3 Grade-point System. The following grade-point system is used in calculating the grade-point average.

Grade "A." yields 4 grade points per semester credit hour.
Grade "B." yields 3 grade points per semester credit hour.
Grade "C." yields 2 grade points per semester credit hour.
Grade "D." yields 1 grade point per semester credit hour.

Grades "F," "L," "NP," "P," "R," "W," "WP" and "WI" yield 0 grade points per semester credit hour.

6.4 Grade-point Average Calculating. In calculating grade-point averages for all purposes other than for graduation, the total number of grade points earned is divided by the total number of hours attempted; for graduation, the hours and points of the lowest grade(s) in a repeated course will be ignored. The grade of "I," "NP," "P," "R," "WP" or the mark of "N" will not affect the overall grade-point average.

6.5 Freshman Progress Reports. The faculty will report grades for all freshmen on the dates as printed in the official University calendar. The date will normally be Friday of the eighth week of classes. Progress reports are made available to freshman students shortly after midterm. Copies are made available to the students' advisers and the students' deans.

6.6 Pass-No Pass Grading System. An undergraduate student may elect to take no more than four courses or 15 hours (whichever is greater) during his or her academic career with the pass-no pass grading option. The option is restricted to those students who:

a. have passed 28 or more semester credit hours;
b. have at least a 2.50 grade-point average in all hours attempted;
c. have met all of the prerequisites for enrollment in the course in question;
d. do not need the course in question for meeting any requirements for graduation or certification other than as a general (unrestricted) elective;
e. have approval of the academic adviser.

A student who chooses the pass-no pass option must do so by the last date on which a course may be added. Once the deadline has passed a student may not change the choice of grading systems. The pass-no pass option is not identified on the official class roll and thus is not known to the instructor. The instructor assigns a normal grade based on the quality of the work performed. The grades of "A," "B" and "C" are recorded on the transcript as "P"; the grades of "D," "F" and "WF" are recorded as "NP." "W," "WP" and "I" grades will be recorded without change. The pass-no pass grade will not affect the grade-point average.

Graduate students may enroll to take a course by the pass-no pass option. A course so taken cannot be used to meet graduate degree requirements.

6.7 Pass-Fail Grading System. Some courses are taught only on a pass-fail basis. Such courses are so designated in the "Course listings" section of the Catalog. Students who pass the course are awarded the grade of "P"; those who fail the course are awarded the grade of "F." 6.8 Grade Reports. Reports of the grades of all students are compiled and released shortly after the end of each semester by the Office of the Registrar. These reports are made available to the students, the students' advisers and the students' deans.

6.9 Correcting Grades Reported in Error. An instructor who reports an incorrect grade to the Office of the Registrar may request that Office to correct the grade. The request must be in writing and must have both the department head's and the dean's approvals. In no case will a grade be lowered after the student has been graduated.

6.10 Grade Appeals. A student may appeal a grade given by an instructor in cases in which he or she believes the grade awarded is inconsistent with announced grading policy. (See Student Rights and Responsibilities pamphlet or contact the Office of the Vice-President for Academic Affairs and Research.)

6.11 Honor Rolls. Undergraduate students completing all enrolled hours (not less than 12 semester credit hours in a regular semester or six in a summer session) with an overall (not cumulative) grade-point average of 3.20 or higher, and with no grade of "F" or "WF" in any course and no grade lower than a "C" are placed on the Dean's List of Distinguished Students. Students who have completed their courses under the same requirements as outlined above, with a grade-point average of 4.00 (i.e., all "A's") are placed on the Presidents list of Distinguished Students. The grades of "P," "W," or "WP," or grades earned through correspondence may not be included in meeting the minimum enrollment required or grade-point average required for an honor roll.

6.12 Academic Dishonesty or Misconduct. Academic dishonesty or misconduct is neither condoned nor tolerated at Oklahoma State University. Academic dishonesty is behavior in which a deliberately fraudulent misrepresentation is employed in an attempt to gain undeserved intellectual credit, either for oneself or for another. Academic misconduct is behavior that results in intellectual advantage obtained by violating specific directions, rules, or accepted academic standards, but without deliberate intent or use of fraudulent means. (See also Policy and Procedure Letters.)

7. GRADUATION

7.1 Graduation Requirements. The responsibility for satisfying all requirements for a degree rests with the student. Advisers, faculty members and administrators offer help to the student in meeting this responsibility.

7.2 Residence Requirements. A minimum of one-half of the upper-division requirements in a major field must be earned in residence at OSU. (See "College Enrollment Requirement") The last 18 hours completed by a student immediately prior to graduation must be taken in residence at this institution. Under special circumstances, permission may be given to allow three of the last 18 hours to be taken out of residence. Including the last 18 semester credit hours the student must have earned a total of not less than 30 semester credit hours at OSU taken in not less than two semesters, or one semester and one summer session, or three summer sessions. Courses taken as part of a required internship, such as in medical technology, may not be used in meeting this requirement In the College of Business Administration the last 30 hours must be earned in residence.

7.3 College Enrollment Requirement. A candidate for graduation must be enrolled in the college from which he or she wishes to receive the degree for at least two semesters, or one semester and one summer session, or three summer sessions immediately preceding graduation. For the award of a second baccalaureate degree, this requirement may be waived by the dean of the college awarding the second degree. (See "Residence Requirements" and "Second Baccalaureate Degree.")

7.4 Residence Waiver for Certain Premedical Students. Students who complete at least 94 semester credit hours in a recognized premedical science program and then transfer to a professional program leading to the doctoral degree at an accredited professional school of medicine, osteopathic medicine, veterinary medicine, dentistry or optometry will be awarded the appropriate baccalaureate degree upon the successful completion of 30 semester credit hours in basic medical science courses applicable to the OSU major. This option is available only to students who have completed all other degree requirements for the major and have taken at least the last 30 semester credit hours of work at OSU prior to transferring to a professional school. (See "Residence Requirements.")
7.5 **Minimum Hours** for Graduation. Each degree program requires a specific minimum number of semester credit hours for graduation, as indicated in the **Catalog**. No degree program shall require fewer than 120 semester credit hours for graduation. No student shall be permitted to graduate having completed fewer total hours than the number specified for that degree. At least 40 hours of upper-division course work shall be required in every baccalaureate degree program.

7.6 **Grade-point Average for Graduation.** A cumulative grade-point average of 2.00 or higher is required for graduation. (See “Grade-point Average Calculating.”) A cumulative grade-point average of 2.00 or higher must also be earned for the specified hours on the degree requirement sheet (including any electives), in addition to the 2.00 or higher grade-point average required by the department in the major or minor fields.

7.7 **Payment of Graduation Fees.** The graduation fee is due at the same time that tuition is due. Information on procedures and deadlines is given to students at the time they complete their enrollment.

7.8 **Requirements for Honors Degrees.** The individual colleges have specific requirements for degrees with honors. Students should consult the office of their academic dean for information. (See “Honors Programs” in the **Catalog**.)

7.9 **Diploma Application.** Each candidate for graduation shall file a diploma application in the Office of the Registrar within two weeks following enrollment in a regular semester or one week in a summer session in which the student wishes to be graduated.

7.10 **Presence at Commencement Exercises.** The University will hold one Commencement exercise each year at the close of the spring semester. Students who meet the graduation requirements the preceding fall semester and students who plan to meet the graduation requirements at the close of the following summer session are invited and encouraged to participate in the Commencement exercises. Students who plan to meet requirements during the summer session (whether they are currently enrolled or not) should contact the Office of the Registrar to participate in Commencement.

The University encourages all candidates for degrees to be present at the Commencement exercises. Attendance is not compulsory. However, candidates who cannot be present should notify the Office of the Registrar of the addresses to which diplomas can be mailed.

---

**Regents' Resolution on Disruption of the Educational Process**

A resolution of the Board of Regents for Oklahoma State University to further clarify existing student regulations. Section 1, "Legal Obligation of the Student," as it pertains to the disruption of the educational process, was adopted in the regular monthly meeting at Stillwater, Oklahoma, on July 11, 1970: Be it resolved by the Board of Regents of Oklahoma State University:

I. That this statement known as “Emergency Disciplinary Procedure in Cases of Disruption to the University’s Educational Process” containing the following provisions be enacted:

A. **Definition of Disruptive Conduct**

Oklahoma State University has long honored the right of the individual to free discussion and expression, of peaceful demonstration, and of petition and peaceful assembly. That these rights are a part of the fabric of this institution and of the nation as stated in the Bill of Rights is not questioned. They must remain secure. It is equally clear, however, that in a community of learning, willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated.

B. **Responsibility of the Student**

Any student, who willfully by use of violence, force, coercion, threat, intimidation or fear, obstructs, disrupts or attempts to obstruct or disrupt, the normal operations or functions of the University, or who orally or in writing advises, procures, or incites others to do so, shall be subject to dismissal from the University.

The following, while not intended to be exclusive, illustrates the offenses encompassed herein: occupation of any University building or part thereof with intent to deprive others of its use; blocking the entrance or exit of any University building or corridor or room therein; setting fire to or by any other means substantially damaging any University building or property, or the property of others on University premises; any possession or display of or attempt or threat to use or use of firearms, explosives, other weapons or destructive means or devices, except as necessary for law enforcement, in any University building or on the University campus; prevention of the convening, continuation or orderly conduct of any University class or activity or of any lawful meeting or assembly in any University building or on the University campus; inciting or organizing attempts to prevent student attendance at classes; and, interfering with or blocking normal pedestrian or vehicular traffic on the University campus.

C. **Responsibility of the President**

When it appears that there is a violation of Section I-A or I-B, it shall be the duty of the president (and he is fully authorized to act) to take all steps which the president deems advisable to protect the assumed and designated interests of Oklahoma State University and to see that its rules, regulations and policies are enforced. The president shall ensure that any person or persons found guilty after proper hearing shall be disciplined in accordance with the existing Oklahoma State University student disciplinary regulations.

In carrying out these duties, the president may call upon any member of the University administration, or any member of the faculty, and the president may call upon any agency of the University created to deal with cases arising under Section A. Action by any state or federal court shall not preclude the University from exercising its disciplinary authority.

D. **Responsibility of the Board of Regents**

The Board of Regents recognizes that by the Constitution and Statutes it has the power to make such rules and regulations for the management of the University as it may deem necessary and expedient, not inconsistent with the Constitution and laws of the state. While the Regents fully appreciate their obligations in this respect, they further recognize that in dealing with those offenses against the University defined in Section A hereof, they must impose the duty and authority of enforcing the policies set forth herein in the principal executive officer of the University—the president. It will be the responsibility of the Board of Regents to furnish all possible assistance to the president when requested by the president.

II. **Subject to the provisions of Sections I-A through I-D,** it shall be the duty of the president to exercise full authority in the regulation of student conduct and in matters of student discipline. In the discharge of this duty, delegation of such authority may be made by the president to administrative or other officers of the institution, in such manner and to such extent as may by the president be deemed necessary and expedient; provided, that in the discharge of this duty it shall be the duty of the president to secure to every student the right of due process.

III. The text of this resolution shall be printed in the "Student Regulations" section of the **Student Handbook** of the University and in the University **Catalog**.

---

**Degree Programs Offered**

The type of degree offered in each major is listed along with an indication of the college(s) in which each may be earned. (Some majors are offered with more than one type of degree, e.g., Bachelor of Arts *and* Bachelor of Science. Many have options within the major. See the department narrative for details.)

- B Bachelor's
- M Master's
- D Doctor's
- S Specialist

**Ag** Agricultural Sciences and Natural Resources
**A&S** Arts and Sciences
**Bus** Business Administration
**Ed** Education
**En** Engineering
**HE** Home Economics
**Gr** Graduate College
**OM** Osteopathic Medicine
**T** Technology
**VM** Veterinary Medicine
**Accounting** (B,M) Bus/Gr
**Aerospace Studies** (B) MS
**Agricultural Communications** (B,M,D) Ag/Gr
**Agricultural Economics** (B,M,D) Ag/Gr
**Agricultural Engineering** (B,M,D) En/Gr
Agriculture (M) Gr
Agronomy (B,M) Ag/Gr
Crop Science (D) Gr
Soil Science (D) Gr
Animal Science (B,M) Ag/Gr
Animal Breeding (D) Gr
Animal Nutrition (D) Gr
Dairy Science (M) Gr
Poultry Science (M) Gr
Applied Behavioral Studies (M,D) Gr
Applied Mathematics (M) Gr
Architectural Engineering (B,M) En/Gr
Architecture (B,M) En/Gr
Art (B) A&S
Aviation Sciences (B) Ed
Biochemistry (B,M,D) Ag/A&S/Gr
Biological Science (B) A&S
Botany (B,M,D) A&S/GI
Business Administration (M,D) Gr
Chemical Engineering (B,M,D) En/Gr
Chemistry (B,M,D) A&S/Gr
Civil Engineering (B,M,D) En/Gr
Computer Science (B,M,D) A&S/Gr
Construction Management Technology (B) T
Corrections (M) Gr
Counseling and Student Personnel (M,D,S) Gr
Curriculum and Instruction (M,D,S) Gr
Design, Housing and Merchandising (B,M) HE/Gr
Economics (B,M,D) A&S/Bus/Gr
Education
  Elementary Education (B) Ed
  Secondary Education (B) Ed
  Special Education (B) Ed
Educational Administration (M,D,S) Gr
Electrical Engineering (B,M,D) En/Gr
Electronics Technology (B) T
English (B,M,D) A&S/Gr
Entomology (B,M,D) Ag/Gr
Environmental Engineering (M) Gr
Environmental Science (M,D) Gr
Family Relations and Child Development (B,M) HE/Gr
Finance (B) Bus
Fire Protection and Safety Technology (B) T
Food, Nutrition and Institution Administration (B,M) HE/Gr
Food Science (M,D) Gr
Foreign Language
  French (B) A&S
  German (B) A&S
  Russian Language and Literature (B) A&S
  Spanish (B) A&S
Forest Resources (M) Gr
Forestry (B) Ag
General Agriculture (B) Ag
General Business (B) Bus
General Engineering (B,M,D) En/Gr
General Technology (B) T
Geography (B,M) A&S/Gr
Geology (B,M) A&S/Gr
Health (B) Ed
Health, Physical Education and Leisure (M) Gr
Higher Education (M,D,S) Gr
History (B,M,D) A&S/Gr
Home Economics (D) Gr
Home Economics Education and Community Services (M,D) Gr
Horticulture (M) Gr
Horticulture and Landscape Architecture (B) Ag
Hotel and Restaurant Administration (B) HE
Industrial Engineering and Management (B,M,D) En/Gr
Journalism and Broadcasting (B) A&S
Mass Communications (M) Gr
Leisure (B) Ed
Management (B) Bus
Management Information Systems (B) Bus
Management Science and Computer Systems (B) Bus
Manufacturing Systems Engineering (M) Gr
Manufacturing Technology (B) T
Marketing (B) Bus
Marketing Education (M) Gr
Mathematics (B,M,D) A&S/Gr
Mechanical Engineering (B,M,D) En/Gr
Mechanical Design Technology (B) T
Mechanical Power Technology (B) T
Medical Technology (B) A&S
Microbiology (B,M,D) A&S/Gr
Military Science (B) A&S
Music (B) A&S
Music Education (B) A&S
Natural and Applied Sciences (M) Gr
Occupational and Adult Education (M,D,S) Gr
Osteopathic Medicine (DO) OM
Philosophy (B,M) A&S/Gr
Physical Education (B) Ed
Physics (B,M,D) A&S/Gr
Physiological Science (M,D) Gr
Physiology (B) A&S
Plant Pathology (M,D) Gr
Political Science (B,M) A&S/Gr
Pre-veterinary Science (B) Ag
Psychology (B,M,D) A&S/Gr
Sociology (B,M,D) A&S/Gr
Speech (B,M) A&S/Gr
Speech Pathology (B) A&S
Statistics (B,M,D) A&S/Gr
Technical Education (B,M) Ed/Gr
Technology Education (B,M) Ed/Gr
Theater (B) A&S
Trade and Industrial Education (B,M) Ed/Gr
University Studies (B) All colleges
Veterinary Medicine (DVM) VM
Veterinary Parasitology (M,D) Gr
Veterinary Pathology (M,D) Gr
Wildlife and Fisheries Ecology (B,M,D) A&S/Gr
Zoology (B,M,D) A&S/Gr

Summary of degrees offered:

- Bachelor's 83
- Master's 68
- Doctor's 46
- Specialist 5
Science, technology, business, education, research and production are key elements in America's largest industry. In order to feed and clothe the five billion people of the world, the agricultural industry needs human capital—scientists and specialists with needed skills in molecular genetics, human nutrition, soil and water sciences, international marketing, systems analysis, agricultural engineering and other specialties.

The diverse careers available in agriculture offer many choices, and college graduates are needed to fill a wide variety of jobs in American agriculture. Graduates are needed in scientific research, marketing, financial services, and the processing of information, as well as production. OSU graduates can serve the agricultural industry needs human capital—scientists and specialists with national or international reputation for excellence in that respective discipline.

Academic Programs

Undergraduate Programs. The Bachelor of Science in Agriculture degree is offered in the following major fields of study: agricultural communications, agricultural economics, agricultural education, agronomy, animal science, biochemistry, entomology, forestry, general agriculture, horticulture and pre-veterinary science. The Bachelor of Landscape Architecture is also offered in the College of Agricultural Sciences and Natural Resources.

Graduate Programs. Graduate study is available in all academic departments in the College. In addition to the Master of Agriculture and Master of Science degrees which may be obtained through several departments, the Doctor of Philosophy degree (Ph.D.) may be earned in the following areas: agricultural economics, agricultural education (Ed.D.), agricultural engineering, animal breeding, animal nutrition, biochemistry, entomology, crop science, food science, plant pathology, and soil science.

High School Preparation and Admission Requirements

The high school preparation and admission requirements for the College are the same as the general University requirements. A solid background in English, natural science, and algebra is important preparation for the many academic programs in the various agricultural disciplines.

Transfer Students

Students who transfer from an accredited college or junior college must meet the general University admission requirements. All transferred courses are recorded on the OSU transcript; however, no more than 65 hours from a two-year college will be used to meet the College's degree requirements. Specific departmental requirements needed for graduation are determined by the department in which the student plans to earn his or her degree.

Scholarships

Students enrolled and entering the College of Agricultural Sciences and Natural Resources are annually awarded more than $250,000 in scholarships from the College and its departments. The following areas will be considered in the awarding of scholarships: financial need; scholastic standing in school or college; leadership qualities which have been shown in school, church, community or youth groups; sincere interest in agriculture.

Applications and additional information may be obtained from the Dean's Office, College of Agricultural Sciences and Natural Resources, Oklahoma State University, 136 Agricultural Hall, Stillwater, OK 74078. Applications for new students may also be obtained from local high schools. Applications are available beginning October 1.
Pre-veterinary Medicine Curriculum. The program in pre-veterinary medicine as offered in the College of Agricultural Sciences and Natural Resources includes all courses required for admission to the College of Veterinary Medicine.

A minimum grade-point average of 2.80 is required in the courses listed below:

English composition and technical writing (8 hours minimum): ENGL 1113 and 1213; ENGL 2333 (or 3323).

Chemistry (17 hours minimum):
1. General chemistry (8 hours minimum): CHEM 1314 and 1515 (or 1225; or 1215 and 1225).
2. Organic chemistry (5 hours minimum): CHEM 3015 (or 3053, 3153, and lab).

Physics (8 hours minimum): PHYS 1114 and 1214.

Mathematics (3 hours minimum): MATH 1513 (or any higher level mathematics).

Biological science (15 hours minimum). Courses must cover botany, genetics, microbiology and zoology. Each course, except genetics, must include laboratory work.

3. Genetics: (ANSI 3423 or AGRON 3554 or BISC 3024.)

Although these course requirements may be completed within two years, most pre-veterinary medicine students complete at least three years of preparatory course work or a bachelor's degree. For information as to required tests and application procedures, refer to the "College of Veterinary Medicine" section in the Catalog and the current Veterinary Medicine at Oklahoma State University brochure. Students are also encouraged to contact the assistant dean for academic programs in the College of Agricultural Sciences and Natural Resources.

Pre-veterinary Science Degree. A Bachelor of Science degree in Agriculture with a major in pre-veterinary science may be obtained after the completion of one year in the College of Veterinary Medicine. General education and other requirements for graduation in the College of Agricultural Sciences and Natural Resources must be met. Specific plans of study may be obtained from the Office of the Assistant Dean for Academic Programs, 136 Agricultural Hall.

General Education Requirements

The College of Agricultural Sciences and Natural Resources is committed to providing graduates both a depth of knowledge in their chosen field of study as well as breadth of knowledge outside their major. General education requirements are the same as those of the General University. Specific course offerings are given in the respective plans of study.

Graduation Requirements

General University requirements for graduation are stated elsewhere in the Catalog. In addition, specific requirements must be met for the Bachelor of Science and Bachelor of Landscape Architecture degrees in Agriculture. For the Bachelor of Science degree, the required total semester credit hours varies by department, major and option. The Bachelor of Landscape Architecture is a five-year program requiring 160 credit hours. A minimum of 40 semester credit hours and 100 grade-points must be earned in courses numbered 3000 or above.

Departmental Clubs and Honor Societies

Ag Communicators of Tomorrow
Aggie-X Club (agricultural economics)
Agriculture Ambassadors
Agriculture Student Council
Agronomy Club
Alpha Tau Alpha (agricultural education)
Alpha Zeta (College of Agriculture honor society)
American Chemical Society
American Society of landscape Architects
Associated landscape Contractors of America
Block and Bridle Club (animal science)
Collegiate 4-H
Collegiate FFA
Dairy Science Club
Food Industry Club
Forestry Club
Horticulture Club
National Agri-marketing Association
OSU Horsemann's Association
Pre-veterinary Medicine Club
Rodeo Association
Sanborn Entomology Club
Sigma Lambda Alpha (horticulture and landscape architecture)
Society for Range Management
Soil Conservation Society
XI Sigma Pi (forestry honor society)

Agricultural Communications

Professor and Head Kevin G. Hayes, MA

The modern agricultural complex of production and industry is so diverse and specialized that communication between the segments, as well as with the general public, is vital to the function of the whole. Education in agriculture and journalism to effectively provide such communication is the curriculum objective of the agricultural communications and journalism program.

Students may develop strong emphases in special-interest areas such as advertising, radio and television work, feature or newswriting and reporting, or research report writing, as well as develop a double-major program of study with specific departments of the College of Agricultural Sciences and Natural Resources.

Career opportunities are excellent in all areas of modern agriculture for the graduate with a Bachelor of Science degree in Agriculture with a major in agricultural communications.

Agricultural Economics

Professor and Head James E. Osborn, Ph.D.

Agricultural economics provides professional opportunities for students interested in solving problems in agricultural production and agribusiness, as well as solving problems in the broader areas of resource development, environmental planning, recreation, public policy and agricultural law.

Agricultural economics combines instruction in the agricultural sciences with education in the application of business and economic principles and tools to the science and art of private and public decision-making. Emphasis is placed on the management of agricultural production and marketing firms and upon decision-making and problem-solving guides relevant to public policy decisions.

Careers of agricultural economists reflect the broad base of the educational program, particularly as related to management. Careers in production and marketing include self-employment as farmers or ranchers, and management of agribusiness marketing firms such as processors, manufacturers and distributors of food products, chemicals and machinery. Other careers include employment by consulting firms, educational institutions and financial agencies in private and governmental research and service activities.

Major areas of course work in agricultural economics include farm management, agricultural marketing, agricultural financial management, resource conservation and development, agricultural pricing, agricultural policy and land appraisal. Courses in economic theory, statistics, computer sciences, mathematics and technical agriculture provide additional depth and breadth to the curriculum. An intensive advisement program and a broad range of elective courses permit the student to structure a program consistent with his or her personal interests, objectives and needs.

Eleven degree options or specialties are available to students majoring in agricultural economics: farm and ranch management, marketing and business, general science, pre-law, pre-veterinary business management, international agricultural marketing, and rural development and natural resources with three additional options offering double majors in agricultural economics and accounting, agricultural economics and computer science, and agricultural economics and agricultural education.

Graduate Programs

The department offers graduate work leading to the Master of Science, the Master of Agriculture and the Doctor of Philosophy degrees. Both thesis and non-thesis options are available at the M.S. level. Ph.D. students complete a teaching practicum in addition to the research thesis as a part of the degree requirements.

The graduate program stresses development of superior professional competence, suited to the demands of the modern business, academic, government and research environments. Advanced courses concentrate on economic analysis applied to problems of production, distribution and consumption of agricultural products. Courses in economic theory, econometrics, mathematical economics, statistics, and computer science are an integral part of the program. Problems of agricultural policy, natural resource use
and rural area development and planning are also important topics. The faculty gives direction and individual guidance to student research in marketing, production, management of agricultural enterprises, price analysis, land and water use and development, rural development and planning, agricultural finance, international trade, farm appraisal and agricultural policy. Specialization is achieved through course electives and research topics. Each student is guided in the preparation of the program of study by an advisory committee to assure that background or prerequisite work and the graduate plan will lead to the desired depth and breadth of proficiency.

Admission Requirements. Prerequisites to advanced training in agricultural economics are (1) the desire to understand and solve the complex and changing economic problems faced by agriculture and rural society, and (2) the desire and ability to learn methods of rigorous logical analysis. In addition, differential calculus, three semester hours of statistical methods, and 15 semester hours of agricultural economics and economics, including intermediate micro- and macroeconomic theory, constitute a minimum background for advanced study in agricultural economics. In certain cases, a part of this work can be taken after admission but will not count toward a graduate degree.

Acceptance by an adviser in the department is not required prior to official admittance to the departmental graduate program.

Graduate Programs

Graduate programs in the department of Agricultural Education are designed to (1) prepare students for entry into or advancement in teaching careers and (2) provide for further development of professional leadership skills in other educational careers in agriculture, agribusiness, government service, extension, adult education, and vocational-technical programs. An attempt is made to develop individual study programs to meet needs of both international and domestic students.

Advanced graduate studies are more specifically directed toward preparing graduates for careers in teacher education, administration, supervision, curriculum development and other areas of professional leadership in agriculture, educational experience in general education, specialized or technical agriculture, and professional education.

Candidates for the degree of Master of Science must complete a minimum of 21 semester credit hours of 5000-level courses or above. A total of 16 hours must be in education; 12 hours must be in agricultural education completed at this institution. At least ten hours must be completed in a minor area of specialization such as technical agriculture, education, or youth development. Other courses completed within the total 30 credit hours required may be chosen as free electives. Students working toward the Master of Science degree are required to complete a course in research design and a thesis as a part of the requirements for the degree.

An alternative is the Master of Agriculture in the emphasis area of agricultural education. The required credit hours of 5000-level courses, education courses, and specialization courses are the same as for the Master of Science degree. Three options are available: (1) a 32-hour option which includes a formal research report; (2) a 36-hour option which includes a creative component; and (3) a 36-hour option which includes a professional internship.

The Doctor of Education degree with a major in agricultural education is offered by the Department of Agricultural Education as a member of the Teacher Education Group V of the Graduate Faculty. A minimum of 20 hours must be completed in agricultural education, education, and psychology. In addition, at least 20 semester hours must be completed in an area of specialization such as agricultural extension, technical agriculture, educational administration, curriculum development, adult education, or behavioral sciences. Ten hours of credit will be earned for the completion of a thesis. The remaining ten hours of course work within the 60-hour total requirement may be selected as free electives. Applicants for admission to the doctoral program must have at least three years of successful agricultural education teaching or similar professional experience.

In addition to the above programs, the department also cooperates with the School of Occupational and Adult Education at the specialist and doctoral levels.

Agricultural Engineering

Professor and Head David R. Thompson, Ph.D.

The Department of Agricultural Engineering is administered jointly by the College of Agricultural Sciences and Natural Resources and the College of Engineering, Architecture and Technology. Agricultural engineers are professional people who generate and adapt engineering knowledge and technologies for the efficient and effective production, processing, storage, handling and distribution of agricultural, food, and other biological products, and the management of natural resources.

Students interested in a degree in agricultural engineering may initially enroll in the College of Agricultural Sciences and Natural Resources or the College of Engineering, Architecture and Technology. If they elect to enroll in the College of Agricultural Sciences and Natural Resources, they should request an agricultural engineering adviser and transfer to the College of Engineering, Architecture and Technology by the end of their first semester. Agricultural engineering students study engineering, physical, mathematical, biological, and agricultural sciences. Agricultural engineering courses apply mathematics, basic engineering and science to create and design new systems and equipment for agricultural and biological production and processing. Social studies and humanities prepare students to work with people; these studies are important because the agricultural engineer early in his or her career assumes supervisory and management responsibilities. Computer use is emphasized for simulation, control, analysis and design.

Agricultural engineering courses for juniors and seniors integrate the engineering sciences with agricultural and biological sciences and prepare students to design solutions to real problems of society. Students work both as individuals and in teams to solve design problems provided by industrial firms who also hire agricultural engineering graduates. Students receive specialized design experiences in one or more of the following areas: hydrology and water resources, including flood control, irrigation, and water supply; machinery, instruments and controls for farming and ranching, food processing and packaging, and production of biotechnology products; and systems for efficient production, processing, handling and storage of agricultural and biological products.

A wide variety of employment opportunities are available for agricultural engineers in industry, public service, and education. Some of these opportunities include positions in governmental agencies; agricultural consulting; machinery, equipment, and facility design, manufacturing and installation; agricultural chemical manufacturing and application; production, processing and transportation of food, feed and fiber products; management of the application of electrical power; and engineering aspects of the environment.
Other opportunities include university teaching, research and extension; positions as engineering editors, industrial consultants and positions in foreign service. The United States and most large companies have agricultural engineers in foreign countries.

In addition to the 76 semester credit hours of common requirements for engineers, agricultural engineers take courses in electronic application, instrumentation, watershed hydrology, flood control, drainage and irrigation, environmental engineering, farm power and machinery, design structures and agricultural process food engineering. The agricultural engineering program is accredited at the basic level by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Graduate Programs

The School of Agricultural Engineering offers three programs leading to post-baccalaureate degrees: Master of Agricultural Engineering, Master of Science and Doctor of Philosophy. The Master of Agricultural Engineering program places emphasis on design and internship in engineering experience to prepare the graduate for practice in the engineering profession.

Facilities for design and research are available in processing of agricultural products, plant and animal environment, energy in agriculture, microelectronics, agricultural power and machinery, pesticide application, soil and water resources development, irrigation, hydraulics, and hydrology.

Research projects are supported by the Agricultural Experiment Station. A well-trained faculty, many of them registered professional engineers with research, consulting and design experience, guide the graduate students’ activities and help plan programs to meet the students’ needs. Graduate students prepare designs and specifications for special equipment and facilities needed to carry out their work. They are expected to demonstrate, by thesis and supporting research or by design, the ability to organize a design problem or an experimental investigation, carry it to completion and report the results.

Admission Requirements. Admission to either the Master of Science or Doctor of Philosophy degree program requires graduation from an engineering curriculum accredited by the Accreditation Board for Engineering and Technology.

Admission to the Master of Agricultural Engineering degree program is permitted for students who meet the prerequisites as stated in the College of Engineering, Architecture and Technology section of the Catalog, under "Master of Engineering." The departmental graduate committee will evaluate the applicant’s credentials to determine equivalency and specify requirements to overcome deficiencies. A student must be accepted by an adviser in the Department prior to official admission to the graduate program.

Degree Requirements. A candidate for any of the degrees listed above follows an approved plan of study which must satisfy at least the minimum University requirements for that particular degree.

Agriculture (General)

Associate Professor and Assistant Dean C. Wesley Holley, Ed.D.

The general agricultural program of study is designed to provide students the opportunity of obtaining a broad education in agriculture rather than the more specialized study typical of departmental programs. Faculty serve as academic advisers.

Students select general agriculture as their major for one of two reasons:

1. Students undecided on a major may elect to take the general agriculture program, as it provides the opportunity to investigate various majors and options. Courses taken in the general agriculture option apply to the B.S. degree programs in Agriculture, as well as degree programs in some other colleges. Transfers from one major to another may be made at any time. Career information and guidance is available from faculty advisers as well as the Agricultural Career Development Office, 136 Agricultural Hall.

2. Students wanting a broad-based degree program may do so through the general agriculture program. This option allows students to prepare for careers that require a broad background of understanding of the modern agricultural complex.

The general agriculture curriculum may be pursued in any department in the college and allows students to select courses of special interest to them in relation to the work they plan to do. Basic courses in general education, the sciences and business are required, along with over 40 credit hours of electives, in order to complete requirements for a Bachelor of Science degree in Agriculture.

Graduate Programs

The Master of Agriculture degree is designed for students interested in graduate professional training with a strongly applied research orientation. The degree is offered in the following areas of emphasis: agricultural economics, agricultural education, agronomy, animal science, entomology, forestry, horticulture and landscape architecture, and plant pathology.

Purpose. The purpose of this degree is to provide a program which will give additional specialization in technical fields, as well as increased breadth of training. Students who are interested in working toward the Ph.D. degree should follow the regular Master of Science degree program.

Character of Program. This program will provide a greater breadth of study than the Master of Science program. Emphasis will be given to practical application of the technical aspects of the discipline as well as discipline interrelationships. The principal focus, however, is on an applied research concept and a broader program than is normally available with the specialized research degree.

Admission Requirements. A baccalaureate degree in agriculture or a related field is required for admission. The candidate must meet requirements for acceptance into the Graduate College and be recommended by the departmental graduate committee responsible for the program.

Degree Requirements. The requirements for this degree are the same as those listed in the Catalog, under "Graduate College," section, under "The Master's Degree."

In addition, each candidate approved for study under this program will be assigned an adviser or advisory committee with whom he or she will develop a plan of study in accordance with guidelines established in the department. An approved preliminary plan of study must be approved by the associate dean for academic programs and must be filed in the Graduate College Office prior to enrollment for the 17th credit hour. Departmental comprehensive final examinations will be required of all Master of Agriculture candidates.

Degree Options. Option A "Requirements. A total of 32 approved semester credit hours of work, including an approved report having a credit hour value of not more than two semester hours, is required.

Option B "Requirements. A total of 36 approved semester credit hours of work is required and must contain a creative component. No report is required.

Option C "Requirements. A total of 36 approved semester credit hours of work, including six hours of credit for a professional internship, is required. The internship includes professional practice and a report.

Agronomy

Professor and Head Robert Westerman, Ph.D.

Agronomy is the science of soil management and the production of field crops and forages. Undergraduate options include biotechnology, business, crop science, plant protection, range management and soil science. Each of these options provides a thorough preparation in the sciences relating to its specialization.

Modern agricultural production requires a highly technical approach to problems such as soil and water conservation, crop and range improvement and management, prevention and abatement of agricultural sources of environmental pollution, and judicious use of agricultural chemicals. In the vast field of agribusiness, technical preparation in agronomy is essential in supplying agricultural producers with up-to-date information, as well as improved seed, fertilizers, management systems and pesticides. Processing, distribution and marketing of food, fiber and feedcrops require an integration of production technology with economics at all levels. Agronomists are in demand for research and marketing positions in universities, industry and government.

Each of the areas of study is designed to permit students of varying backgrounds and experiences to attain a level of preparation commensurate with their capabilities and motivation. There are no specific prerequisites.

Careers in agronomy include farm or ranch operation or management; land appraisal for banks or loan companies; crop consulting; technical sales and service for seed, fertilizer or agricultural chemical supply companies; federal employment in soil and range conservation; research positions as plant breeders, soil science chemists and weed control specialists with

OKLAHOMA STATE UNIVERSITY
federal or state experiment stations or ranch operations, or a double major in agricultural education. In addition, students have the opportunity to concentrate their studies on one of the animal groups (meat animals, dairy, horses or poultry). Internship programs providing three to six months of campus work experience are available in all options. Participation in undergraduate clubs (Block & Bridge, Dairy Science, Horsemen’s Association or Food Industry clubs) or judging teams (livestock, meat, horses, dairy cattle, dairy foods or poultry) improves social, communication and leadership skills.

Students interested in veterinary medicine may complete the pre-veterinary medicine requirements at the same time they are working toward a B.S. degree in animal science. In addition, pre-vet students gain valuable insight into the care and management of animals throughout the animal science curriculum.

Undergraduate students follow a similar curriculum during the first two years which includes basic courses in the physical, biological and social sciences, and a series of introductory courses in agriculture and business. Upper-class students take a basic core of advanced animal science courses including genetics, physiology, nutrition or food science. As seniors, students complete a series of advanced animal science courses which are designed to apply knowledge obtained in previous courses to livestock or food production systems. Every opportunity is taken in teaching to utilize the excellent herds, flocks and processing facilities owned or operated by the Department.

Students completing a degree with a major in animal science have a wide choice of challenging careers including ownership or management of farms, ranches, feedlots; employment with state and federal agencies concerned with inspection, grading or regulation; sales and service positions with companies involved with feeds, pharmaceuticals or other livestock products; opportunities in agricultural extension or teaching; and work in the processing, distributing and merchandising of dairy, poultry and meat products.

Students who earn the master’s or doctorate can look forward to careers in teaching, research or extension with universities, the U.S. Department of Agriculture or private industry.

Graduate Programs

The Department of Animal Science offers graduate work leading to the Master of Science degree in animal science, dairy science, poultry science, and food science. Research work at the M.S. level is available in the areas of animal breeding (genetics), animal nutrition, animal physiology or food science (meat or milk products). A Master of Agriculture degree in the emphasis area of animal science is also available. The department offers programs leading to the Doctor of Philosophy degree in animal breeding, animal nutrition and food science.

Prerequisites. Admission to the graduate program requires a B.S. degree in animal science or in a closely related field. Applicants should have completed basic courses in agronomy, biology, chemistry and mathematics, required of undergraduate majors. Deficiencies in fundamental course requirements will be met by the student with the direction of the students advisory committee. Applicants must be accepted by an adviser in the department prior to official admission.

Degree Requirements. Students must follow approved plans of study which meet the minimum University requirements for the respective degrees they are pursuing.

The Master of Science degree in agronomy may be earned by utilizing one of two plans:

Plan I-Thesis, minimum of 30 credit hours of course work, including six credit hours of AGRON 5000, master’s thesis.

Plan II-Formal report (non-thesis), minimum of 32 credit hours of course work, including two credit hours of AGRON 5000, master’s thesis.

The Master of Agriculture degree may be earned by utilizing one of three options:

Option A-Formal report (non-thesis), minimum of 32 credit hours of course work, including two credit hours of AGRON 5000, master’s thesis.

Option B-Minimum of 36 credit hours of course work and a creative component.

Option C-Minimum of 36 credit hours of course work including six hours of credit (AGRON 5230, Research) for a professional internship. The internship will consist of professional practice and an informal report. Internships for students with previously established vocations and career experience must be in areas other than the specific vocational field of the students.

The degree plans of study for the Doctor of Philosophy degree in crop science or soil science are developed individually for each candidate. In general, they must include 10 credit hours of agronomy courses at the 5000 level or above (excluding thesis), and meet certain requirements in basic disciplines such as statistics, mathematics, botany, and chemistry. Study of a foreign language is not required but can be incorporated if the student and advisory committee feel that it is desirable.

Animal Science

Regents Professor and Head
Donald G. Wagner, Ph.D.

The Department of Animal Science offers professional training at both, the undergraduate and graduate levels. The undergraduate program leads to the Bachelor of Science in Agriculture degree. Graduate studies culminate in the Master of Science, Master of Agriculture (emphasis in animal science) or the Doctor of Philosophy in nutrition, animal breeding, animal reproduction or food science.

Animal science is concerned with the science, art and business of the production of beef cattle, dairy cattle, horses, poultry, sheep and swine. An animal scientist is concerned with the application of the principles of the biological, physical and social sciences to the problems associated with livestock production and management.

Animal science is also concerned with the products of food animals: meat, dairy foods and eggs. The food industry is one of the largest and most important industries in the United States. Students can gain expertise in the processing, quality control and marketing of meat, dairy and poultry products.

Undergraduate students may elect an option in the areas of animal biotechnology, business, food industry, food science, livestock merchandising, pre-veterinary animal science, production, and ranch operations, or a double major with agricultural education. In addition, students may recognize specific undergraduate deficiencies and require measures to attain proficiency.
Biochemists are concerned with living things. They must acquire some knowledge of the biological sciences. Since a biochemist's tools are the physical sciences, he or she must receive sound training in mathematics, physics and chemistry.

Challenging positions for well-trained biochemists are available in colleges and universities, state and federal laboratories, research institutes, medical centers and in an increasing number of industrial organizations, particularly the pharmaceutical and food industries. Biochemists are involved with research on the chemistry of processes occurring in plants, animals, and various microorganisms, and with the discovery and development of antibiotics, vitamins, hormones, enzymes, insecticides and molecular genetic techniques.

At the undergraduate level a major in biochemistry administered by the Department of Biochemistry is available through either the College of Agricultural Sciences and Natural Resources or the College of Arts and Sciences. An honors program is available. The curriculum provides a broad background in chemistry and biological science and permits flexibility in meeting particular interests of the student. Courses in biochemistry are based on general, organic and analytical chemistry. The biochemistry curriculum provides students with sufficient training in the basic sciences of mathematics, physics, chemistry and biology to meet the needs for graduate study in most fields of modern science related to agriculture or medicine. The curriculum is excellent for preprofessional students of medicine, dentistry and veterinary medicine.

Graduate Programs

Because many of the opportunities in biochemistry require advanced training, a major part of the program in the Department of Biochemistry is concerned with its graduate program leading to the M.S. or Ph.D. degree. This graduate program is an integral part of extensive basic research activities in the Oklahoma Agricultural Experiment Station. These research activities provide opportunities for part-time employment of undergraduate majors to improve their professional competence.

Prerequisites. Although the B.S. in chemistry or biochemistry is preferred, students with strong backgrounds in other biological or physical science disciplines are eligible. Individuals not having at least eight semester credit hours in each of organic and physical chemistry and calculus must take appropriate undergraduate courses to make up deficiencies. Entering graduate students are given placement examinations to assess their chemistry background; if performance is unsatisfactory they are asked to repeat an appropriate undergraduate course without graduate credit.

Degree Requirements. A more detailed description of the graduate study program in biochemistry is available from the department upon request. The requirements listed below complement the general graduate requirements described in the "Graduate College" section of the Catalog. After the first semester, continuous attendance and participation in the departmental seminar is expected.

The Master of Science Degree. Twenty-four credit hours of formal graduate courses are required, including BIOCH 5753 (or 4113), 5853, and 5930. In addition, a student must present an acceptable research thesis (six hours) and pass a final oral examination covering it and related material. Research advisers are selected at the end of the first semester.

The Doctor of Philosophy Degree. The course requirements are determined with the aid of the student's graduate advisory committee. Usually they follow these guidelines: total of 30-40 credit hours of formal graduate course work which includes all the courses listed for the M.S. degree, at least four of the advanced graduate courses in biochemistry (6000 level) and two offerings of Special Topics (6820). Additional course requirements, appropriate to the student's interests, are determined by the advisory committee. The advisory committee is selected at the end of the second semester. Each student will take a series of cumulative examinations beginning in January of his or her first year. A more comprehensive qualifying examination is also given, usually at the end of the fourth semester of graduate study.

One year of a foreign language at the college level is required. The student must present, and defend in a final oral examination, an acceptable research thesis which contains a substantial original contribution to the field of biochemistry. The department offers research experience in a variety of areas of biochemistry.
the student with a research career in mind, course work in forest science is available. Requirements for a B.S. degree include the successful completion of a nine-week summer camp and a total of 140 credit hours of course work. The summer camp is scheduled to follow the sophomore year and is held annually in different forest settings. Past summer camps have been held across the U.S. from Maine to Oregon, from Montana to Florida, and even in Brazil. Students learn field forestry skills and observe state-of-the-art operations.

The Department of Forestry maintains two research stations in southeastern Oklahoma in the midst of the Quachita National Forest, and industrial timber holdings. Oklahoma has an active and progressive forest industry with one of the most modern highly mechanized timber harvesting systems in the world. One of the largest paper mills in the southern United States is located in the pine-oak forests of southeastern Oklahoma. Oklahoma forests are also prized for their clean water and recreational benefits. Field trips to this area comprise part of the instruction in many forestry courses.

Graduate Programs

The Department of Forestry offers instruction leading to Master of Science degrees in forest resources and environmental science for students interested in graduate training with a research orientation. The Master of Agriculture degree in the emphasis area of forestry is offered for students interested in non-research graduate training in forestry. Programs of instruction and research leading to a Doctor of Philosophy degree are available through cooperating departments, or in environmental science, with an adviser from the Department of Forestry.

Instructional programs are designed to serve the needs of individual students and allow concentration in the areas of: biometry, ecology, physiology, economics, genetics and tree improvement, silviculture, management, and watershed management. The prerequisite for graduate study in the Department of Forestry is a bachelor's degree in forestry or a related field with an overall undergraduate grade-point average of 3.00 ("B" average). Applicants for financial aid are required to submit scores from the Graduate Record Examination for full consideration. Students without a bachelor's degree in forestry must take an approved core of undergraduate forestry courses for the Master of Science in forest resources and the Master of Agriculture degree.

Students preparing for the Master of Science in Forest Resources are required to complete 30 credit hours of course work including six hours of "Research and Thesis" (FOR 5000) (Plan I). Students preparing for the Master of Agriculture degree may elect to meet the requirements of Options A, B or C. (See the "Graduate Programs" section of "General Agriculture.")

A student must be accepted by an adviser on the Graduate Faculty in the department prior to official admission to the program.

The training that the student obtains is related to the specific area of emphasis that is chosen. Regardless of one's interest, objectives, or area of emphasis, a good knowledge and understanding of horticulture is a necessity. A student can receive a Bachelor of Science (B.S.) degree and choose from the two following options:

- **Horticulture** provides the training and expertise for production of fruits, nuts, vegetables, nursery crops, flower crops, etc. Training can be general, have a business or science orientation, or be chosen to emphasize a particular commodity area of horticulture.
- **Turf management** provides the training for turfgrass production and for management of turfgrass in golf courses, in parks, home landscapes, and along highways.

After the B.S. degree is completed, a qualified student may choose to pursue a graduate degree, specializing in any option.

- **Landscape architecture** is the art of design, planning or management of the land and arrangement of natural and man-made elements thereon through application of cultural and scientific knowledge. It is also concerned with resource conservation and stewardship to the end that the resultant environment serves a useful and enjoyable purpose.

There are two options in the landscape area:

- **Landscape architecture** is the study of art, business, construction, design, ecology, engineering and horticulture in a five-year professional program leading to the Bachelor of Landscape Architecture (B.LA) degree. Typical employers include landscape architecture firms, architectural-engineering firms and government agencies dealing with land planning, urban planning and design, or parks and recreation.

In an effort to maintain an effective balance between students, faculty, and facilities, enrollment in the fourth and fifth years of the program is limited to 25 students each. Students will be evaluated during their third year by the faculty to select the most qualified candidates based upon academic achievement and professional potential. Minimum requirements may vary each year; however, a student must have completed a minimum of 60 credit hours with "C" average or above in all courses required as prerequisites to the last two years of the B.LA program. Landscape contracting is a four-year study leading to the Bachelor of Science in Agriculture degree. It emphasizes the implementation and management phases of landscape development.

Course work includes basic landscape architectural design, construction technology, business and horticulture. Graduates are employed by landscape nurseries, contracting companies, design/building firms and landscape maintenance companies.

Graduate Programs

The department offers work leading to a Master of Science degree and a Master of Agriculture through the study of flower crops, fruit and nut crops, vegetable crops, ornamental nursery crops, and turf. The department also offers a Ph.D. in crop science.

Prerequisites. The department may require credit hours in horticulture and related technical subjects.

Prior to admission to the program, all applicants for advanced degrees must be approved by the head of the department and a faculty member who will serve as the adviser. The program of study and research will be directed by the student's graduate adviser and advisory committee.

Professor and Head Larry J. Littlefield, Ph.D.

Plant pathology is a broad discipline that ranges from basic studies of physiological and genetic aspects of plant diseases to the development of practical plant disease controls. It encompasses the science required to understand the causes of plant diseases as well as the art of preventing or controlling these diseases. Thus, the plant pathologist must have knowledge of plant biology as well as practical plant culture. Plant pathology, as a discipline, is actively involved in the newly emerging field of biotechnology.

Graduates in plant pathology (Ph.D.-level individuals) commonly find employment as research scientists in universities, the government (U.S. Department of Agriculture), industry or with various international development agencies. Graduates with the M.S. degree often work as research technicians in industries, universities or government laboratories or as sales or technical representatives in the agrichemical or plant breeding industries.

Professor and Head Dale M. Maroneck, Ph.D.

Horticulture is the science and art associated with the culture and production of flowers, trees, shrubs, turfgrass, vegetables, fruits and nuts. It also includes the proper use and maintenance of plants in the landscape. Thus, horticulture is involved with the production of a significant part of the food supply and provides a major source of the beauty in and around homes, cities, parks, highways, golf courses and other public areas.

Today, horticulture requires highly trained and capable people to help meet the food demands of society and to be involved in activities that lead to a better quality of life.

Studies in horticulture cover a wide variety of plants and subjects. Factors such as nutrition, irrigation, genetics, propagation, control of flowering, and fruit and seed production are considered in their relationship to culture, production, harvesting and storage. Students can prepare themselves for careers in public grounds administration, horticulture business, production, teaching, extension and research.

Professor and Head Dale M. Maroneck, Ph.D.
To qualify for graduate study in plant pathology an undergraduate student should obtain a solid background in the basic sciences, especially biology and chemistry, math, English and communication skills.

In order to become a fully trained plant pathologist, one or more graduate degrees in plant pathology are required. The Department offers both M.S. and Ph.D. programs with opportunities to specialize in a wide range of basic or applied research fields.

**Graduate Programs**

The Department offers programs of study and research leading to the Master of Science, Master of Agriculture in the emphasis area of plant pathology, and Doctor of Philosophy degrees. Programs are concerned with the cause, development, and control of plant diseases. Research problems are involved with on-going projects in the Oklahoma Agricultural Experiment Station, which include investigations on disease control (chemical, cultural, biological, and genetic) soil-borne diseases, virology, phytobacteriology, nematology, genetics, host-parasite physiology, and application of biotechnology and molecular genetics to basic plant disease research. Individual programs can be developed toward basic research or can be developed to provide a broad practical background in plant health and pest management.

**Admission Requirements.** It is desirable that applicants have a strong background in biological or agricultural sciences. All requirements of the Graduate College must be satisfied by each applicant. In addition, applicants for graduate programs in plant pathology are required to take the Graduate Record Examination and to submit their scores with their applications and transcripts. Approval for admittance will be determined by the departmental screening committee and the department head. During the first semester of enrollment, each student, after council with the department head, will select a faculty adviser. Each graduate program is under the direction of the major adviser and a selected faculty committee and is adapted to the needs of the graduate student. There is no graduate credit for courses below the 4000 level. Each student will follow a program of study and research approved by his or her committee and, except for the Master of Agriculture degree, must submit an approved thesis.
The College of Arts and Sciences not only offers a wide variety of programs in teaching, research and extension, but also underpins and reinforces all the other programs of the University. Apart from strong programs in the natural and social sciences and in the liberal and fine arts, the College provides a number of more specialized and interdisciplinary strengths, and a variety of professional and preprofessional training. The College's 22 departments and two schools offer 51 degree programs at the bachelor's level, and in conjunction with the Graduate College, programs at the master's and doctoral levels. The Department of Economics in the College of Business Administration offers B.A. and B.S. degrees through the College of Arts and Sciences. The Department of Biochemistry in the College of Arts and Sciences offers BA and B.S. degrees through the College of Business Administration and the Graduate College.

Apart from strong programs in the natural and social sciences and in the liberal and fine arts, the College provides a number of more specialized and interdisciplinary strengths, and a variety of professional and preprofessional training. The College's 22 departments and two schools offer 51 degree programs at the bachelor's level, and in conjunction with the Graduate College, programs at the master's and doctoral levels. The Department of Economics in the College of Business Administration offers B.A. and B.S. degrees through the College of Arts and Sciences. The Department of Biochemistry in the College of Arts and Sciences offers BA and B.S. degrees through the College of Business Administration and the Graduate College.

The College of Arts and Sciences provides academic advising for a wide variety of programs including: law, medicine, social work, nursing, optometry, veterinary medicine, graphic arts, teaching, writing, foreign service, urban and regional planning, journalism, public service, radio/TV, advertising, public relations, medical technology, military science, public affairs, corrections, child services, interpersonal communications, and fine and performing arts.

Academic Advising
The Office of Student Academic Services. The academic advising process in Arts and Sciences is coordinated by the Office of Student Academic Services. The counseling staff in Student Academic Services advises freshmen, undecided and pre-health profession students. Departmental advisers provide advising for students who have declared their majors.

The Student Academic Services staff also represents the College in the University's on-campus recruiting activities and represents the dean in such matters as petitions for extension and correspondence, change of major or college, and student withdrawals. Services also include graduate certification, information about college programs and requirements, and referral of MS students to campus support services.

Bachelor of Fine Arts (B.F.A.) : art (graphic design and studio).
Bachelor of Music (B.M.) : music (elective studies in business; performance; music education (instrumental/vocal certification).

Second Bachelor's Degree. To secure a second bachelor's degree, a student must complete a minimum of 30 semester credit hours in addition to those required for the first degree. The number actually needed depends on what a student must do to satisfy all the requirements for the second degree.

A student seeking a second degree in the College of Arts and Sciences at OSU should ask his or her second adviser to submit a degree plan for the second degree, clearly headed "second degree," and showing how all the requirements of the second degree are to be satisfied. The plan should also state the major, date of award and total credit hours of the first degree, and indicate those courses which represent the minimum of 30 additional hours. The second degree plan should be sent to the College of Arts and Sciences Office of Student Academic Services within two weeks after the student's last enrollment.

Students wishing to complete degrees in two different colleges at OSU should consult with the offices of student academic services of both. Concurrent enrollment in two colleges is possible, but a student must be enrolled in a college for at least two semesters before becoming eligible for a degree from that college.

Second Majors and Minors. If a student majoring in one field also completes the specified requirements for a "major" or a "minor" in other fields, the additional majors or minors may be noted on the student's transcript. Such specified requirements may be obtained from the department in which the second major or minor is sought. The student should, at the end of his or her senior year, ask the department head in the second major or minor to submit the request to the Office of Student Academic Services in the College of Arts and Sciences.
**Special Academic Programs**

**Honors Programs.** The Arts and Sciences Honors Program is the oldest and largest program of its kind at Oklahoma State University. It provides outstanding students with the opportunity to study, conduct research, and interact with faculty and other honors students in a variety of settings designed to assist talented students who seek to make the most of their educational opportunities. Honors sections of many general education courses allow participating students the benefits of small classes taught by experienced members of the faculty, thus combining the extensive resources of a major comprehensive university with personal faculty attention to each student. Special honors seminars provide coverage of topical issues each semester in formats which encourage the exchange of ideas through discussion and writing. Honors seniors complete the requirements of the Honors Program by undertaking a minor honors thesis (or similar creative activity), and honors seniors also may earn honors credit by enrollment in graduate seminars.

Three Honors Program awards are available to MS students-The General Honors award, the Departmental Honors award in the student's major field, and the bachelor's degree with honors (which is earned by completing both General and Departmental Honors Program requirements). These awards are reflected on the student's transcript, and a special honors diploma is awarded to students completing the requirements for the bachelor's degree with honors.

Priority enrollment is provided for students who are active in the MS Honors Program. This allows honors students to select honors courses and other courses taught by outstanding faculty at the earliest possible date each semester and facilitates the development of class schedules tailored to the special needs of honors students.

Eligibility for admission to the MS Honors Program as a first semester freshman is based on the student's composite ACT score of 27 or higher. Students with scores of 25 or 26, combined with a high school grade-point average of 3.75 or higher, may be admitted at the discretion of the director. Later entry is permitted on the basis of cumulative grade-point average. Transfer students are eligible on the basis of the required ACT score and cumulative grade-point average.

**Bachelor of University Studies.** For the student who has an academic objective which cannot be fulfilled by any of the regular degree programs, an individual plan of study fitted to the particular needs of the student may be devised with the approval of the dean and the Office of the Vice-President for Academic Affairs and Research. At least 45 semester hours must be completed after the plan has been approved.

**Area Studies Certificates.** Certificates in International Studies. Students at OSU are encouraged to add an international aspect to their education by earning an Area Studies certificate. Certificates are offered in Asian, African, Latin American, and Russian and Eastern European Studies.

The Area Studies certificate is granted upon successful completion of all requirements for a bachelor's degree in the student's major and of the following certificate requirements: (1) six credit hours of second-year level instruction in a language of the area chosen; (2) five upper-division courses (15 credit hours) pertinent to the area chosen; (3) MS 3603, "Areas Studies Colloquium" (three credit hours).

For further information and advice inquire at the Center for Global Studies, 208 Life Science East.

**Ancient and Medieval, Native American, and Women's Studies.** A certificate in Ancient and Medieval Studies is also available as well as certificates in Native American Studies and Women's Studies. Further information may be obtained from the Office of the Dean of the College of Arts and Sciences.

**High School Teaching Preparation.** Students earning degrees in the College of Arts and Sciences may, by completing certain courses, receive state licensure for teaching in the secondary schools. Full details may be obtained from departmental advisers or from the Office of Teacher Education in the College of Education.

Students who wish to qualify for teaching licensure should consult as early as possible with the adviser in their field of interest, and should apply for admission to teacher education as soon as possible, preferably before the end of their sophomore year.

It is usually possible to qualify for teaching licensure and the bachelor's degree within the 127 semester credit hours required for graduation. When it is not possible, students may meet the requirements for the degree and then complete the licensure requirements by taking additional courses.

Full teaching certification is awarded by the State Department of Education when the licensed candidate has successfully completed a period of teaching in a school system.

**Preprofessional Programs in the Health Professions.** Premedicne, Pre-osteopathic Medicine, Pre-dentistry, and Pre-verteinary Medicine. (See also "Pre-verteinary Option" in the "College of Agriculture" section.)

The preprofessional curricula for medical doctors, osteopaths, dentists, optometrists and veterinarians, have the same basic core because they must prepare students for professional schools whose admission requirements are almost identical. These include a strong foundation in math, chemistry, physics, and biology, the disciplines on which major advances in the health field depend. Included also are courses to develop written and spoken communication skills, which are highly important for a good relationship with patients, the public and other professionals.

Beyond this required core, preprofessional students may choose courses and a major as freely as any other students in the College of Arts and Sciences. Most students concentrate on some aspect of biology or chemistry, but other subject areas are not only acceptable but welcomed. Medical schools encourage study in the social sciences and humanities that contributes to the understanding of human beings in their entirety—their history and environment, their attitudes and values, their emotions, motivations, interpersonal relationships and cultural heritage. All of these may affect sickness and health.

Although most students entering a professional school in one of the above fields have a bachelor's degree, it is possible to apply for admission after three years of college work (two years for a few dental and veterinary schools). OSU permits preprofessional (health-related) students to choose between two alternative bachelor's degree programs: (1) in a specific discipline that requires a minimum of 127 semester credit hours at OSU, or (2) in physiology, a degree program which allows a "3 plus 1" approach, requiring at least 97 semester credit hours at OSU and 30 hours to be transferred from a medical, osteopathic, dental or veterinary school.

Some professional schools do not state a firm minimum grade-point average for admission, but a student should maintain better than a 3.00 grade-point average to be competitive. The specific admission requirements of medical, dental and veterinary schools are compiled in catalogs available in the offices of each preprofessional adviser and in the Office of Student Academic Services. The OSU pre-veterinary course requirements are listed under "Pre-verteinary Medicine Curriculum" in the "College of Agriculture" section of this Catalog.

All applicants for medical schools must take the Medical College Admissions Test (MCAT), dental applicants must take the Dental Admission Test (DAT), and optometry applicants must take the Optometry Admissions Test (OAT) prior to admission. The OSU College of Veterinary Medicine requires the General Test and the Advanced Biology Test of the Graduate Record Examination (GRE) within the previous four years.

Allied Health Professions. The allied health professions for which one can prepare at Oklahoma State University include athletic training, corrective therapy, dental hygiene, nursing, occupational therapy, pharmacy, physical therapy, physician's associate, and radiologic technology. Each of these programs requires that the final phase of the education and degree program (usually two to three years) be completed elsewhere in a professional program. The College of Arts and Sciences offers the general education and basic science courses which one must complete before he or she can be accepted into a professional program. Students whose goal is admission to a professional program in the allied health professions should consult with the senior academic counselor-coordinator of health professions advising for information regarding the specific requirements of particular programs and schools.

**Medical Technology:** See "Department of Botany."

**Pre-law Program.** Law schools have no preference for a specific undergraduate major. Admission to law school is normally based upon a strong record achieved in a rigorous undergraduate program and an acceptable score on the Law School Admission Test (LSAT).

Law school admissions officers most frequently recommend that students include in their undergraduate programs courses in economics, literature and languages, psychology, history and government, mathematics, logic, philosophy, accounting and speech.
Courses in these areas are especially helpful as one seeks to develop the verbal and analytical abilities which are particularly critical for success in law school.

Pre-law students may select courses in consultation with a pre-law adviser in the Office of Student Academic Services until such time as they choose a particular degree program.

**Graduation Requirements**

**General Education Requirements.** The General Education Requirements for the degrees offered by the College are shown for each program in Undergraduate Programs and Requirements. They total 40 credit hours for the B.S. and BA degrees.

All degrees include a common core of 12 credit hours. Three credit hours of American history and three hours of American government are required. These must be satisfied by HIST 1103 and POLS 1013. Six credit hours of English composition is a University requirement, and this must be satisfied by English 1113 or 1313 or 1213 or 1413. Students who obtain a grade of “A” or “B” in English 1113 may substitute ENGL 3323 for ENGL 1213. (See also “English Proficiency Examination,” below.)

The remaining 28 credit hours must be distributed as follows: six credit hours of social sciences, six hours of humanities, eight hours of natural sciences, six hours of analytical and quantitative thought, and two hours of elective.

**College Requirements.** In addition to the 40 hours of general education, the college requires one credit hour of orientation, (A&S 1111), and three hours of communication systems, for both the BA and the BS, degrees. For the B.S., nine additional hours of natural or mathematical sciences are required, as well as three additional hours from the humanities or arts. For the BA, nine additional hours of humanities or arts are required, as well as three additional hours of natural or mathematical sciences and a course focused on non-Western culture.

**Foreign Language Proficiency Requirement.** For the BA and B.F.A., the foreign language requirement is 10 credit hours in one foreign language. Five hours in one language and five in another do not satisfy the requirement. The ten hours represent the first year of work in the language in college and are roughly equivalent to two years of work in high school. The courses are normally 1115 and 1225. Proof of equivalent proficiency must be recorded on the student’s transcript, by either advanced standing credit or completion of a second year course or above in the language. FRNCN and GRMN 3013, 3023, FRNCN and SPAN 4113, RUSS 3123, 4113, and 4223 do not satisfy this requirement.

For the B.S. and B.M. degrees, proficiency in a foreign language may be demonstrated by a high school transcript showing two years of high school study in a single foreign language or by college or advanced standing credit showing completion of one year of college study or a higher level course.

**Non-Western Requirement (B.A. and B.F.A. only).** One three-hour course in Non-Western studies from: A&S 3603 (Asian studies); ART 4633, 4643; CHIN 2115, 2123, 2223; ENGL 3173; FIL 3500, 3503; GEOG 3753, 3763; HIST 3013, 3203, 3403, 3413, 3423, 3433, 3980, 4613; JAPAN 2115, 2123, 2223; PHIL 3943; POLS 3213, 3223, 3253, 3313; REL 3403, 3433, 3553, 3613, 4113, 4400, 4613.

**International Dimension Requirement (all degrees).** One course which fosters understanding of, or the ability to communicate with, peoples and cultures of other countries. Courses satisfying this requirement are designated “I” in the Catalog and a list is available from any adviser or from the Office of the Dean of Arts and Sciences.

**Scientific Investigation Requirement (all degrees).** One course including an investigative laboratory that provides experience with scientific method. Courses satisfying this requirement are designated “L” in the Catalog and a list is available from any adviser or from the Office of the Dean of Arts and Sciences.

The Non-Western, International Dimension, and Scientific Investigation requirements may be satisfied by courses used also to satisfy any other part of a student’s degree program (i.e., in General Education, College, Major, or Electives requirements). No additional hours are required.

**Additional College Requirements.** For all degrees, six hours of general education designated courses are to be taken at the 3000 level or above.

**The English Proficiency Examination.** All candidates for a bachelor’s degree must pass the University English Proficiency Examination. See “University Academic Regulations.” Mathematics Proficiency Requirement. All candidates for a bachelor's degree must demonstrate proficiency in mathematics by fulfilling one of the following conditions:

1. Receive a grade of “A” or “B” in MATH 1314, 1513, 1613, or 1715; or
2. Receive advanced standing credit for any one of the courses listed in number (1) above; or
3. Receive a grade of “C” or better in any calculus course, that is, MATH 2265, 2365, 2373, 2383, 2713.

Pass the Arts and Sciences Mathematics Proficiency Examination prior to filing a diploma application. Students are encouraged to take the examination as early as possible. The examination is administered, by appointment, to individual students by the University Testing and Evaluation Service. A small fee will be charged for the administration and grading of the examination. Students who fail the examination will be required to take it again until they have demonstrated proficiency.

**Major Requirements.** At least 40 semester credit hours as specified by the department, including courses in the major and in supporting fields, must be completed. These 40 hours constitute the student's Major Requirements.

**Upper-division Credit.** A student must successfully complete at least 50 semester hours of upper-division credit, i.e. credit in courses at the 3000 or 4000 level.

**Hours in One Prefix.** If a student seeking a BA or B.S. degree takes more than 42 semester credit hours in one subject, including both lower-division and upper-division credit, the hours in excess of 42 will be added to the minimum total of 127 hours required by the College for a bachelor's degree.

This “42 hour maximum” applies to all courses taken in a subject, whether they are required or elective, with the exception of required courses in English composition and American history and government.

**Total Semester Credit Hours and Grade-point Average.** The minimum number of semester credit hours for graduation is 127. The minimum grade-point average is 2.00 and must be earned in all major courses, in Major Requirements, and in all courses applied toward the degree. A minimum cumulative grade-point average of 2.00 is also required.

Particular degree programs may specify higher grade-point requirements or exceed the 127 hours total. Details are given in Undergraduate Programs and Requirements.

**Native Speaker Policy.** It is the policy of the College of Arts and Sciences that native speakers of any foreign language (those whose language of instruction in high school was the language in question) may not normally be permitted to enroll in or establish credit in courses in that language at the 1000 or 2000 level. There are no restrictions on higher level courses. Exceptions resulting from degree requirements maybe determined by interview with the head of the Department of Foreign Languages and Literatures and the appropriate language section chairman.

**Endorsement of Student’s Plan (Graduation Check).** Immediately after their last enrollment, before their last semester, students must check with their advisers to ascertain that a degree plan has been sent to the Arts and Sciences Office of Student Academic Services.

**Changes in Degree Plan.** Once a degree plan has been submitted, a student will not graduate until all requirements on it have been fulfilled. Any deviation in the plan must be recommended by the adviser on a “Change in Plan of Study” card, and sent to the Arts and Sciences Office of Student Academic Services for approval.

**Checklist of Graduation Requirements.**

1. **Total hours.** Minimum 127 (see degree sheet). Hours of “F” or “I” or for repeated courses (unless officially approved in course descriptions in the Catalog), do not count. ENGL 0123 and MATH 0123 are not applicable to a degree. Students must ascertain that grade reports for the removal of “I’s” have been sent to the Office of the Registrar by the instructor who gave the “I.”

2. **Grade-point average.** See individual degree sheets for all grade-point minima; overall, in major, in major requirements, in professional courses, and in student teaching.

3. **Validity of credits.**
   a. No more than two courses in any one subject or (8 hours in biological science) may be used to satisfy General Education and College requirements.
   b. A course used in the Major Requirements may not be used to satisfy any other degree requirement, except the international dimension, scientific investigation, upper-division general education, and non-Western requirements.
c. Pass-No Pass Grading System. Courses taken on this campus under the Pass-No Pass Grading System (see “University Academic Regulations”) may be used only as elective hours. They cannot satisfy any other requirement (General Education, Departmental, Major Requirement, certification).

4. All degree requirements listed above and specified in “University Academic Regulations” and Undergraduate Programs and Requirements must be satisfied.

5. Exception. A student who believes that he or she has a valid reason for exemption from a College requirement should file with the Office of Student Academic Services a written request which has been approved by his or her adviser. Although general and departmental requirements apply to transfer students, all or most of the student's previous work may be acceptable as substitutions. Students should consult with their advisers.

**Departmental Clubs and Honor Societies**

Advertising Club
Alpha Epsilon Delta (premedical honor society)
Alpha Epsilon Rho (broadcasting)
Alpha Kappa Delta (sociology)
American Association of Petroleum Geologists
American Chemical Society
Angel Flight
Arnold Air Society
Army Blades
Arts & Sciences Student Council
Association for Computing Machinery
Biology Club
Chinese Club
Dobro Slovo (Slavic languages)
Economics Club
French Club
Friends of the Forms (philosophy)
Gamma Theta Upsilon (geography)
Geological Society
German Club
Japanese Club
Kappa Kappa Psi (band honor society)
Music Business Association
Music Educators National Conference
National Student Speech-Language-Hearing Association

Omicron Delta Epsilon (economics)
Pershing Rifles
Phi Alpha Delta (pre-law)
Phi Alpha Theta (history honor society)
Phi Lambda Upsilon (chemistry honor society)
Phi Mu Alpha (music)
Phi Mu Tau (medical technology)
Pi Mu Epsilon (mathematics)
Pi Sigma Alpha (political science honor society)
Political Science Club
Psi Chi (psychology)
Psychology Club
Public Relations Student Society of America
Russian Club
Scabbard & Blade
Sigma Alpha Iota (music)
Sigma Pi (psychology)
Sigma Tau Delta (English honor society)
Society of Physics
Students Society of Professional Journalists
Sociology Club
Spanish Club Speech
Communication Organization
Statistics Club
Tau Beta Sigma (band honor society)
Wildlife Society
Women in Communications

**Art**

**Associate Professor and Interim Head Nancy Wilkinson, Ph.D.**

The Department of Art provides courses for the following types of student needs: (1) general educational background, (2) major concentrations in studio art, graphic design and art history, (3) minors in all three areas.

Two degrees are offered in art Bachelor of Art (BA) with tracks in studio art and art history and the Bachelor of Fine Arts (B.F.A.), a professional degree. Students may choose one of two options in the B.F.A. program: studio art or graphic design. Fields of concentration available in both degree programs are drawing, oil and watercolor painting, printmaking, graphic design, ceramics, jewelry, metalsmithing, sculpture and art history. Because of core curriculum departmental requirements, the freshman and sophomore years are virtually the same for all majors in art.

Students wishing teacher certification should contact the Teacher Education program in the College of Education or their art adviser. Art majors must attain a grade-point average of 2.50 in art courses in order to qualify for licensure and graduation.

The Department of Art maintains an exhibition gallery, the Gardiner Art Gallery in the Bartlett Center for the Studio Arts, with approximately 200 linear feet of exhibition space and 2600 square feet of floor space. Works by artists of national and international reputation, faculty and student works and cultural artifacts are shown. Because of a large endowment, the department is able to offer substantial scholarships at all levels, freshers through senior.

**Graduate Programs**

Programs of research and study leading to the degrees of Master of Science and Doctor of Philosophy are offered in many areas of botany, including anatomy and ultrastructure, ecology, physiology, taxonomy, population biology, genetics and development, and biotechnology-related areas such as tissue culture and plant molecular biology.

Prerequisites. Applicants for admission must have received a baccalaureate degree from an accredited college and should have had 40 semester hours (or equivalent) in upper-division courses in the biological and physical sciences. A grade-point average of 3.00 (on a 4.00 scale) or above is required for unconditional admission. All applicants are required to submit scores for the Aptitude and Advanced Biology portions of the Graduate Record Examination.

Prerequisites for graduate degrees include successful completion of courses in the areas of plant taxonomy or field botany, plant morphology and anatomy, plant pathology or microbiology, plant physiology or cellular and molecular biology, genetics and ecology. Chemistry through organic and mathematics through calculus are also required. Students with an undergraduate major in plant science who have completed a substantial portion of this minimal list upon matriculation; those with a less closely related major may be required to take some background courses without graduate credit. Final authority for each student's plan of study, including courses to be taken at the undergraduate level, resides with the student's advisory committee.

A potential graduate student may be required to take one or more advisory examinations covering the various subject matter areas of botany. The examinations to be taken will be determined by the student's screening or advisory committee. The results will be used to determine course work needed or the level at which the student should proceed.

Demonstrated research competence through submission and acceptance of a thesis or dissertation is required for all graduate degrees. A minimum of one semester teaching experience is required of all M.S. and Ph.D. candidates. This requirement may be satisfied by enrollment in a college teaching practicum course (GRAD 5990) or by one semester teaching experience. The requirement for competence in a foreign language will be determined by the student's advisory committee.

**Botany**

**Professor and Head Glenn W. Todd, Ph.D.**

Botany is the science concerned with all facets of plant life. Green plants are the constantly renewable source of food and fiber, and it is important that they be thoroughly understood as survival and ecological balance depend upon this knowledge. As populations increase, the need for more and better supplies of food and fiber also increases. The study of botany underlies several applied sciences such as agronomy, forestry, horticulture, plant pathology, range, lake and wildlife management.

To major in botany a student should have a strong interest in science with a good background in chemistry, physics and mathematics. Majors with a B.S. degree may qualify for secondary school science teaching licensure, for technical positions with the federal and state governments in plant inspection and plant introduction work, for plant breeding programs, and for various activities concerned with plants in private industry, such as plant biotechnology.

Facilities used in undergraduate teaching include well-equipped plant structure-function and ecology laboratories, constant-environment chambers, greenhouse facilities, a 160-acre "ecology preserve" and herbarium with over 125,000 plant specimens. All of the faculty teach and do research in their specialty areas of botany: plant ecology, physiology, taxonomy, anatomy, development, genetics and molecular biology.
All graduate students are expected to attend and participate in departmental seminars.

The Master of Science Degree. Plans of study must contain 30 credit hours including at least 21 semester credit hours numbered 5000 or above, six credit hours of thesis and two credit hours of seminar. A minimum of 16 semester credit hours must be in the major department or field, above the prerequisites required for entrance into the M.S. program.

The Doctor of Philosophy Degree. The student must complete a minimum of 90 credit hours beyond the bachelor's degree or 60 hours beyond the master's degree. The plan of study must include four credit hours of seminar. No fewer than 36 nor more than 60 hours of BOT 6000 will be allowed in the plan of study. After a Ph.D. candidate has completed most of the course work, qualifying examinations will be scheduled. These will cover major areas of the student's plan of study; all relevant subdivisions of botany will be included. The examinations will be both written and oral.

Medical Technology

The program in medical technology is designed to give the student the broad general education and the highly technical skills that are required for a successful career in this important medical science. The minimum requirement for the B.S. degree in medical technology is three years of university work and one year of clinical laboratory education (internship) in an approved school of medical technology.

Clinical Laboratory Education. For the B.S. degree and certification, the students will, after three years of university work, complete one year of clinical laboratory education (internship) in a school of medical technology accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and currently affiliated with Oklahoma State University. Schools of medical technology at the following hospitals are currently affiliated: Comanche County Memorial Hospital, Lawton, Okla.; Muskogee General Hospital, Muskogee, Okla.; St. Anthony's Hospital, Oklahoma City, Okla.; St. Francis Hospital, Tulsa, Okla.; St. Mary's Hospital, Enid, Okla.; Valley View Hospital, Ada, Okla.

Students entering their twelve months of internship must enroll in Medical Technology Clinical Laboratory (MTCL) courses for 12 credit hours during the equivalent fall and spring semesters and for six hours during the equivalent summer session, as follows: Fall-MTCL 4117, 4125; Spring-MTCL 4325, 4351. A grade of "I" will be given for the first two semesters of internship. Final letter grades will be awarded upon receipt of the final official transcript showing final letter grades in the six MTCL courses from the school of medical technology by the University medical technology coordinator. If a student fails to complete the entire 12-month internship, no course credit will be awarded. Students will pay the regular tuition for the credit hours in which they are enrolled, except that the facility fees will be waived for the 30 hours of MTCL courses. Students who earn a B.S. degree prior to entering hospital internship will not be required to enroll and pay tuition during internship unless they desire to earn a second B.S. degree in medical technology.

Preprofessional Courses. NAACLS requires a minimum of 16 hours of chemistry, including organic and/or biochemistry and 16 hours of biology, including immunology. The University requirement for the B.S. degree in medical technology is as follows: two semesters of general chemistry; organic chemistry and biochemistry; immunology, genetics, anatomy and physiology, and two upper-division courses in microbiology; college algebra and computer science.

Residence Requirements. Although the MTCL courses are considered to be resident credit, the student is required to complete additional resident requirements from regular on-campus courses as follows: 30 hours of resident courses, including 18 hours of upper-division courses listed under Major Requirements on the current degree requirement sheet in the Undergraduate Programs and Requirements.

Grade-point Average Requirements. Students, to be qualified for the B.S. degree, must earn a grade-point average of not less than 2.00 overall and 2.00 in upper-division major courses. Students with less than 2.80 overall grade-point average may find it difficult to gain acceptance to a school of medical technology under current conditions of competition.

Applications and Admission to Internship. Students should apply directly to one or more schools of medical technology about 10 months prior to the beginning date for internship. Approximately 70 percent of students applying for internship are accepted, depending upon the degree of competition in any particular year. The decision on acceptance of any applicant is entirely at the discretion of the hospital-based school of medical technology. Enrollment is limited by the size of the classes in the affiliated hospital-based programs. Satisfactory completion of the clinical laboratory education is required for eligibility to take a certifying examination. The B.S. degree in medical technology is not dependent on a passing grade on the certifying examination.

Chemistry

Professor and Head Horatio A. Mottola, Ph.D.

Chemistry is the science that deals with the composition, structure and interactions of matter of all kinds. Materials obtained from the earth, such as ores, petroleum and natural gas, as well as those from plants and animals, such as food, fibers and antibiotics, are all studied and modified through chemical means. The chemist creates from natural products new and useful substances that add to the enjoyment of life. He or she creates new agents to combat pests that destroy great portions of food supplies and new drugs to fight diseases of many kinds. Chemists lead the fight against pollution of the environment that results from rapid multiplication of population and of use of energy. Chemists are at the forefront of the search for new energy sources and for ways to better use existing sources of energy.

A great curiosity concerning the physical world should be characteristic of one who is considering chemistry as a profession. The student should want to learn more about the changes of materials and to use his or her knowledge for the betterment of life. The student should have an interest in physics and mathematics, since those subjects’ principles are basic to the study of chemistry.

Chemists are employed by most large companies in this country, especially those that produce foods, medicines, fuels and materials. These chemists work in the areas of research, sales and quality control. Many chemists become teachers in public schools or colleges. State and federal agencies employ chemists for research and analysis. Generally an MS. or Ph.D. degree is desirable for those interested in research or college teaching.

Graduate Programs

Prerequisites. The student should have at least eight semester credit hours (or the equivalent) in general, analytical, organic, and physical chemistry. The physical chemistry should have been based on mathematics through calculus.

A beginning graduate student must take diagnostic examinations covering one year of undergraduate study in analytical, organic, and physical chemistry before the student enrolls for the first time. If the student fails to pass one of these examinations, he or she will be required to repeat the appropriate undergraduate course without graduate credit at the first opportunity. No graduate credit may be earned for chemistry courses numbered below 4000. The student may enroll in graduate courses for which the student has passed the entrance examination.

Admission Requirements. Admission requirements are minimal. For admission without qualification a grade-point average of 3.00 or better is required. Deserving applicants with grade-point averages less than 3.00 are infrequently admitted under probationary conditions. Additional support of the application is sought in the form of three letters of recommendation. Graduate Record Examination scores are not used as a criterion for admission. Recommendations on admission to the Graduate College are made on behalf of the applicant by the departmental admission officer. Acceptance by a permanent adviser is not a prerequisite to admission to the program.

Degree Requirements. A more detailed description of the graduate student program in chemistry is available in a brochure which will be supplied by the Department upon request. The requirements set forth below complement the general requirements stated in the "Graduate College" section of the Catalog.

Attendance and participation in the departmental colloquium and CHEM 5011 and 6011 are required.
The Master of Science Degree. Students must complete at least 30 credit hours of graduate course work in chemistry or related fields. Each student must present an acceptable thesis dealing with a research problem and pass a final oral examination covering it and related material. Research on the thesis problem should be started as early as possible in the graduate program.

The Doctor of Philosophy Degree. Work is offered which leads to the degree with specialization in analytical, inorganic, organic or physical chemistry. A major in biological chemistry is offered by the Department of Biochemistry. The student must pass a qualifying examination in the student’s field of specialization.

An acceptable thesis must be presented which contains a substantial original contribution to the field of chemistry. The student must pass a final oral examination covering the thesis and related material. The Doctor of Philosophy degree requires the completion of at least 90 semester credit hours of work beyond the bachelor’s degree, divided nearly equally between thesis and course work.

The course requirements are determined by an advisory committee which is appointed for each student.

Computer Science

Professor and Head George E. Hedrick, Ph.D.

Computer science is concerned with theoretical and practical methods of storing, processing and communicating information by means of computers. Professional computer scientists obtain a formal education through the B.S., M.S. or Ph.D. degrees and apply their knowledge to many diversified fields of science, engineering, business and communications. Computer science offers opportunities to both specialists and generalists.

In little more than three human generations, the computing field has evolved from one associated primarily with engineering and scientific calculations of only casual interest to the layperson, to a factor of significant influence in almost every aspect of modern life. Technical careers in computer architecture and software design, as well as applications in the business and scientific areas, require a thorough knowledge of the principles of computer science. In addition, most managers in any field require some familiarity with computers, not only to be able to understand them, but also to incorporate them into their own decision-making processes.

The department has a cooperative education program. Cooperative education is the process of education that formally integrates college studies with work experiences in cooperating employer organizations. It blends classroom study with planned and supervised employment in an area relevant to the student’s major. Students who are in their junior year may enter this program and alternate semesters in the classroom with semesters on the job. A student goes into the work setting at least three times.

The department offers the full range of degree programs-B.S., M.S. and Ph.D. For individuals interested in teaching computer science at a two-or four-year institution, an Ed.D. program is also available. The B.S. program consists of a computer science core curriculum with specialization in business applications, computer systems, scientific computation or computer architecture.

Most B.S. and M.S. graduates obtain positions in industry. Approximately half of the Ph.D. graduates take university teaching and research positions and half are employed in industry.

Computing facilities available include the University Computer Center computers, an IBM 3090 with 64 megabytes of primary memory and VAX clusters. The department also has six Intel 286/310s, two AT&T 3B2/300 microcomputers and 30 AT&T UNIX PCs, an AT&T 3B15 computer, and four AT&T graphic terminals, as well as several microcomputers. These are available for both instructional assignments and research projects. Faculty and graduate students also have access to a Perkin-Elmer 3230 (Concurrent XFS10) which can be used for experimental software development.

The Department participates in the CSNET and USENIX networks for computer science research and UNIX users. (UNIX is a trademark of Bell Laboratories.)

Graduate Programs

The Department offers degree programs leading to the Master of Science degree, the Doctor of Education degree in higher education, and to the Doctor of Philosophy degree. These programs are designed to prepare an individual to pursue a career in either an academic or an industrial setting. In addition to taking a prescribed set of core courses, a student must take sufficient courses in one specialized area. In addition to course work, a student must complete a thesis for an M.S. degree and a dissertation for a Ph.D. degree.

The core course requirement assures the student of breadth of knowledge in computer science; the freedom to choose an area and additional research assures the student of enough depth in some facets of computer science to be able to carry out independent investigations in those areas and put concepts and ideas learned to practical use.

For a master’s degree, 30 hours of graduate credit, including a six-credit-hour thesis, are required. A master’s degree student is required to pass an oral examination over the thesis. There is no foreign language requirement for the M.S.

For an Ed.D. or a Ph.D., 60 credit hours beyond a master’s degree or 90 hours beyond a bachelor’s degree are required. A dissertation of no more than 30 hours is required. The Ph.D. dissertation must describe original research while the Ed.D. dissertation may be expository. Ed.D. and Ph.D. students must pass (at an appropriate level) written preliminary examinations in areas of specialization. For Ed.D. students, one of the specialty areas must be computer science education. Master’s students who pass these examinations at the Ph.D. level are encouraged to pursue a Ph.D. program of study. Reading knowledge of at least one foreign language is required for a Ph.D., but not for the Ed.D. Approximately 700 students graduate each year in the United States with Ph.D.’s in computer science. In general, both academic and industrial positions exist for each Ph.D. graduate.

The candidate’s baccalaureate degree need not be in computer science in order to enter this program. Admission to the program does require: (1) an undergraduate degree; (2) successful completion of a 10-hour calculus sequence; (3) demonstrated competence in programming with some procedure-oriented programming language such as ALGOL, COBOL, FORTRAN, or PASCAL; and B-PASCAL satisfying grade-point average and Graduate Record Examination scores.

English

Professor and Head Guy Bailey, Ph.D.

The study of English literature and language is fundamental to any education. Not only does it provide familiarity with the literary works that shape cultural heritage, but it also develops the abilities to think analytically, to speak and write effectively, and to consider various points of view when dealing with people and ideas. Educated people in almost every career and lifestyle regard these skills as invaluable.

The Department of English prides itself on the diversity of its course offerings and on its small lecture and discussion classes. The BA, MA and Ph.D. degrees are awarded through the department and a full range of courses are offered in seven areas: literature, composition and rhetoric, technical writing, creative writing, linguistics, teaching English as a second language, and film. The number of students in any English class rarely exceeds 30; and in a writing class, including freshman-level classes, the enrollment cannot exceed 25.

An undergraduate English major has three options: a traditional English major, secondary education teaching certification, or technical writing, each of which emphasizes literature and writing in varying proportions. English majors may choose from courses in all historical periods of British and American literature, from early to contemporary, and in all genres-novel, film, short story, poetry, and drama. Every literature course emphasizes literary appreciation and analysis and allows ample opportunity for discussion and writing. The student in the traditional major may also take creative writing from practicing, published writers and may specialize at the advanced level in fiction writing, poetry writing, and scriptwriting. Also available are courses in linguistics, which is the study of language, and technical writing, which is writing for science and industry.

Many English majors pursue careers directly related to their major, such as in technical writing or in teaching. An English major with a technical writing option would be well prepared to pursue a career as a writer, editor, publications manager, or information developer. Students who want to teach may earn secondary teaching certification in English through either the Department of English or the College of Education, or they may decide to go to
graduate school in order to teach in a college or university. A great many English majors have found the teaching profession a rewarding and challenging one. More students are finding that an English major is excellent preparation for law school because it develops the analytical and language skills lawyers use. But one need not have definite career goals to major in English. English majors regularly pursue careers not only in education, professional writing, and law, but also in medicine, the ministry, publishing, government, and business. Professional schools and businesses value English majors both for their communication skills and for their broad-mindedness.

The Department of English serves a great many students other than those majoring in English. It offers a variety of writing courses to fulfill the University's composition requirements; and English courses in literature, technical writing, creative writing, and film are very popular electives for students in all majors. Many students find English such a good complement to their first major that they choose a second major or minor in English.

A Bachelor of Arts in English requires 39 hours of lower- and upper-division English courses. An English minor requires 18 hours of English, at least 9 of which must be upper-division. (These hours do not include Freshman Composition.)

Graduate Programs

Graduate study in English at Oklahoma State University allows students freedom of choice. Only one course, "Introduction to Graduate Studies," is required of all graduate students, and only one additional course, "Teaching Freshman Composition," "Teaching Technical Writing," or "TESL Methodology," depending on the student's career goals, is required of all graduate teaching assistants. As a result, all students, in cooperation with their advisers, design their programs in accord with career goals. In addition to American and British literature, the Department of English offers graduate work in composition and rhetoric, creative writing, film, linguistics, and literary theory. At the MA level, separate programs in teaching English as a second language (TESL) and in technical writing prepare teachers for the bilingual classroom and technical writers for industry. Ph.D. degree candidates have an additional interdisciplinary area that allows them to blend other disciplines with literary studies.

The variety of choices and the flexibility built into the program prepare the graduate to meet the demands of a changing academic marketplace.

Stipends, Scholarships and Awards. All graduate assistants are charged in-state fees. Stipends for graduate assistants and associates are paid on a nine-month basis.

MA. and Ph.D. Examinations. Upon completion of all course work, MA students take a three-part examination over American literature, British literature, and one of the following subjects: composition and rhetoric, film, linguistics, and literary theory. Students in the TESL and technical writing options also take comprehensive examinations over their fields.

Ph.D. students are examined in five subject areas (students may exempt, with permission, of their advisory committee, two of the five areas by virtue of course work): American Literature to 1910 British Literature to 1661 English Literature from 1660 to 1910 English Literature to 1910

Interdisciplinary Studies: American studies, composition and rhetoric, film, linguistics, literary theory, TESL, technical writing

One of these areas, with the exception of Interdisciplinary Studies, is designated as the student's primary area of study.

Teaching Opportunities. Graduate teaching assistants may enjoy a wide range of assignments, including teaching freshman composition and working individually with students in the writing laboratory. After acquiring some classroom experience and demonstrating excellence, assistants may also teach introductory courses in literary genres, creative writing, or technical and report writing.

The Master of Arts Degree. Every MA degree student is required to take 24 credit hours of course work and six thesis hours. (Applicants who were not English majors may be asked to enroll in additional hours to sharpen skills.) ENGL 5013, "Introduction to Graduate Studies," is required of all MA candidates. The remaining 21 hours of course work will be chosen by students in consultation with their advisers.

In addition to 30 hours of work in English, a reading knowledge of one foreign language is required. When appropriate, students may use six hours in linguistics or Old English to satisfy the language requirement.

Master's degree candidates in literature prepare either a scholarly or a creative work for thesis credit. A thesis committee consisting of a thesis adviser and two other faculty members supervises this project. Students choose the faculty members with whom they work; the project should be a valuable experience for both candidates and supervisors.

The Master's Program in TESL. A dissertation to Teaching English as a Secondary Language. TESL is a program within English having its own course requirements and examinations. Applicants who speak English as a second language should have had an undergraduate concentration in English or the equivalent in practical experience. After initial testing and counseling, TESL students may be asked to enroll in a course designed to improve their command of English. Applicants who speak English as a first language need not have majored in English, but they must have completed at least six hours of upper-division foreign language training. Native speakers who have not done so should expect to complete two semesters of foreign language courses in addition to English requirements.

TESL Examinations. TESL examinations cover four areas: traditional English grammar, TESL methodology, and two areas chosen by the student.

TESL is especially relevant to the public school classroom as a result of recent legislation concerning bilingual education. Teachers in English and other areas of expertise will find this program especially useful. This program, however, does not serve as a substitute for teacher certification. (A special TESL brochure is available.)

Course work. Plan I: 24 hours of course work and a thesis for a maximum of six hours are required. Plan II: 33 hours of course work and a research project or substantial paper are required.

The Master's Program in Technical Writing. Admission to the Technical Writing Program. Technical writing is a program within English having its own course requirements and examinations. Applicants should have a background in a technical area and in technical writing. Following a review of previous academic and work experience, students may need to enroll in courses designed to improve their mastery of a technical area or technical writing. Students need not, therefore, have majored in technical writing or a technical area.

Examinations. Examinations in technical writing, in addition to the diagnostic examination, cover these areas: technical writing theory, and a choice of two from among language and linguistics, rhetoric and the development of style in technical and scientific literature, or British or American literature. Special restrictions do apply to which examination areas the student may select and students should consult the special technical writing program materials.

Course work. Plan I: 24 hours of course work and a thesis for a maximum of six hours are required. Plan II: 33 hours of course work and a research project or substantial paper are required.

The Doctor of Philosophy Degree. A master's degree in English from an accredited university, a graduate grade-point average of 3.50 (on a 4.00 scale), and three positive letters of recommendation are the usual requirements for admission to the doctoral program. If one of these factors is not clearly present, admission may be granted with qualifications. The doctoral student is expected to earn 60 hours of credit beyond the hours required for the MA. Of these 60 hours, a maximum of 20 hours may be devoted to the dissertation.

A reading knowledge of two foreign languages is required of the doctoral student. When appropriate, students may use six hours in linguistics or Old English to satisfy one of the language requirements. The doctoral student may also fulfill this requirement by demonstrating mastery of one foreign language. Details about the foreign language and other requirements are found in the Department's Guidelines for the M.A. and Ph.D. Programs in English.

Doctoral candidates submit a dissertation based upon original research and prepared under the guidance of a dissertation committee composed of at least three faculty members from within the Department and one faculty member from outside the Department. Creative writing students may present as their dissertations original works in poetry, drama (including screenplays), or prose fiction. The dissertation is defended orally by the candidate at a public examination in which the argument, credibility, and value of the work are challenged.

Course Requirement for Teaching Assistants. In their capacity as teachers, assistants are required to enroll in "Teaching Freshman Composition," "Teaching Technical Writing," or "TESL Methodology." This course appears on student transcripts and may be counted for English degree credit.
Foreign Languages and Literatures

Associate Professor and Head
Kenneth J. Dollarhide, Ph.D.

The Department of Foreign Languages and literatures offers French, German, Russian and Spanish as major fields of study. Minors may be earned in Chinese, French, German, ancient Greek, Japanese, Latin, Russian and Spanish.

In all languages offered by the Department, elementary courses are available for students with no previous experience. A special intensive course in Spanish (10 credit hours in eight weeks) is offered in the summer session. Students with high school or equivalent foreign language experience will be placed at levels commensurate with their individual proficiency. A major in a foreign language is often supported by study of another language or work in other fields. Many language majors choose to qualify for an international area studies certificate. Several certificates, such as Russian and East European Studies, Asian Studies, Latin American, and Ancient and Medieval Studies, are available. A freshman with a good high school background in language can usually pursue two languages to the, level of a major.

The study of foreign languages is a vital and humanizing part of a general education. In a rapidly changing and shrinking world, it offers new cultural insights, breaks down insularity, fosters discipline of thought and expression and leads to a better understanding of one’s native language. Foreign language majors may expect to find openings in a wide variety of careers in law, medicine, government, industry and commerce, all of which require a good liberal arts degree. Job opportunities are greatly enhanced for those who combine foreign language study with a major or minor in other disciplines. Moreover, there is a growing demand for foreign language teachers in secondary education. Bachelor of Arts candidates may qualify for teaching licensure without increasing the number of hours required for graduation.

Additional options for study include literature, civilization and culture, and linguistics courses regularly taught in English. Courses are also offered in German for students who need only a reading knowledge of the language.

The M.S. degree in curriculum and instruction, with specialization in Foreign Language Education, is available for prospective teachers of foreign languages in elementary and secondary education.

Geography

Professor and Head
Matthews, J.D., Ph.D.

Geography is concerned with the surface of the earth and its immediate atmosphere. Geographers study the similarities, the differences and interactions among phenomena in this region. Geographers are interested in the economic, social, political and environmental qualities of places, and in how these attributes interact.

Geographers attempt to understand human behavior by answering such questions as: Where do people work? Where do they play? Where do they live? Why do people make these locational choices? What are the consequences of these decisions and behavior?

Because the physical environment is important in many explanations of spatial behavior and spatial patterns, geographers have traditionally concerned themselves with relationships between humans and their environment. What impact do people have on the land? What impact does the land have on people? How do people perceive their environment? How does this perception influence their activities?

Finally, geographers examine spatial patterns and behaviors in specific regional contexts. These analyses occur at many levels-world-wide, national and local. These kinds of studies lead to suggestions for change and improvement-the application of geography to contemporary rural, urban and regional problems. Thus many aspects of urban, regional and national planning are geographic in nature.

No academic discipline has broader interests than does geography, and the Department of Geography allows students the flexibility to pursue studies that lead to a wide range of educational goals and careers. Students with interests in environment, planning, real estate, economic development, international affairs, travel, area studies, management or education are among those which can be accommodated. A geography minor program is also available for those who see geography as complementary to another field of study.

Those who wish to study geography tend to be interested in their own surroundings and in other places. They also possess a curiosity for maps, the basic tool of the field. Students of geography will become familiar with remote sensing, computer graphics, statistics, geographic information systems and cartography-tools which facilitate geographic analysis.

Many careers are available to the geography major or minor. Recent graduates have been employed in urban and regional planning, community development, locational analysis in both the public and private sector, resource planning and management, various forms of domestic and foreign service, cartography and teaching. Geography also provides an excellent foundation for a liberal education and is a good basis for a career in business, industry or government.

The Department possesses a cartographic laboratory, the Center for Applications of Remote Sensing, a computer mapping facility, an interactive weather analysis system with satellite data feed, and an ARC-INFO geographic information system. It is directly linked to the University’s computing facilities through both standard and graphics terminals.

The North American Culture Society (NACS) is centered in the department and its journal North American Culture is edited and published by the department.

The department specializes in four areas: cultural and historical geography, resource management, regional analysis and development, and the geography of sport, recreation, and leisure. Complementary course work supporting these specialized areas is available in other departments.

The Department of Geography offers the BA and B.S. degrees. An advanced program leading to the Master of Science degree is also available.

Graduate Programs

The Department of Geography offers work leading to the Master of Science degree. This degree program emphasizes preparation for employment in positions which are enhanced by an ability to recognize and to interpret spatial distribution, and to analyze regions.

Particular emphasis is placed on the applied aspects of geography, with many graduates employed by private business as well as city, regional and national planning agencies. Recipients of the M.S. in geography have also gone on to a variety of successful careers in other fields, including retail store location analysis, banking, and university teaching and research.

The Master of Science Degree. Admission to the master's program in geography is granted to college graduates with superior academic records. An undergraduate geography major is not required. Majors from the social, physical, and behavioral sciences and from the humanities are encouraged to apply. Incoming graduate students must demonstrate competency in cultural geography, physical geography, statistics, cartography, and other geographic concepts. If deficiencies are apparent, they will have to be corrected, possibly increasing the time needed to complete the degree.

Two basic plans of study exist for the master's degree. One plan requires a minimum of 30 credit hours including a thesis, the other is a 36-credit-hour non-thesis option. Plans of study can be developed to accommodate many interests. Major faculty interests include resource management, cultural and historical geography, regional analysis and development, and the geography of sports, recreation and leisure.

School of Geology

Sun Chair, Regents Professor and Head
Wayne A. Pettyjohn, Ph.D.

Geology is the science of the earth. As such, it utilizes information from the other physical and biological sciences, mathematics and engineering. In many ways it is a common meeting ground for these disciplines. Within geology are many different specialties, for example, economic geology, petroleum geology, ground-water geology and paleontology. However, to specialize in any area normally requires graduate study.

To achieve success in geology, a student must become reasonably proficient in the information acquired from basic courses in physics, chemistry, mathematics, and, to a lesser degree, statistics and computer science.
History

Associate Professor and Interim Head Richard C. Rohrs, Ph.D.

History is the record, explanation and interpretation of the totality of man's activities. The study of history is unique in its concern for the time factor in man's development History enhances the individual's knowledge of himself and gives perspective and deeper meaning to contemporary events. Courses in the Department of History are intended to give the student a broad understanding of the evolution of civilizations, peoples, countries and institutions, and an insight into the meaning of this evolution, as well as to prepare graduates for many types of employment.

Because history is basic to many special fields, the department's instruction is designed to aid students interested in education, law, journalism, scientific and technical disciplines, public service and business administration. Students in colleges other than the College of Arts and Sciences who wish to pursue the study of history are encouraged to enroll in courses of interest. The Department of History offers a number of courses that satisfy General Education requirements in the social sciences and the humanities. It participates actively in the Honors Program and offers to its majors the option of pursuing a special plan of study leading to a Departmental Honors certificate. The Department of History also participates actively in the Area Studies Certificate program.

Graduate Programs

Prerequisites. The student should have at least 39 credit hours in geology. These additional requirements are minimal: nine credit hours of chemistry, eight hours of physics, four credit hours of zoology or botany, ten credit hours of calculus, and three credit hours of computer science. Deficiencies in course work must be made up by the student after entering the program. The Graduate Record Examination is required for admission to the program.

The Master of Science Degree.

Emphasis in the master's program is placed on classical geology and various aspects of applied geology, such as paleontology, environmental geology, hydrogeology, and petroleum geology.

Each candidate must complete at least 30 semester credit hours beyond the prerequisites. As many as 12 of these may be taken in other departments of the University upon approval by the candidate's advisory committee. Each candidate is required to write a thesis. A final defense of the thesis and the research that it documents is required of all students.

Graduate Programs

The Department of History offers programs leading to the MA and Ph.D. in history. In addition to the general Graduate College requirements, the candidate for the Master of Arts or Doctor of Philosophy degree with a major in history is expected to have prerequisites of approximately 30 semester credit hours (including 18 upper-division hours) of undergraduate history courses, with an undergraduate grade-point average of at least 3.00.

The Master of Arts Degree. Admission to the master's program requires submission of scores for the verbal, quantitative aptitude, and analytical sections of the Graduate Record Examination. Candidates for the Master of Arts degree choose one of three alternative plans. Requirements common to all three plans include completion of a course (HIST 5023) in historical methods of research and writing, several graduate seminars, and a two-hour oral examination at the end of the program. Students must maintain at least a 3.00 (B) grade-point average. An advisory committee will be appointed for each student during the first semester of enrollment. The three plans are designed for different careers, and the distinctive requirements of each are summarized below:

Plan I-(This plan is recommended for those planning to continue graduate studies at the doctoral level.) Students must complete a minimum of 30 hours of graduate courses in three fields (at least one in United States history and one in non-United States history). These hours must include at least nine hours of seminar offered by the department (reading and/or research), "Historical Methods" (HIST 5023), and six hours of thesis (HIST 5000). With the consent of the advisory committee, students may substitute one field in history with a field in a related discipline. Students must take at least six hours in the related discipline. The specific courses used to comprise this field must be taken at the graduate level and have the approval of that member of the advisory committee representing the related discipline.

Fields of study include:

- Ancient Mediterranean World
- Medieval Europe
- Early Modern Europe to 1789
- Europe since 1789
- East Asia
- England
- Latin America
- Russia
- United States to 1777
- United States since 1777

Students must demonstrate satisfactory reading knowledge of one foreign language.

Plan II-(Students must be pursuing applied history.) Students must complete a minimum of 33 hours of graduate courses. These hours must include at least three hours of research seminar, six additional hours of seminar offered by the department (reading and/or research), "Historical Methods" (HIST 5023), an internship (HIST 5030), and three hours of report (HIST 5000). With the approval of the student's advisory committee, as many as 15 of these hours may be taken in related disciplines.

Plan III-Students must complete a minimum of 36 hours of graduate courses in three fields, at least one in United States history and one in non-United States history. (See "Fields of Study" listed under Plan I.)

The Doctor of Philosophy Degree.

Admission to the doctoral program requires a satisfactory score on the Graduate Record Examination, including the Advanced Examination in History. Each applicant must also meet the Oklahoma State University requirements for the MA degree in history, with a grade-point average of at least 3.20 (on a 4.00 scale) in previous graduate work in history.

No definite course requirements apply to all students. Work necessary to prepare the student for his or her written and oral examinations will be indicated in a plan of study which is prepared and approved by an advisory committee. Generally, a minimum of 60 semester credit hours beyond the MA degree with a "B" grade average for all courses is required.

The prospective doctoral student must offer four fields for examination, one of which may be a pertinent field outside of history. Students specializing in United States history must offer for examination:

1. The United States history field.

2. One chronological or topical field from the following:
   - United States Colonial, 1600-1787
   - Nineteenth-century United States, 1787-1877
   - Modern United States, 1877-present
   - United States Economic
   - United States Military
   - United States Social and Intellectual
   - United States West

3. Two fields from the following:
   - Ancient Mediterranean World
   - Medieval Europe
   - Early Modern Europe to 1789
   - Europe since 1789
   - East Asia
   - England
   - Latin America
   - Russia

66 COLLEGE OF ARTS AND SCIENCES
With the consent of the advisory committee, a student may substitute for one of these fields a pertinent field outside history. At least 12 hours of graduate course work in a field outside history would normally be expected.

Students specializing in non-United States history must offer for examination:

1. Four fields from the following, one of which must be United States history:
   Ancient Mediterranean World
   Medieval Europe
   Early Modern Europe to 1789
   Europe since 1789
   East Asia
   England
   Latin America
   Russia
   United States

2. With the consent of their advisory committee, students may substitute for one of the fields (except United States history) a pertinent field outside history. At least 12 hours of graduate course work in a field outside history would normally be expected.

Upon admission to do graduate work at the doctoral level, the student’s temporary adviser is the departmental director of graduate studies. Before the middle of the student’s second semester, an advisory committee is appointed to assist the student in preparing the plan of study. This committee will consist of four members of the departmental graduate faculty (one from each of the examination fields), including the student’s major adviser, who acts as chairperson.

No student is admitted to candidacy until he or she has (1) demonstrated a reading knowledge in at least one foreign language; (2) completed all course work on the plan of study; (3) completed with a "B" grade graduate courses in historical methods and historiography; (4) obtained approval of a proposed dissertation topic; and (5) passed comprehensive written and oral examinations in each of the areas of concentration.

Upon admission to candidacy, the student begins work on the dissertation. Supervised by the major adviser and members of the advisory committee, the dissertation provides the student an opportunity to do original research on a topic within the major area of study. The final dissertation must be submitted to the Graduate college in accordance with the regulations contained in the "Graduate college" section of the Catalog. Upon completion of the dissertation, the student undergoes a final examination. Oral in nature and no more than two hours in length, the examination is primarily a defense of the dissertation.

4. To provide future media leadership through the preparation of high school and college educators and their participation in professional communication associations.

5. To emphasize high standards of ethics and responsibility in mass communication.

Accreditation
The programs of study in the School of Journalism and Broadcasting are accredited by the Accrediting Council on Education for Journalism and Mass Communication.

Special Requirements
Any student who elects a specific option from those listed in succeeding pages should meet with an SJB faculty adviser as soon as possible. The ability to type a minimum of 30 words a minute is required for registration in all writing courses beginning with "Newswriting" (JB 2393). In addition, competence in typing is expected of all majors in the School. Prospective students are advised to prepare for this requirement before enrolling at the University. Proficiency in typewriting can be demonstrated by a high school grade of "C" or better in typewriting or by passing a School typewriting test.

ADVERTISING
Ideas ranging from the introduction of new products and services to public service messages are communicated to mass audiences through advertising. Advertising also provides the economic base for mass media—newspapers, radio and television, magazines, cable—thus freeing them from the political control found in many countries.

Upon a strong liberal arts foundation, majors in advertising build educational experiences which prepare them for work in copywriting and layout, production, management, media selection, market analysis, sales and campaign planning. Basically, the program focuses on decision-making and problem-solving, and includes courses in marketing, psychology, sociology, management and economics. Opportunities for part-time jobs, summer internships and participation in the Advertising Club round out the student’s experience.

The program is affiliated with the American Association of Advertising Agencies, the Advertising Federation of America and the Point of Purchase Advertising Institute.

JOURNALISM
News coverage today has gone beyond stultifying reporting on police and city hall activities. The modern newspaper or broadcasting station tries to spotlight the diverse components of our complex society. This objective calls for writers with broad interests and special knowledge in politics, religion, science, business, economics, art and public welfare. From the ranks of these reporters come the future print and broadcast journalists.

Programs offered in journalism are:
News-editorial—This program prepares students for writing and editing positions on newspapers, magazines, and trade journals, in radio and television news departments, and in book editing and publishing.
Teaching—licensure—This program, taken in the College of Education, prepares students to teach journalism at the high school level.
Technical—communication—Students may combine agriculture and journalism or home economics and journalism to prepare for specialized work in technical writing and editing. These programs are developed in cooperation with the Colleges of Agriculture and Home Economics.
Community—journalism—This option, for those who plan eventually to own or manage weekly or small daily newspapers, requires experience in news, advertising and management, and thus requires a wide range of courses both within and outside the School of Journalism and Broadcasting. This program is an individualized one and should be entered only with the advice and consent of the SJB director.

The School of Journalism and Broadcasting offers a four-year undergraduate program in journalism. The curriculum of the School consists of four areas of concentration:

1. Business journalism: This program prepares students to work in the business field, with a concentration on news coverage.
2. News-editorial: This program prepares students for work in the public interest, with a concentration on news coverage.
3. Advertising: This program prepares students for work in advertising, with a concentration on advertising.
4. Community journalism: This program prepares students for work in community journalism, with a concentration on community journalism.

The School of Journalism and Broadcasting offers a two-year graduate program in journalism. The curriculum of the School consists of two areas of concentration:

1. Teaching—licensure: This program prepares students for teaching journalism at the high school level, with a concentration on teaching.
2. Technical—communication: This program prepares students for work in technical communication, with a concentration on technical communication.

The School of Journalism and Broadcasting offers a one-year postgraduate program in journalism. The curriculum of the School consists of one area of concentration:

1. Professional journalism: This program prepares students for work in professional journalism, with a concentration on professional journalism.

The School of Journalism and Broadcasting offers a one-year certificate program in journalism. The curriculum of the School consists of one area of concentration:

1. Professional journalism: This program prepares students for work in professional journalism, with a concentration on professional journalism.

The School of Journalism and Broadcasting offers a one-year certificate program in advertising. The curriculum of the School consists of one area of concentration:

1. Advertising: This program prepares students for work in advertising, with a concentration on advertising.

The School of Journalism and Broadcasting offers a two-year master's program in journalism. The curriculum of the School consists of two areas of concentration:

1. Teaching—licensure: This program prepares students for teaching journalism at the high school level, with a concentration on teaching.
2. Technical—communication: This program prepares students for work in technical communication, with a concentration on technical communication.

The School of Journalism and Broadcasting offers a one-year certificate program in technical communication. The curriculum of the School consists of one area of concentration:

1. Technical—communication: This program prepares students for work in technical communication, with a concentration on technical communication.

The School of Journalism and Broadcasting offers a one-year certificate program in community journalism. The curriculum of the School consists of one area of concentration:

1. Community journalism: This program prepares students for work in community journalism, with a concentration on community journalism.

The School of Journalism and Broadcasting offers a one-year certificate program in professional journalism. The curriculum of the School consists of one area of concentration:

1. Professional journalism: This program prepares students for work in professional journalism, with a concentration on professional journalism.

The School of Journalism and Broadcasting offers a one-year certificate program in advertising. The curriculum of the School consists of one area of concentration:

1. Advertising: This program prepares students for work in advertising, with a concentration on advertising.
The journalism program is affiliated with the Oklahoma Press Association, Southwestern Journalism Congress, Society of Professional Journalists, Association for Education in Journalism and Mass Communications and the Graphic Arts and Technical Foundation.

**PUBLIC RELATIONS**

Public relations practitioners perform a variety of tasks. As writers, they prepare news releases, speeches, trade-paper and magazine articles, texts of booklets, radio and television copy, product information and stockholder reports. They may supervise the company newspaper, magazine or newsletter, or other company communication programs.

The public relations option is related to and draws upon the news-editorial curriculum, as do the public information departments of government, business and industry. The public relations program is affiliated with the Society of National Association Publications, International Association of Business Communicators, and the Public Relations Society of America.

**RADIO-TV-FILM**

The programs in radio-television-film are designed to prepare students for careers in broadcasting. They offer graduates a chance to develop abilities in announcing, production, copywriting, news, documentary, sports, sales and management.

The undergraduate degree is offered in these professional options:

- **Production and performance**—For students who wish to hold on-the-air jobs in broadcasting or who desire to prepare for positions as directors and producers of radio and television programs.
- **Broadcast Journalism**—For students who wish to write, edit and produce news, discussion and documentary programs for broadcasting stations, networks and cable companies.
- **Sales and management**—For students who wish to write, sell and produce commercial messages, and to move into management and/or ownership positions on radio and television stations.

The facilities of the University’s color-equipped Telecommunications Center, a full-time radio station, KOSU, an electronic news-gathering laboratory (ENG), and access to a channel on the local cable, make it possible for majors to acquire experience along with professional studies. Radio-television-film is affiliated with the National Association of FM Broadcasters, Radio Advertising Bureau, Oklahoma Association of Broadcasters, Oklahoma Broadcast Education Association, National Association of Broadcasters, Radio-Television News Directors Association, Broadcast Education Association and National Public Radio.

**Graduate Programs**

The School of Journalism and Broadcasting offers courses leading to the degree of Master of Science in mass communication. The School also cooperates with the College of Education in planning and supervising study leading to a Doctor of Education degree with emphasis in mass communication.

Prerequisites for unqualified admission to the master’s program include a bachelor’s degree in an area of mass communication with an overall grade-point average of 3.00. Potential doctoral candidates must have a bachelor’s or master’s degree in a mass communication area, in addition to professional experience. A graduate of a non-mass communication discipline may enter the Master of Science program, with stipulation that he or she completes, without graduate credit, foundation courses relevant to career interests.

Basic emphasis is on application of current communication theories and research methods and design to the professional aspects of mass communication. Electives in the behavioral sciences are encouraged.

Mathematicians teach in high schools and colleges and work in industry and government. In industry, mathematicians usually work in research, although they have become increasingly involved in management. The firms employing the largest number of mathematicians are in the aerospace, computer, electronics and communications industries. In industry, a mathematician typically serves either in a consulting capacity, giving advice on mathematical problems to engineers and scientists, or as a member of a research team composed of specialists in several fields. Among the qualities which he or she should possess are breadth of interests and outlook, the ability to think abstractly and a keen interest in problem solving.

An undergraduate specializing in mathematics will begin with calculus or sometimes with college algebra and trigonometry. Well-prepared students are encouraged to establish credit in elementary courses by passing advanced standing examinations. All majors take courses in differential equations, modern algebra and analysis. The remainder of the field of concentration is determined by the student’s interests and future plans. Courses are available that serve as preparation for graduate work, for high school teaching and for employment in industry. Students are encouraged to acquire proficiency in computer programming and to take substantial work in related fields in which they have a special interest.

Many of the more challenging positions in mathematics require study beyond a bachelor’s degree. In particular, teaching in a junior college requires at least a master’s degree and possibly a doctorate. Approximately 25 percent of the students receiving a bachelor’s degree in mathematics go on to graduate work.

**Graduate Programs**

The Department of Mathematics offers programs leading to the Master of Science and Doctor of Philosophy degrees and also cooperates with the College of Education in supervising a program leading to the Ed.D. degree with emphasis in mathematics.

Prerequisites. A student beginning graduate study in mathematics is expected to have had, as an undergraduate, at least 18 semester hours in mathematics beyond elementary integral calculus including courses in differential equations, linear algebra and modern algebra. An applicant whose preparation is deficient may be admitted to the program, if otherwise qualified, but will be required to correct the deficiency, increasing somewhat the time required to complete work for the degree. Prospective graduate students are advised to take at least introductory courses in related fields such as physics, statistics, and computer science.

The Master of Science Degree. A Master of Science degree requires 32 credit hours of course work in mathematics and related subjects, although some of the course work may be replaced by a master’s thesis. Each student must pass a master’s examination on basic graduate courses in mathematics. The department offers a major in applied mathematics designed as preparation for mathematical work in industry and government.

The Doctor of Philosophy Degree. Admission to the Ph.D. program is granted only to students with superior records in their previous graduate study. A minimum of 90 semester credit hours of graduate credit beyond the bachelor’s degree is required for the Ph.D. degree. This may include a maximum of 24 hours credit for the thesis. Each student has an individual doctoral committee which advises the student in the formulation of an approved plan of study for the degree. Candidates for the Ph.D. in mathematics must demonstrate, by examination, a reading knowledge of one foreign language, usually French, German or Russian.

The most important requirement for the Ph.D. degree is the preparation of an acceptable thesis. This thesis must demonstrate the candidate’s ability to do independent, original work in mathematics.

**Microbiology**

Professor and Head Robert V. Miller, Ph.D.

Microbiology is the study of microorganisms (i.e., fungi, bacteria, and viruses) and their relationship to higher organisms. Areas of practical and theoretical consideration that require some understanding of microorganisms include: public health and sanitation; biotechnology; genetic engineering; food production and preservation; industrial fermentations which produce chemicals, drugs, antibiotics, alcoholic beverages, and various foods; prevention and treatment of diseases of plants, animals and man; and biodegradation of...
toxic chemicals and other materials present in the environment. Most of the recent advances in the current understanding of genetics at the molecular level and in genetic engineering have resulted from research involving microorganisms.

Microbiologists work in federal and state departments of public health, the fermentation industry, laboratories of pharmaceutical companies, hospitals and medical schools, and research laboratories of universities, health centers, research foundations and private companies.

Students interested in careers in microbiology should have broad interests in the biological sciences and an aptitude for biology and chemistry. For some areas of specialization, an aptitude for mathematics and physics is also essential.

Departmental courses are designed to provide comprehensive training and the skills required for working with microorganisms, as well as a broad understanding of all aspects of microbial life. Many of the microbiology positions require graduate level studies. In addition to the B.S. degree, the department offers graduate studies leading to the M.S. and Ph.D. degrees in various areas of concentration including virology, microbial physiology, microbial genetics, microbial anatomy, immunology, and several applied areas.

Graduate Programs

Programs of course work and research leading to the degrees of Master of Science and Doctor of Philosophy are offered by the Department of Microbiology.

Prerequisites. Applicants for admission must have received the baccalaureate degree from an accredited college and must have completed a minimum of 30 semester credit hours in biological and physical sciences. The Aptitude Test portion of the Graduate Record Examination is required of all applicants. An applicant will not be accepted unless at least one member of the departmental graduate faculty agrees to act as the applicant’s adviser at the M.S. level. A majority of the departmental graduate faculty must approve an applicant at the Ph.D. level.

The Master of Science Degree. In addition to the general requirements for the degree, the following departmental requirements must be met in attaining 30 credit hours with thesis. The plan of study must include six credit hours in MICRO 5000, one credit hour in MICRO 5160, and 12 credit hours in formal courses in microbiology, of which at least eight credit hours must be at the 5000 or 6000 level, not including MICRO 5000 or other zero-ending numbers except with a prior majority approval by the departmental graduate faculty.

All candidates for the M.S. degree are expected to attend and participate in all departmental seminars. A final oral examination covering the thesis is administered by the advisory committee.

The Doctor of Philosophy Degree. The study plan must include 45 credit hours in formal courses, 22 hours of which must be in microbiology courses at the 4000, 5000 or 6000 level. In addition, two credit hours in MICRO 5160 are required. Students are required to attend and participate in all departmental seminars each semester. Proficiency in a foreign language (French, German, Italian, Russian, or Spanish) must be demonstrated and is required for all Ph.D. candidates in microbiology. This requirement may be satisfied by: (a) passing a graduate proficiency examination given in the Department of Foreign Languages and Literatures or (b) taking and passing (no grade less than “C”) the two-semester introductory sequence in the language of choice (e.g., FRNCH 1115 and 1225).

Candidates for the Ph.D. degree must pass both a written and an oral qualifying examination. The written examination, given the last week of May and October of each year, will consist of questions covering the following six areas: (1) microbial systematics and evolution, (2) microbial physiology, (3) microbial ecology, (4) virology, (5) immunology, and (6) genetics. The oral examination will be administered by the candidate’s advisory committee only after the written examination has been passed. The final examination covering the thesis (the candidate may be responsible for additional areas if the committee has stipulated such as a requirement for passing the qualifying examination) is given promptly after the candidate has given a public seminar on his or her research work.

In agreement with the U.S. Air Force and the U.S. Army, OSU recognizes separate departments of Aerospace Studies and of Military Science as integral academic and administrative departments of the University. These two departments are administered within the framework of the College of Arts and Sciences. The two departments provide instruction under the basic and advanced Reserve Officers’ Training Corps (ROTC) programs.

Scholarships

Both the Army and Air Force ROTC offer full scholarships each year for students enrolling in the program. ROTC scholarships provide full payment of tuition, fees and books and $100.00 per month subsistence allowance. Applications for 4-year scholarships may be obtained through local high school principals or advisers and the ROTC departments. Information concerning 2- and 3-year scholarships (male and female) may be obtained by direct contact with the ROTC departments located on campus in Thatcher Hall.

Degree Programs

A Bachelor of Science degree in aerospace studies or military science is offered in the College of Arts and Sciences upon completion of 127 semester credit hours. It combines ROTC training with the College's general education and degree requirements and the opportunity to develop strong programs in a wide variety of other fields. The curricula for these degrees prepare the student for further professional work and for duty with the Armed Forces.

Flexibility

ROTC at OSU offers a variety of programs, giving the student considerable flexibility in charting a path to commissioning in the Army or the Air Force. Programs are designed so that individuals in all OSU colleges, departments and majors can tailor their academic/ROTC curriculum in order to attain commissioned status. Opportunities also exist in both Army and Air Force ROTC for the student to "test the water" early in his or her academic program by participating in basic familiarization courses. Those interested in learning more about ROTC at OSU, or in enrolling, are urged to contact the professor of Aerospace Studies or professor of Military Science in Thatcher Hall on campus.

AEROSPACE STUDIES

Professor of Aerospace Studies and Head Col. Byron W. Scott, M.S.

The Air Force ROTC basic program consists of one classroom hour and one leadership laboratory period per week for one credit hour per semester during the freshman and sophomore years. The advanced AFROTC program (junior and senior years) is open on a competitive basis to any student having two years of enrollment remaining. The advanced courses each include three classroom hours per week and one hour of leadership laboratory for three semester hours of credit. Class work and laboratory involvement are designed to prepare the student for his or her future role as a leader in the U.S. Air Force. No military obligation is incurred for non-scholarship students enrolling in the freshman and sophomore years. Students in the advanced program must successfully complete at least three hours of English composition and a mathematics reasoning course. Those students accepting an AFROTC scholarship must successfully complete at least one year of a modern foreign language.

Students (male and female) completing the advanced Air Force ROTC program are commissioned as second lieutenants in the U.S. Air Force. Candidates for flight training incur an active duty service commitment of six to 10 years, commencing with completion of flight training. Nonflying officers have a four-year commitment. During their initial active duty, officers compete for the opportunity to attain career status.
Students interested in the Department of Military Science are encouraged to visit with departmental faculty members at any time for further information concerning departmental course offerings and class sequence. A number of two- and three-year scholarships are available through the Department. Prior enrollment in military science is not a prerequisite for departmental scholarship application.

Music

Professor and Head Gerald D. Frank, D.M.A.

The music program at OSU serves students who plan careers in the field of music as well as those who desire to participate in any element of a comprehensive music program. Professional instruction prepares students for careers in performance, teaching, or the music industry. The OSU undergraduate degrees are also excellent preparation for graduate school and for church positions.

The student planning to major in music at the university level should consider his or her background carefully. It should include a strong interest in music during high school years and a talent for performance in vocal or instrumental music. Individual lessons, fundamental theory knowledge, and basic piano ability will also be helpful.

The music major may choose from the following degrees: (1) Bachelor of Music (B.M.) in performance, (2) B.M. in instrumental/vocal music education, (3) B.M. with elective studies in business, and (4) Bachelor of Arts (BA) in music. In addition, the Bachelor of University Studies allows the interested music student to major in music while earning a second major in an outside field.

The student majoring in a discipline other than music may participate with music majors in all ensembles (choirs, opera, orchestra, wind ensemble, marching band, concert band, jazz bands, and chamber groups) and courses, as well as individual lessons for academic credit.

An active scholarship program provides assistance to music majors as well as non-majors. Students are invited to write for audition information.

Faculty members, students and ensembles present over 100 concerts and recitals annually. The department also supports an active program of extension and outreach opportunities.
Physics

Professor and Head H. Larry Scott, Ph.D.

Cosmology and the physical origin of the universe, the use and development of lasers, the nature of the fundamental particles that make up an atomic nucleus, the properties and development of new and exotic materials, and the formulation of predictive theoretical models to describe nature are some of the subjects pursued by physicists. A professional physicist needs to possess critical skills of observation and evaluation. The development of these skills in both experimental and theoretical work provides the focus of the undergraduate program and prepares a student for a career in either applied or pure physics. Physics majors acquire a versatility which makes them highly competitive for careers in industrial research and development, national laboratories and academia.

The physics program provides a common set of experiences in physics, mathematics and other sciences during the first two undergraduate years. A physics major continues beyond these courses in an individually tailored program in the department’s options program. The final two years are designed to suit the student who anticipates graduate research, as well as those who will seek employment immediately after graduation. The choices offered to undergraduates reflect their career goals. Programs exist in pure physics, materials science, biophysics, engineering physics, chemical physics and geophysics. Many of these include selected courses in engineering, computer science, biological science and mathematics. With this versatility students can choose (in consultation with their advisers) a program which will suit their evolving career goals in the latter part of their undergraduate studies. Continued communication, beginning with the student’s first semester in the Department of Physics, establishes a productive rapport between the physics major and his or her faculty adviser. A physics minor is also possible and the requirements can be obtained from the department head.

Graduate Programs

Prerequisites. Thirty semester hours of physics beyond the elementary course work, and mathematics courses through advanced calculus or differential equations are required.

The Master of Science Degree. The requirements for the master’s degree in physics include the successful completion of 30 semester credit hours beyond the B.S. and the submission of an acceptable thesis based on original and independent research. The following physics courses are required: PHYS 5113, 5313, 5413, 5453, 5613. In addition, nine semester credit hours of electives must be completed in physics, mathematics, or an allied field. These must be chosen in consultation with the student’s adviser. For example, an advanced course in mathematics along with Solid State I and II in physics might be reasonable choices for someone interested in a materials specialization. For others, one or more courses from electrical engineering might be preferable. A maximum of six credit hours of PHYS 5000 may be applied toward the M.S. thesis. The student must successfully defend the thesis in an oral examination.

The Doctor of Philosophy Degree.

Prior to the appointment of the advisory committee, as described in the "Graduate College” section of the Catalog, a comprehensive written examination must be taken. This examination will cover the content of the course work required, up to and including the M.S. degree, and will be given once a year. It will be given in four parts of three hours each. The results of this examination will be included in a review by the Department of Physics to determine whether the student should be admitted to Ph.D. candidacy.

The following physics courses are required: PHYS 5213, 5313, 5413, 5453, 5613, 6313. Also, four of the following six courses must be taken: PHYS 5133, 5263, 5663, 5713, 6213, 6713. Additional courses reflecting the candidate’s specialization will be required by the advisory committee. Ninety semester hours of credit beyond the bachelor’s degree are required. A minimum of two-thirds of the graduate course credits must be in physics. No more than six credit hours of physics at the 4000 level can be counted toward graduate credit and no more than 12 total credit hours in all subjects at the 3000 or 4000 level can be counted toward graduate credit. Courses taken at another institution will be evaluated by a faculty committee to determine whether they satisfy any requirements.

The most important single requirement for the Ph.D. in physics is the presentation of an acceptable dissertation which represents original research work by the student and which demonstrates the student’s ability to do independent study as well as to plan and carry out future research in his or her field.

Political Science

Professor and Head Robert E. England, Ph.D.

Political science is the study of politics, government and public policy at the local, state, national and international levels. It is concerned with struggles for power and the exercise of power in the form of institutions, laws and public policies.

Political science seeks to reveal the patterns of behavior associated with politics, to discern the decision-making process in government, to explain the functioning of political and governmental institutions, to appraise alternative public policies and to assess government’s role in society. The principal fields of study in political science are political theory, public law, comparative politics, international relations, public administration, public policy, and American political behavior. Students may receive the Bachelor of Arts or Bachelor of Science degree in political science with a concentration in any of the fields of study.

Political science graduates enjoy a variety of career opportunities—staff positions with international, federal, state and local government agencies; teaching positions in college and high school; policy analysis and research positions with governments, businesses, civic groups and foundations; positions in journalism, public relations, political consulting or lobbying; and, via law school, the legal profession.

OKLAHOMA STATE UNIVERSITY 71
Graduate Programs

The Department of Political Science offers a program leading to the Master of Arts degree in political science. Candidates for the MA degree may choose from two plans. Plan A permits specialization in three areas of political science chosen from American politics, comparative politics, international relations, public administration, and public policy, or some other field of specialization offered under the faculty mentoring program. Plan B permits concentration in public administration and public policy. Both programs are designed to prepare men and women for future work in Ph.D. programs as well as for policy analysis, general administration and public management careers in government, the nonprofit sector, the private sector and research organizations.

Admission Requirements. Admission requirements include a 3.00 GPA; two letters of recommendation; STAT 2013; and the Graduate Record Exam (GRE).

Degree Requirements. In addition to the general requirements of the Graduate College, requirements for the Master of Arts degree with a major in political science are listed below.

Plan A:

1. A minimum of 33 credit hours in political science or closely related courses, including three hours of methods; 18 hours of political science graduate seminars (seminars numbered 5000 or above); either a thesis (six hours) or a three-hour creative research paper, and additional graduate-credit courses in POISC or closely related fields to complete the 33-hour requirement.

Students offering a field from outside political science may use up to six hours of nonpolitical science seminar courses to complete their 18-hour seminar requirement.

2. Satisfactory completion of two-hour comprehensive exams administered in the last semester of the student's program, covering three of the five fields (American, comparative, international, policy, public administration). One field offered under the faculty mentoring program or based on courses from outside political science may be substituted for examination purposes.

3. A minimum grade-point average of 3.00.

Plan B:

1. A minimum of 36 credit hours in political science or closely related courses which includes a three-course required theory component (nine hours), a two-course required methods component (six hours), a three-credit-hour required internship, a three-credit-hour required creative component (master's research paper) and 15 hours in an area of specialization.

2. Satisfactory completion of a four-hour comprehensive exam administered in the last semester of the student's program.

3. A minimum grade-point average of 3.00.

Pre-law. Many degrees are applicable. See "Arts and Sciences Special Academic Programs-Pre-law."

Premed and Pre-vet. Many degrees are applicable. See "Arts and Sciences Special Academic Programs-Pre-professional Programs in the Health Professions."

Graduate Programs

Employment in the professional field of psychology almost always requires a graduate degree. Psychologists with advanced degrees have relatively exclusive claim to some professional positions.

The Department of Psychology offers programs of study leading to the degree of Doctor of Philosophy. Students applying for the doctoral degree should have the following prerequisites: introductory psychology, quantitative psychology, physiological psychology, and experimental psychology.

Students in the doctoral program first work toward a Master of Science degree. In addition to meeting the general requirements of the Graduate College, for completion of the Master of Science, students must also:

1. Complete both semesters of a proseminar in general psychology and two semesters of quantitative psychology along with other course credits totaling 32 credit hours.

2. Perform a satisfactory research project, supervised and reviewed by appropriate faculty members.

Following the completion of the master's degree, the student may be admitted to doctoral status in clinical psychology or experimental psychology.

Psychology

Associate Professor and Head
Vicki Green, Ph.D.

Undergraduate study in psychology provides a background which may be of value to students in personal, social, educational and vocational situations. Many students are better able to understand and deal with their own behavior and that of others as a result of such training. Moreover, the course of study involves examination of some of the major social problems of our time and explores ways of coping with these problems.

A bachelor's degree in psychology is useful in a wide number of occupations in business, education and industry. The range of positions obtained by graduates covers almost all occupations requiring direct personal contact with other people. Some examples are supervision, training, sales, public relations and interviewing. Also included are positions with city, state and federal agencies, and in applied research. Although there is no license or certificate to teach psychology in the schools, it is possible to get a teaching certificate or licensure in social studies education with endorsement in psychology while pursuing a major in psychology. Persons interested in such teaching should contact the Office of Teacher Education. (See 'Teacher Education Programs' in the "College of Education" section of the Catalog.)

Religious Studies

Professor Marvin S. Keener, Ph.D.

Courses in religious studies are a vital part of a liberal arts education. The field involves the objective study of religious belief, literature and practice around the world. Opportunity is given for serious and objective study of these aspects in relation to major religions of past and present cultures. Special attention is given to the historical bases of world religions as well as to their effect upon present-day societies, in both the East and West. Courses are offered in several world religions, biblical studies, religious thought, and religion and culture.

Courses are open to all students without regard to personal views or affiliations. No attempt is made to indoctrinate or to force a particular view upon the student. Emphasis is always placed on the academic study of religion rather than the practice of a particular form of religion. The undergraduate courses enable students to satisfy humanities requirements and also provide an excellent background for many types of graduate professional programs.

Sociology

Associate Professor and Head
George Arquitt, Ph.D.

Sociology is the study of people as they live their lives in society. The emphasis is on understanding why people act as they do in a particular society, community or social group.

Many different points of view are represented in the departmental faculty. Some believe that a scientific explanation is central to understanding people in society; others believe that human values and subjective understandings should be the major emphasis in sociology. In all cases, there is an agreement that sociology is an exciting field of study.

The courses in sociology are designed to help the student understand the influence of society on individuals, and find ways to interpret this understanding in real-life working situations. Topics covered include anthropology, corrections, gerontology, social problems and deviance, research methods, social organization, social psychology, social work and theory. Many undergraduate majors elect to have a supervised work-related internship experience in a social agency of their choosing. A full-time adviser is available to assist undergraduate students in the selection of courses and to answer their many questions related to career planning. Faculty members are also available to assist and advise students.

BA and B.S. degrees are offered in sociology. Both BA and B.S. degrees include programs in corrections, pre-social work, social gerontology, and juvenile treatment. The general sociology degree has career paths including social aspects of law, social aspects of medicine, organizations and administration, social research and analysis, urban/population trends and issues, and minorities.
ANTHROPOLOGY

Anthropology is the study of human-kind in all its similarities and differences, both biological and behavioral. As an academic discipline it covers a wide range of subject matter ranging from fossil remains related to early human forms and the biological characteristics of contemporary human populations (physical anthropology) to behavior within contemporary human societies (cultural anthropology). Offerings in anthropology provide students with a basic introduction to the concepts and principles found in these three subdisciplines.

Regular course offerings include an emphasis on North American Indian cultures and archaeology. Other courses deal with anthropological methods and theory.

Graduate Programs

The Department of Sociology offers the Master of Science and Doctor of Philosophy degrees. Programs are available to prepare students for appointments to the staffs of sociology departments in colleges and universities, and for research positions in universities, businesses, social agencies, and various levels and units of government. The department offers concentrations in methodology, clinical and applied sociology, gerontology, family and sex roles, industrial and complex organization including stratification and other dimensions of social organization, social psychology, and theory.

The department also offers a Master of Science degree in corrections. This program is suitable for students wishing to specialize in juvenile or adult corrections, as administrators, case managers, counselors, researchers, and as probation and parole supervisors.

The department offers employment to qualified graduate students as graduate assistants who may teach introductory courses, assist senior professors in the conduct of courses, or participate in ongoing research programs. These teaching and research experiences constitute an invaluable part of the student’s professional preparation.

Admission Requirements. Students seeking admission to graduate programs in the department must be accepted by the admissions committee, chaired by the graduate student advisor, prior to official admittance and meet the following requirements:

1. Master’s level students must have earned an overall grade-point average of 3.00 (on a 4.00 scale) in an undergraduate program and have at least 12 semester credit hours in sociology. Students seeking admission to the Ph.D. program must have earned an overall grade-point average of 3.50 (on a 4.00 scale) in the master’s program in sociology or a closely related field. Deficiencies in either degree program may be corrected through course work, without degree credit for such courses, as determined by the graduate student advisor and admissions committee.

2. Those not meeting the grade criteria must take the general aptitude section of the Graduate Record Examination and score a total of 1000 from the verbal and quantitative sections. Under exceptional circumstances other types of supportive evidence can be considered when the applicant does not meet the above criteria.

3. Three recent letters of reference from academic persons qualified to evaluate the applicant’s ability to perform graduate work must be received.

4. All Ph.D. applications should be accompanied by a statement of professional goals and evidence of academic ability (such as thesis or term papers).

Applicants who have deficiencies in any of the above areas, may submit the results of the Graduate Record Examination in support of their application, and that score may be substituted at the option of the faculty.

Detailed information on each program is available by writing to the department or coming by the departmental office and requesting a Graduate Student Manual.

Speech Communication

Associate Professor and Head
Paul D. Harper, Ph.D.

The Department of Speech Communication affords a variety of opportunities for students who wish to become involved in the excitement of a changing world. Not only does the department offer academic subjects leading to both undergraduate and graduate degrees, but students are afforded an opportunity to gain practical experience in interpersonal and public communication.

In speech communication, students are prepared for positions in industry and business and are qualified to work with interpersonal communication problems. Graduate work in this area increases the student’s career opportunities in the field of communication consulting. In addition, the department’s concern with related areas, such as sociology, business and psychology, allows the admission of graduate students with undergraduate preparation in some of these fields.

Graduate Programs

Prerequisites. To enter the program, the student should have a minimum of 12 semester credit hours of undergraduate courses in speech communication or the equivalent.

Admission Requirements. Applicants normally should have at least a “B” grade-point average at the undergraduate level and strong recommendations from those familiar with the student’s previous academic background. Beyond that, the number of students admitted will depend on the number of places available in the program.

Program Requirements. The complexity of today’s society requires an individual capable of solving a wide range of problems. In order to meet this need, the speech communication graduate program aims at producing:

1. individuals capable of fulfilling the role of a communication consultant or interventionist within governmental, business and industrial, public service, educational and community organizations;
2. individuals capable of using methods and procedures of the behavioral sciences in investigating and solving practical as well as theoretical problems in communication;
3. individuals with the background to pursue doctoral programs in communication; and
4. competent teachers of communication for two-year and four-year colleges as well as the common schools.

The student may earn the Master of Arts degree under one of the following plans:

Plan I-A minimum of 24 semester hours of speech communication courses and a thesis for which six credit hours is earned.

Plan II-A minimum of 30 semester hours, no fewer than 24 of which must be in speech communication, and a project for which two hours may be earned.

Plan III-A minimum of 36 semester hours, no fewer than 24 of which must be in speech communication, with no thesis or project.

The plan that a student chooses must be approved by the graduate faculty of the Department.

Examinations. Every student must pass a written and oral comprehensive examination. The student following Plan I or II must also pass an oral examination over his or her thesis and related materials.

Speech and Language Pathology and Audiology

Professor and Head Cheryl Scott, Ph.D.

The Department of Speech and Language Pathology and Audiology prepares students through the master’s level to serve handicapped individuals of all ages who exhibit speech, language and/or hearing disorders. The undergraduate program is a preprofessional degree program. It first emphasizes the study of the development and functioning of the individual who presents normal speech, language and hearing. It also stresses academic and clinical practicum experiences in the nature, symptoms and treatment of those who possess various kinds of communication disorders.
The master's level program is designed to provide students with intensive course work in the various communication disorders and exposure to a wide variety of challenging clinical activities. This includes a full time, off campus clinical externship for at least eight weeks which serves as an excellent transition from on-campus practicum to an actual professional position after graduation. Students who graduate from this department are prepared to take positions in public schools, hospitals, community speech and hearing centers, private practices and other related settings. All graduates meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association and licensure by the state in speech and language pathology. In addition, almost all students elect to earn the state teaching certificate. The program is nationally accredited in speech-language pathology.

**Graduate Programs**

**Prerequisites.** Other than the general requirements of the Graduate College, no other prerequisites are required for the Master of Arts degree. The amount of course work taken at the undergraduate level in speech and language pathology and related areas will determine the amount of time required for the degree.

**Admission Requirements.** Applicants should have a grade-point average of 3.00 ("B") in all work and at least a 3.00 in the major, strong letters of recommendation from those familiar with the student's previous academic background, and GRE scores acceptable to the Graduate Faculty. Beyond that, the number of students admitted will depend on the number of places available in the program.

International students follow the same application procedure as U.S. students with one addition. If English is not the student's native language or she or he is required to score a minimum of 550 on the Test of English as a Foreign Language (TOEFL) and a minimum of 220 on the Test of Spoken English (TSE). It is especially important that students have readily intelligible spoken English, because they will be conducting therapy sessions in English. International students are eligible to apply for graduate assistantships which also qualify them for in-state tuition. The International Student Services Office is available on campus to assist international students.

**Program Requirements.** The program leading to the Master of Arts in speech provides a thorough exposure to the nature and causes of communication disorders and to clinical procedures, including extensive practical experience within the OSU clinic and in a variety of off-campus settings, including a full-time externship for at least eight weeks toward the end of the program. All practicum experiences are supervised closely by faculty members or by other highly qualified and certified speech and language pathologists and audiologists. The program leads to the certificate of clinical competence of the American Speech-Language-Hearing Association, state teacher certification, and state licensure in speech pathology.

The student may earn a degree under one of the following plans:

**Plan I**

- A minimum of 27 semester credit hours in courses that examine the nature, causes and treatment of communication disorders and related areas, and a minimum of nine semester credit hours in clinical practicum courses. This includes an eight-week off-campus internship for which the student may receive up to six semester credit hours.

**Plan II**

- A minimum of 21 semester credit hours in courses that examine the nature, causes and treatment of speech communication disorders and related areas including six credit hours for a thesis; a minimum of nine semester credit hours in clinical practicum courses including the eight-week internship.

The plan that a student follows will be determined by the student in consultation with the adviser and with the approval of the graduate faculty in the area of speech and language pathology. Regardless of the plan chosen the student must complete the academic and clinical practicum requirements necessary for clinical certification by the American Speech-Language-Hearing Association.

**Examinations.** Students following Plan I must pass comprehensive examinations before graduation. Students following Plan II will not be required to take comprehensive written examinations, but must pass an oral examination over the thesis. All students are required to submit a report at the termination of the externship which critically evaluates the experience.

**Nontraditional Students.** Part-time graduate study is encouraged. Courses are scheduled conveniently in the evenings and during the summer term to accommodate nontraditional students who commute to campus. Students holding undergraduate degrees in other fields are encouraged to apply for admission. Undergraduate prerequisites will add approximately 30 credit hours to the program.

**Statistics**

**Professor and Head J. Leroy Folks, Ph.D.**

Statistics is the science of learning from data. It is concerned with the development of theory and with the application of that theory to the collection, analysis and interpretation of quantitative information.

Because statistics is important in many scholarly disciplines, a degree in statistics provides the opportunity to enter not only the statistics profession but also many other fields which make extensive use of statistics. The areas of application include agriculture, the biological sciences, engineering, the physical sciences, the social sciences, education, business and home economics, among others. Statistics also promises to be important in emerging endeavors such as pollution and environmental research, energy utilization and health-care administration.

Those who pursue the study of statistics should be interested in scientific inquiry and should have a good mathematical background. In addition it is desirable that they have a genuine interest in some other subject which uses statistics.

Careers in government, industry and education, involving the disciplines previously mentioned, are open to the statistics graduate. In government and industry a statistician usually serves as a researcher or as a consultant to research scientists and decision-makers. In education, of course, the teaching function is added to those of research and consultation. In almost all careers, the statistician uses the computer.

The Statistical Laboratory operates within the Department to provide statistical consulting to researchers-both faculty and student-across the campus.

The Department of Statistics offers the B.S. and M.S. degrees to those interested in applications of statistics, and the Ph.D. degree to those who wish to make original contributions to the theory of statistics.

**Graduate Programs**

**Admission Requirements.** It is necessary to have an undergraduate degree, not necessarily in statistics or mathematics, to begin a program of study toward the master's degree in statistics. In some instances, it may be advantageous to have an undergraduate degree in another field. However, the student should have acquired a good mathematical background as an undergraduate. This should be equivalent to the required mathematics courses in the bachelor's program (MATH 2265, 2365, 2613, 3013, 4013). Students admitted to the program with deficiencies will be required to remedy such deficiencies.

**The Master of Science Degree.** The Master of Science degree in statistics may be completed by following one of the three plans listed in the “Graduate College” section of the Catalog. Normally, the all-course work plan will be initiated at the suggestion of the faculty. Each student will be required to attain an introductory knowledge of some field of application outside of statistics, mathematics and computer science. This requirement may be satisfied by having taken a three-hour graduate course in an approved field of statistical application. Each student is required to have completed COMSC 2113 or to have demonstrated competence in a procedure-oriented language such as FORTRAN.

**The Doctor of Philosophy Degree.** The Ph.D. requires the completion of 90 hours beyond the B.S. degree. A maximum of 30 of these credit hours may be earned by research for the dissertation. Each student will be required to attain an introductory knowledge of some field of application which may be satisfied by taking two three-hour graduate courses outside the fields of statistics, mathematics and computing. Each student is required to have completed COMSC 2113 or to have demonstrated competence in a procedure-oriented language such as FORTRAN.
Theater

Professor and Head Kenneth Cox, Ph.D.

The program in theater provides course work and practical experience in all areas. The degree programs are broadly based with academic, humanistic and artistic approaches to the subject matter. Training typically involves not only the most obviously theatrical disciplines such as acting, but also considerable technical skills, literary and historical knowledge, artistic expression, and self-discipline.

Study of theater can lead to many careers besides those in the performing arts. Fields where theater study can be especially helpful include business management, sales, law, politics, teaching, counseling, ministerial professions, or any career area where self-awareness and effective personal communication are essential.

Ambitious seasons of varied productions offer practical experience for both majors and nonmajors. A vigorous student organization develops theater-related projects and provides many services to the production program.

Students with a major interest in theater choose a Bachelor of Arts degree. Students interested in preparing to teach theater and speech in grades 7-12 may choose the B.S. degree in speech/drama education. A strong component of theater courses may also be included in the individualized curriculum leading to the Bachelor of University Studies degree.

Graduate Programs

The Department offers work leading to the Master of Arts degree in speech. The enrollment in the program is typically small, allowing a great deal of individual contact with faculty members and considerable latitude in developing the plan of study.

Students are trained in all aspects of the discipline with the aim of producing graduates: (1) who will be effective teachers and artists in two- and four-year colleges as well as secondary schools; (2) who are artists and/or technicians highly qualified for professional positions; or (3) who have the appropriate background to pursue further study toward M.F.A or Ph.D. degrees.

Zoology

Professor and Head Jerry Wilhm, Ph.D.

The Department of Zoology offers B.S. degree programs in biological science, physiology, wildlife and fisheries, ecology, and zoology.

The degree in biological science is available for students wishing to obtain a broad program encompassing all of the life sciences. By including appropriate course work, students can obtain licensure to teach in the secondary schools. Requirements for admission to dental, medical and other health-related professional schools can be met through the biomedical option of the biological science degree.

The undergraduate degree in physiology is intended primarily as preparation for graduate school or a medically-related professional school. With its relatively large number of free electives, the B.S. degree in physiology is also an excellent liberal arts experience. The bachelor's degree in physiology requires participation in undergraduate seminars and upper-division course work in general biology, genetics, gross and microscopic anatomy, mammalian and cellular physiology, mathematics, pharmacology, physics, and chemistry.

The wildlife and fisheries ecology undergraduate program involves comprehensive study in the conservation of renewable natural resources, with an emphasis on the optimum balance between wild animal populations and habitat requirements. Courses in the wildlife and fisheries program fulfill the requirements for many other applied and professional careers, including preparation for graduate programs. Undergraduates majoring in wildlife and fisheries ecology may choose from communications, fisheries, and management/research areas. In communications, biological training is combined with course work in journalism, social sciences and the uses of electronic media. Management/research emphasizes applied wildlife and fisheries ecology and offers the best preparation for graduate study.

The B.S. degree curriculum in zoology is designed to provide a background of basic biology and some specialization in that area of zoology in which the student wishes to develop his or her career. The B.S. degree requires courses in cell biology, ecology, evolution, genetics, and vertebrate and invertebrate zoology. To become a zoologist the student must also have a good foundation in the related fields of chemistry, physics, mathematics, statistics, and botany. Zoology provides a background for many applied and professional careers.

Graduate Programs

Programs of Study. Programs of study leading to M.S. and Ph.D. degrees are offered in wildlife and fisheries, ecology, zoology and zoology-physiology. The department emphasizes wildlife and fisheries ecology and environmental toxicology. Specializations of faculty include animal behavior, carcinogenesis, cellular physiology, cytogenetics, developmental biology, ecology, ecotoxicology, evolution, fisheries biology, herpetology, ichthyology, limnology, mammalogy, membrane physiology, molecular systematics, parasitology, physiological ecology, teratology, and wildlife nutrition. The department includes a Water Quality Research Laboratory and a Cooperative Fisheries and Wildlife Research Unit.

Prerequisites. Applicants must have completed a baccalaureate degree including 40 semester hours in biology and related areas and have completed the Graduate Record Examination including the advanced test in biology.

The Master of Science Degree. In addition to the general Graduate College requirements, students are required to show competence in either a reading knowledge of a foreign language or relevant research technique such as statistics, mathematics, or computer science. Students must prepare research proposals and complete either a thesis or a report. For the thesis option, 30 credit hours are required; for the report option, 32 credit hours. The plan of study must include at least two credit hours in a seminar.

The Doctor of Philosophy Degree.

In addition to the general Graduate College requirements, students are required to show competence in either a reading knowledge of a foreign language or relevant research technique such as statistics, mathematics, or computer science. This requirement is in addition to the competence demonstrated for the M.S. degree. The plan of study must include at least four credit hours in a seminar. Students must pass written and oral qualifying examinations, prepare research proposals, and complete dissertations based on original research that is worthy of publication.
Robert L. Sandmeyer, Ph.D.,
Dean
John T. Bale, Jr., Ed.D.,
Associate Dean
James G. Hromas, Ph.D.,
Director of Extension
Craig B. Robison, Ed.D., Director
of Student Academic Services

Today's business world is one of excitement. It offers young men and women a challenging professional future as well as the opportunity for meaningful social involvement and civic service. A steadily increasing number of young people today are choosing careers in business as they seek to shape our nation's economic structure and deal with some of its social problems. New developments in automation, economics, and innovations in management techniques and social responsibility are constantly creating new and exciting opportunities. The College of Business Administration (CBA) at Oklahoma State University assists in preparing students for these opportunities.

The College of Business Administration seeks to accomplish three major objectives: (1) to provide students with a liberal education in a program which includes study in four general areas: behavioral and social sciences, communications, humanities and fine arts, and natural science and mathematics; (2) to provide students with an understanding of the functions of business and other economic units in the American economy, which includes study in the basic areas of accounting, economics, business law, finance, management, management information systems, marketing, production and statistics; and (3) to provide students with the opportunity for specialized study in selected major areas of business.

Academic Advisement and Enrollment Procedure
Freshmen will plan their study in conference with a staff adviser in the Office of the Dean of the CBA.
All students should tentatively select a major during their sophomore year. Each student will then be assigned to a faculty adviser from the major field of study. Thereafter, counseling will be provided by the assigned faculty adviser.
The dean and associate dean, as well as the director of the Office of Student Academic Services, are available to all students for counseling on special problems.

Academic Programs
Undergraduate Programs. The Bachelor of Science in Business Administration degree is offered by the five departments and one school of the College. Departmental majors are listed below.
Accounting, with a major in accounting.
Administrative services, with a major in general business.
Economics, with a major in economics.
Management, with majors in management with an option in personnel management; management information systems; and management science and computer systems.
Marketing, with a major in marketing.

Graduate Programs. Master's Degrees.
Two types of master's degrees are available to students desiring to do advanced work in the business area. One of these is the Master of Business Administration degree (which allows concentrations in management, management science and computer systems, marketing or finance) and the other is the Master of Science degree, which requires completion of a graduate major in accounting or economics. Only persons admitted to a graduate degree program may take graduate courses in the College of Business Administration.

Doctor of Philosophy Degree. Graduate work toward the Doctor of Philosophy degree with a major in economics is offered in the Department of Economics. Graduate work toward the Doctor of Philosophy degree with a major in business administration is offered in the departments of Finance, Management, and Marketing and the School of Accounting.

Placement Service
Representatives of more than 100 business and industrial concerns and governmental agencies annually interview graduating seniors of the College of Business Administration.

General Education Requirements
The minimum general education requirements are summarized as follows: not less than 40 semester hours, including six hours of English composition, and 34 hours in the breadth areas. These include: six hours in American history and government and six hours in each of the areas: Social and Behavioral Sciences, Humanities, and Analytical and Quantitative Thought, and four hours in the area of Natural Sciences. No more than 18 of the 34 hours meeting breadth requirements may be in disciplines directly supportive of the major.

Two other requirements include: an "International Dimension" and a "Scientific Investigation" component. These may be met in any part of the student's program, and thus do not necessarily add to the number of hours required. The International Dimension simply requires each student to learn something about cultures and societies outside the United States. The Scientific Investigation Requirement involves some kind of laboratory experience with student involvement. More detail concerning these and other requirements is found in the next section, "Lower-division Requirements."

Lower-division Requirements
Work in the freshman and sophomore years is planned in such a way as to give the student basic information in the general areas of (1) behavioral and social sciences, (2) communications, (3) humanities and fine arts, (4) natural science and mathematics, and (5) business foundation courses. In order to ensure study in each of these five areas, courses totaling up to 59 semester credit hours are required. The student may also select additional hours from courses in these areas, with the opportunity of achieving either further breadth or a certain degree of depth by concentrating these hours in a particular area of interest. As part of the student's general education, one course must be selected that is identified as satisfying the International Dimension requirement.

During the freshman and sophomore years the student will complete courses in each of the following areas:

Behavioral and social sciences: American history, three semester credit hours; American government, three hours; and six hours elected from at least two of the following fields: anthropology, geography (except physical geography courses), history, political science, psychology and sociology.
School of Accounting

Professor and Head Lanny G. Chasteen, Ph.D., CPA

The School of Accounting offers three degree programs in accounting: (1) B.S. in Business Administration with a major in accounting, (2) M.S. in accounting, and (3) Ph.D. in business administration with emphasis in accounting.

The common objective of the B.S. and M.S. accounting programs is to educate students to commence and continue to develop in a wide range of professional accounting careers. The specific objective of the B.S. in accounting program is to provide basic conceptual and business knowledge as a foundation for accounting career development; the objective of the M.S. in accounting is to provide candidates with a greater breadth and depth in accounting than is possible in the B.S. program, in order to prepare graduates for careers as professional accountants in financial institutions, industry, nonbusiness organizations, and public practice.

Students who are considering a professional accounting career should have above-average aptitudes in mathematics and English, disciplined work habits, an interest in working with people and an attitude of service.

The B.S. in accounting, including an auditing course, is acceptable in lieu of three years of required public accounting experience required before a candidate may take the Oklahoma Certified Public Accountants' Examination. The M.S. in accounting earned at Oklahoma State University satisfies educational requirements for C.P.A. candidates in all jurisdictions of the United States.

Considerable electives are available in both degree programs. Specialization in auditing-financial accounting, cost-managerial, or tax-is possible in the M.S. in accounting program.

Candidates for either of these degrees are encouraged to select some electives in quantitative and behavioral science areas.

Graduate Programs

The Master of Science Degree. The specific objectives of the M.S. in accounting are to provide candidates with a greater breadth and depth than is possible in the B.S. program, in order to prepare graduates for careers as professional accountants in financial institutions, industry, nonbusiness organizations, and public practice, and to develop judgmental ability in accounting and related areas. Advanced courses provide a theoretical base for insight into significant problems confronting the accounting profession. In addition, a specialty in taxation is available for interested candidates. The candidate receives assistance from the faculty in selecting a pattern of courses designed to prepare the student according to the chosen professional goals.

Graduates of recognized colleges and universities whose records indicate adequate intellectual capacity and desirable personal characteristics may qualify for admission. The typical applicant admitted to the program has a GMAT score of 525 or above and an undergraduate grade-point average of 3.25 or above.

Prerequisites. The following are required: 24 semester hours of advanced accounting; six semester hours of business law; business calculus; three semester hours each in finance, management, marketing, production, quantitative analysis, business policy, intermediate microeconomics; and 6 semester hours in statistics. As many as eight semester hours of course deficiencies may be removed within the 32 semester hours required for the degree.

The Doctor of Philosophy Degree. The Ph.D. in the College of Business Administration with a major in accounting emphasizes flexibility to meet the particular needs and objectives of individual candidates. The program is designed to provide the highest degree of preparation for the individual student, enabling the student to make significant professional contributions in research, teaching, or in business or government positions.

Graduates of recognized colleges and universities whose records indicate adequate intellectual capacity and desirable personal characteristics may qualify if they have a good academic record and achieve satisfactory scores on the GMAT. Admission is competitive.

The Ph.D. program is designed so that a candidate may, at his or her option, specialize in one of the following accounting areas: auditing, managerial accounting, financial accounting, or taxation. All candidates are required to take a two-semester seminar which provides an overview of relevant academic literature. This seminar is restricted to Ph.D. candidates in accounting. Two minor areas, one of which may be outside the College of Business Administration, are required, in addition to competence in economics and quantitative analysis. The candidate's advisory committee is responsible for assisting in the development of a plan of study encompassing the above areas. Students in residence are required to do teaching or research on a quarter-time basis while earning the degree.

Departmental Clubs and Honor Societies

Alpha Kappa Psi (professional business organization)
Beta Alpha Psi (accounting honor society)
Beta Gamma Sigma (business administration honor society)
Beta Upsilon Sigma (professional business organization)
Business Student Council
Data Processing Management Association
Delta Sigma Pi (professional business organization)
Economics Club
Entrepreneurship Club
Financial Management Association
Graduate Students in Business Administration
Marketing Club
Mu Sigma Omicron (management)
Personnel Association
Phi Beta Lambda (business leadership)
Toastmasters

Graduate Programs

The Master of Science Degree. The specific objectives of the M.S. in accounting are to provide candidates with a greater breadth and depth than is possible in the B.S. program, in order to prepare graduates for careers as professional accountants in financial institutions, industry, nonbusiness organizations, and public practice, and to develop judgmental ability in accounting and related areas. Advanced courses provide a theoretical base for insight into significant problems confronting the accounting profession. In addition, a specialty in taxation is available for interested candidates. The candidate receives assistance from the faculty in selecting a pattern of courses designed to prepare the student according to the chosen professional goals.

Graduates of recognized colleges and universities whose records indicate adequate intellectual capacity and desirable personal characteristics may qualify for admission. The typical applicant admitted to the program has a GMAT score of 525 or above and an undergraduate grade-point average of 3.25 or above.

Prerequisites. The following are required: 24 semester hours of advanced accounting; six semester hours of business law; business calculus; three semester hours each in finance, management, marketing, production, quantitative analysis, business policy, intermediate microeconomics; and 6 semester hours in statistics. As many as eight semester hours of course deficiencies may be removed within the 32 semester hours required for the degree.

The Doctor of Philosophy Degree. The Ph.D. in the College of Business Administration with a major in accounting emphasizes flexibility to meet the particular needs and objectives of individual candidates. The program is designed to provide the highest degree of preparation for the individual student, enabling the student to make significant professional contributions in research, teaching, or in business or government positions.

Graduates of recognized colleges and universities whose records indicate adequate intellectual capacity and desirable personal characteristics may qualify if they have a good academic record and achieve satisfactory scores on the GMAT. Admission is competitive.

The Ph.D. program is designed so that a candidate may, at his or her option, specialize in one of the following accounting areas: auditing, managerial accounting, financial accounting, or taxation. All candidates are required to take a two-semester seminar which provides an overview of relevant academic literature. This seminar is restricted to Ph.D. candidates in accounting. Two minor areas, one of which may be outside the College of Business Administration, are required, in addition to competence in economics and quantitative analysis. The candidate’s advisory committee is responsible for assisting in the development of a plan of study encompassing the above areas. Students in residence are required to do teaching or research on a quarter-time basis while earning the degree.

Departmental Clubs and Honor Societies

Alpha Kappa Psi (professional business organization)
Beta Alpha Psi (accounting honor society)
Beta Gamma Sigma (business administration honor society)
Beta Upsilon Sigma (professional business organization)
Business Student Council
Data Processing Management Association
Delta Sigma Pi (professional business organization)
Economics Club
Entrepreneurship Club
Financial Management Association
Graduate Students in Business Administration
Marketing Club
Mu Sigma Omicron (management)
Personnel Association
Phi Beta Lambda (business leadership)
Toastmasters

Graduate Programs

The Master of Science Degree. The specific objectives of the M.S. in accounting are to provide candidates with a greater breadth and depth than is possible in the B.S. program, in order to prepare graduates for careers as professional accountants in financial institutions, industry, nonbusiness organizations, and public practice, and to develop judgmental ability in accounting and related areas. Advanced courses provide a theoretical base for insight into significant problems confronting the accounting profession. In addition, a specialty in taxation is available for interested candidates. The candidate receives assistance from the faculty in selecting a pattern of courses designed to prepare the student according to the chosen professional goals.

Graduates of recognized colleges and universities whose records indicate adequate intellectual capacity and desirable personal characteristics may qualify for admission. The typical applicant admitted to the program has a GMAT score of 525 or above and an undergraduate grade-point average of 3.25 or above.

Prerequisites. The following are required: 24 semester hours of advanced accounting; six semester hours of business law; business calculus; three semester hours each in finance, management, marketing, production, quantitative analysis, business policy, intermediate microeconomics; and 6 semester hours in statistics. As many as eight semester hours of course deficiencies may be removed within the 32 semester hours required for the degree.

The Doctor of Philosophy Degree. The Ph.D. in the College of Business Administration with a major in accounting emphasizes flexibility to meet the particular needs and objectives of individual candidates. The program is designed to provide the highest degree of preparation for the individual student, enabling the student to make significant professional contributions in research, teaching, or in business or government positions.

Graduates of recognized colleges and universities whose records indicate adequate intellectual capacity and desirable personal characteristics may qualify if they have a good academic record and achieve satisfactory scores on the GMAT. Admission is competitive.

The Ph.D. program is designed so that a candidate may, at his or her option, specialize in one of the following accounting areas: auditing, managerial accounting, financial accounting, or taxation. All candidates are required to take a two-semester seminar which provides an overview of relevant academic literature. This seminar is restricted to Ph.D. candidates in accounting. Two minor areas, one of which may be outside the College of Business Administration, are required, in addition to competence in economics and quantitative analysis. The candidate’s advisory committee is responsible for assisting in the development of a plan of study encompassing the above areas. Students in residence are required to do teaching or research on a quarter-time basis while earning the degree.

Departmental Clubs and Honor Societies

Alpha Kappa Psi (professional business organization)
Beta Alpha Psi (accounting honor society)
Beta Gamma Sigma (business administration honor society)
Beta Upsilon Sigma (professional business organization)
Business Student Council
Data Processing Management Association
Delta Sigma Pi (professional business organization)
Economics Club
Entrepreneurship Club
Financial Management Association
Graduate Students in Business Administration
Marketing Club
Mu Sigma Omicron (management)
Personnel Association
Phi Beta Lambda (business leadership)
Toastmasters
The Master of Business Administration Degree. The Master of Business Administration program provides graduate professional education for individuals preparing for administrative careers in either the private or public sector. It is a comprehensive, yet flexible program providing the knowledge and analytical tools to cope with the complexities of administration within diverse environments.

The program develops fundamental knowledge in the areas of accounting, finance, management, and marketing. Further, it provides critical analytical and research capabilities through research design and computer-based decision courses. The program is a 48-hour, self-contained program. The length of the program for a full-time student is normally two years, but the degree may be earned in less time by attendance in summer session courses. Degree requirements may be reduced by a maximum of six credit hours. To be eligible for this waiver, students must have earned a baccalaureate degree in business administration at an AACSB-accredited institution within the past five years.

The individual course of study follows a personalized, interdisciplinary curriculum developed in conjunction with the graduate adviser. Students may use elective courses either to continue broad managerial development or to emphasize studies in a functional area (finance, management, or marketing).

Outstanding students with baccalaureate degrees in any field of study may apply. All individuals admitted to the program are required to demonstrate proficiency in applied calculus and personal computer usage. The M.B.A. is an advanced studies program that assumes a fair degree of sophistication in mathematics, statistics, computer science, accounting, and economics. Admission is granted to those students whose potential for successful graduate study is clearly indicated by the undergraduate grade-point average, the score on the Graduate Management Admissions Test, letters of recommendation from three sources, past work experience, extracurricular and community activities, and stated career goals.

The Doctor of Philosophy Degree. The Ph.D. in business administration is an interdepartmental program in the College of Business Administration. The degree emphasizes flexibility to meet the particular needs and objectives of individual candidates. The program is designed to provide the highest degree of preparation for the individual student, enabling him or her to make significant professional contributions in research, teaching, or in business or governmental positions.

Requirements. Students select one major area of study from either accounting, finance, management or marketing, and two minor areas. The dissertation is usually written in the student's major area. One of the minor areas must be taken in the College of Business Administration. The second minor may be taken from another department within the College of Business Administration or from a department outside the College.

All candidates for the Ph.D. degree in business administration are expected to have a basic competence in all the major functional areas of business administration-accounting, economics, finance, management and marketing. In addition, basic competence is expected in finite mathematics, calculus and statistics. Students who possess a recent master's degree in business from a program accredited by the Accreditation Council of the American Assembly of Collegiate Schools of Business will generally have satisfied most of the basic competence requirements in these areas.

Administration. The program is administered by the dean of the Graduate College and the department in which the student enrolls with the assistance of a faculty advisory committee.

Major and Minor Areas. The candidate's advisory committee is responsible for assisting in the development of a plan of study that assures competence in the major and minor areas and in economics and quantitative analysis. All Ph.D. students in residence are required to do teaching or research on a quarter-time basis, for at least one semester, while earning the degree.

Graduate Programs The Department offers work leading to the Master of Science degree and the Doctor of Philosophy degree. The graduate program in economics prepares economists for academic careers as well as research and administrative positions in business and government agencies.

Economics

Professor and Head Ronald L. Moonaw, Ph.D.

Economics is a science of choice. The study of economics centers around individuals' attempts to improve their living standards. It provides a comprehensive view of how a society is organized to transform the limited resources available into want satisfying goods and services. It investigates the principles underlying the operation of the economic system, and seeks to determine its weaknesses and to prescribe policy measures that will improve its operation. In the process it ranges over a host of the most important problems confronting contemporary society—the causes of and remedies for depression and inflation, the determinants of and methods for improving income distribution, poverty problems and welfare measures, the role of the government in economic activity, the requisites for economic growth and development, pollution and congestion and their control.

The primary objectives sought in the undergraduate curriculum are to develop a broad understanding and perspective of the economic aspects of people's activities, coupled with thorough training in the fundamental tools of economic analyses. Toward these ends, the development of elementary mathematical and statistical skills is highly desirable, as is complementary study in the social and behavioral sciences, accounting and business administration.

A major in economics prepares students for positions with business firms, nonprofit private organizations and government agencies. It provides an excellent background for the study of law. It qualifies competent students to undertake the graduate work necessary for professional positions in economic research and college or university teaching. A degree option in business economics and quantitative studies is offered to provide additional training in analytical methods and communication skill for both public and private sector occupations.

Graduate Programs The Department offers work leading to the Master of Science degree and the Doctor of Philosophy degree. The graduate program in economics prepares economists for academic careers as well as research and administrative positions in business and government agencies.

Graduate fields of specialization include monetary economics, public finance, international economics, economic development, econometrics, labor and human resource economics, industrial organization, and urban and regional economics. In addition, graduate courses are offered in the history of economic thought and in mathematical economics.

The initial admission to graduate programs is determined by an elected graduate studies committee on the basis of the applicant's previous academic record; verbal, quantitative and analytical scores of the Graduate Record Examination; and letters of recommendation.

The Master of Science Degree. Admission to the master's program in economics is granted to college graduates with superior academic records whose preparation has been broad and thorough. They need not have majored in economics as undergraduates but must be well grounded in economic fundamentals. A good background in one or more such fields as history, philosophy, mathematics, statistics, political science, English, sociology, accounting, finance, psychology, or management is particularly helpful to the graduate student in economics. An applicant whose prior preparation is deficient in some respect, may, if otherwise qualified, be admitted to the program but will be required to remove the deficiency, increasing somewhat the time needed to complete work for the degree.

Each graduate student is guided in the preparation of a program of study by a graduate studies committee. At the master's level there are two options. One option provides the student with a well-rounded program that avoids premature specialization in some particular area of economics. The candidate for the master's degree is required to show competence in basic economic theory and statistical methods, together with an understanding of the fundamental institutional operations of the United States economy. The second option is in applied economics which stresses communication skills, quantitative analysis and course work from other disciplines related to their career objectives.

Each program contains enough electives to permit considerable choice among areas of emphasis. A research report is required of all students who take only the M.S. degree. Those accepted for the Ph.D. program have the option of applying for and receiving the M.S. degree without the research report upon successful completion of the Ph.D. qualifying examination and...
the filing of an approved Ph.D. thesis topic with the Graduate College. A foreign language is not required.

The Doctor of Philosophy Degree. Admission to the doctoral program in economics is granted to college graduates who have satisfactorily completed at least one year of graduate work in economics and who have superior academic records.

This program stresses balanced preparation in economic theory and in mathematics and statistics, as well as competence in subject-area fields of specialization. The student is required to pass qualifying examinations in the theory core and in two fields of specialization. (The theory core is not considered a field of specialization.) Competence must be demonstrated in a third field of specialization, either through coursework or by passing a qualifying examination in the field. An advisory committee helps the student plan a program of study to achieve these objectives. A foreign language is not required.

A dissertation based upon original research is required of the candidate for a Ph.D. degree in economics. A final oral examination deals principally with the dissertation and fields to which it is most closely related.

Finance

Associate Professor and Head
Janice W. Jadlow, Ph.D.

The primary objective of the undergraduate curriculum is to develop a broad understanding and perspective of the financial aspects of people’s activities, coupled with thorough training in the fundamental tools of financial analysis. Toward these ends, the development of elementary mathematical and statistical skills is highly desirable, as is complementary study in economics, accounting and business administration.

The major in finance is intended to prepare students for positions with organizations that require a special understanding of financial problems and financial systems. Students who major in finance are employed by organizations such as banks; the finance, accounting, or systems departments of business corporations; and other organizations that have need of financial expertise. Examples of topics covered in the finance program include financial management, investment theory, securities markets and financial institutions.

Graduate Programs

Concentrations in finance are offered through the Master of Business Administration and Doctor of Philosophy degrees.

The Master of Business Administration Degree. (See "Business Administration.")

The Doctor of Philosophy Degree. The Ph.D., as offered by the Department of Finance, provides intensive study in finance, preparing students for significant professional contributions in university teaching and research or staff positions in business or government.

The program is designed to meet the needs and objectives of individual students, but all students will seek an in-depth understanding of the theoretical foundations of financial economics and develop research skills in finance.

Students will select finance as their major area of study. One or two minor areas are also to be selected. A minor area must be taken in the College of Business Administration from accounting, economics, management, management science, or marketing. The second minor area (if any) may or may not be taken outside the College of Business Administration. As support for the major and minor field of study, each student is required to attain graduate level competence in economic theory and quantitative methods.

Prerequisites for admission to the program are appropriate basic courses in calculus, statistics and computer science.

Competence in planning and executing research is demonstrated by a dissertation. In addition, each candidate must pass comprehensive qualifying examinations and a final oral examination on the dissertation itself.

Outstanding students with degrees in any field of study may apply. Applications for admission are evaluated on the basis of (1) undergraduate and graduate grade-point averages, (2) score on the Graduate Management Admissions Test, (3) a two- or three-page statement describing goals and academic interests, (4) three letters of recommendation, (5) evidence of research potential, and (6) a personal interview when feasible. It is the applicant’s responsibility to see that all materials related to these criteria are received by the Department of Finance.

Management

Professor and Head Wayne A. Meinhart, Ph.D.

The majority of accomplishments in contemporary society are created through the modern organization. Whether the goals are to realize success in business or solve the pressing problems of civilization, organizational systems must be effectively managed in order to maximize the probability of success.

As an area of study, the field of management offers dynamic, exciting possibilities to students interested in business careers, careers with complex nonbusiness organizations, and to students who seek the challenge of working on relevant, real-world problems. The field of management is concerned with the analytical process and the application of relevant theory and research to solving business and organizational problems. Examples of such problems include designing organizational structure, systems and policies; motivating people; planning courses of action; and efficiently allocating and utilizing resources. Since people in the field of management deal with real-world problems, the student should have a deep interest in applying knowledge in problem-solving situations. Examples of the kinds of knowledge applied include, but are not limited to, behavioral science, economics, mathematics and statistics, management information systems, communications skills, accounting, and necessary knowledge of theory and methods in management and management science. It is not necessary for students to have interests in each of these areas since the field offers substantial opportunities for specialization.

The curriculum for the bachelor’s degree requires of all students a common foundation of work in the disciplines listed above. Students are then guided into advanced work in these areas and in their applications of courses in management and management science. Four degree programs are available for choice based upon the student’s interest in specialized work. Each program emphasizes analytical tools, the scientific method and essential theory that will be useful in a rapidly changing world.

Human Resource Management

The option in human resource management is designed to prepare students for careers in personnel and human resource management. Anything that concerns the work force of an organization is the concern of the personnel manager. This includes working with labor relations and collective bargaining, forecasting the demand for personnel, attracting potential employees, orienting them and then developing the careers of those employed. For those who enjoy working with both data and people, a career in personnel management offers many opportunities and the chance for personal growth and development.

Management Information Systems

The major in management information systems (MIS) prepares students for work in information systems development and operation. Both applications of computer systems technology and understanding of data and information flows among the functional areas of business are emphasized. The continuing integration of the computer in all aspects of business and the critical need for responsive management information systems has created a strong demand for graduates who are knowledgeable about both information systems and business. The first two years of study involve the study of mathematics, statistics, and computer science as well as English, accounting, economics, psychology and other courses designed to develop a broad educational background. The junior and senior years focus on aspects of information systems and computer technology including mainframe and microcomputer programming languages, data base management, artificial intelligence, systems
The major in management science and computer systems is designed to prepare students for careers as staff managers in complex businesses or nonprofit organizations. There is a high demand for persons with advanced computer competency with a knowledge of business systems. Many students have a special interest in building concentrations in management systems and computer science. The management science and computer systems program is ideal for this purpose. Examples of topics covered include managerial decision theory, operations research, systems analysis, management information systems and operations management. The study of management science and computer topics may be combined with advanced work in related disciplines for those with appropriate interests. Management science and computer systems majors typically enter business or public organizations as management systems analysts, computer systems analysts, computer managers or management trainees. Many also undertake graduate study to further their professional education.

Graduate Programs
The Department of Management offers work leading to the Master of Business Administration and the Doctor of Philosophy in business administration degrees.

The Master of Business Administration Degree. (See "Business Administration.")

The Doctor of Philosophy Degree. The Ph.D. in business administration program through the Department of Management provides intensive study in management, management science and management information systems. It prepares the student for significant professional contributions in university teaching and research, or staff positions in business or government.

The program is quite flexible and individually structured to meet the needs and objectives of each candidate. Emphasis is placed on an astute understanding of analytical and theoretical foundations of the business environment and development of research capabilities in the area.

The student will select as his or her major area management/administration. Two minor areas are also to be selected. One of the minor areas must be taken in the College of Business Administration from the fields of accounting, economics, finance, or marketing. The second minor area may or may not be taken outside the College of Business Administration. As support for the major and minor fields of study, each student is required to attain graduate level competence in economic theory and quantitative methods.

As prerequisites to the program, all candidates are to have completed appropriate basic courses in calculus and statistics. Likewise, candidates are expected to have a basic competence in the major functional areas of business–accounting, finance, marketing, and economics. Competence in the functional areas is usually assumed for candidates having recently completed an appropriate graduate course in each area through a program accredited by the American Assembly of Collegiate Schools of Business.

The program is quite flexible and individually structured to meet the needs and objectives of each candidate. Emphasis is placed on an astute understanding of analytical and theoretical foundations of the business environment and development of research capabilities in the area.

The student will select as his or her major area management/administration. Two minor areas are also to be selected. One of the minor areas must be taken in the College of Business Administration from the fields of accounting, economics, finance, or marketing. The second minor area may or may not be taken outside the College of Business Administration. As support for the major and minor fields of study, each student is required to attain graduate level competence in economic theory and quantitative methods.

As prerequisites to the program, all candidates are to have completed appropriate basic courses in calculus and statistics. Likewise, candidates are expected to have a basic competence in the major functional areas of business–accounting, finance, marketing, and economics. Competence in the functional areas is usually assumed for candidates having recently completed an appropriate graduate course in each area through a program accredited by the American Assembly of Collegiate Schools of Business.

The program is quite flexible and individually structured to meet the needs and objectives of each candidate. Emphasis is placed on an astute understanding of analytical and theoretical foundations of the business environment and development of research capabilities in the area.

The student will select as his or her major area management/administration. Two minor areas are also to be selected. One of the minor areas must be taken in the College of Business Administration from the fields of accounting, economics, finance, or marketing. The second minor area may or may not be taken outside the College of Business Administration. As support for the major and minor fields of study, each student is required to attain graduate level competence in economic theory and quantitative methods.

As prerequisites to the program, all candidates are to have completed appropriate basic courses in calculus and statistics. Likewise, candidates are expected to have a basic competence in the major functional areas of business–accounting, finance, operations management, organizational theory, economics, and marketing. Competence in the functional areas is usually assumed for candidates having recently completed an appropriate graduate course in each area in an M.B.A. program accredited by the American Assembly of Collegiate Schools of Business.
normally consist of two years of course work and one year (or more) of dissertation work. For those without a master's degree, the plan of study for the Ph.D. degree will typically allow for the granting of an M.B.A. prior to completion of the Ph.D. degree. The program normally takes four years to complete for those without a master's degree. Applications for admission to the program are evaluated on the basis of (1) undergraduate and graduate grade-point averages, (2) score on the Graduate Management Admissions Test or Graduate Record Examination, (3) a two- or three-page statement describing goals and academic interests, (4) three letters of recommendations, (5) evidence of research potential, and (6) a personal interview when feasible. It is the responsibility of each applicant to ensure that all material related to the above criteria is received by the Department of Marketing. Application forms and detailed explanation of the Ph.D. degree in business administration with an emphasis in marketing are available through the department.
COLLEGE OF EDUCATION

Kenneth I. King, Ed.D., Dean and Director of Teacher Education
N. Jo Campbell, Ed.D., Associate Dean of Academic Affairs
Kenneth H. McKniley, Ph.D., Associate Dean of Administrative Affairs and Research
Steven K. Marks, Ed.D., Coordinator of Clinical Experiences

The College of Education administratively includes the departments of Applied Behavioral Studies, Aviation and Space Education, Curriculum and Instruction, Educational Administration and Higher Education, the School of Health, Physical Education and Leisure, and the School of Occupational and Adult Education. The College offers a wide range of undergraduate and graduate programs to prepare individuals for careers in teaching, administration or research in the professional field of education either in the common schools or in institutions of higher learning. Additionally, programs in adult education and technical education prepare individuals for careers as human resource development specialists in business, industry and agency settings. There are a variety of degrees within the College at the bachelor's, master's, specialist and doctoral levels (see the "Degrees Offered" section of the Catalog).

There are increasing opportunities in business, industry and in state and federal agencies for persons with unique preparation in the several education specialties who do not desire to teach in the schools. Individuals interested in a nonteaching major in education should contact the College of Education Office of Student Services for further information.

The College also provides academic preparation for a wide range of specialties:

School Service Personnel-Certification Areas
Administrator (elementary school principal)
Administrator (school superintendent)
Library media specialist

School counselor (elementary and secondary)
School psychologist
School psychometrist

II. Teaching Specialties-Certification Areas
Elementary school certificate (K-8)
Elementary education (Middle school math)
Elementary education (Middle school science)
Elementary-Secondary school certificate (K-12)

M
Foreign language
Health
Physical education/health
Reading specialist
Special education (emotionally disturbed, learning disability and mental retardation)
Secondary school certificate (7-12)

Business education
English
Journalism
Mathematics
Marketing education
Middle school math
Middle school science
Science
Social studies
Speech/Drama
Technical education
Technology education
Trade and industrial education

III. Other Specialties-Noncertification Areas
Adult and continuing education
Aviation and space education
College teaching
Community counselor
Community education coordinator
Counseling psychology
Curriculum and teaching
Curriculum supervision
Educational research and evaluation
Educational technologies
Educational/instructional psychology
Gifted and talented
Health wellness

Higher education administration (junior college, 4-year college, and university)
Higher education counseling
Higher education student personnel
Human development
Human resources development
Instructional systems
Leisure service
Marriage and family therapy
Microcomputer applications
Occupational education administration
Sport science
Therapeutic recreation

Accreditation
All College of Education programs are accredited by the Oklahoma State Regents for Higher Education, the National Council Accreditation for Teacher Education (NCATE), the Oklahoma State Board of Education, the North Central Association of Colleges, and the Federal Aviation Administration.

High School Preparation
Students are expected to satisfy the high school curriculum requirements as determined by the Oklahoma State Regents for Higher Education. It is recommended that the student be involved in clubs and organizations as well as have had some experiences working with children and/or youth depending on the chosen teaching field.

Admission Requirements
For graduation with recommendation for Licensure/Certification the following are required: (1) a 2.50 overall GPA; (2) a 2.50 GPA in the Major Requirements; and (3) a 2.50 GPA in Professional Education Requirements. The student must earn grades of "C" or better in each course in both the Major Requirements and Professional Education Requirements, and must earn grades of "B" or better in all sections of student teaching for recommendation for Licensure/Certification.

Scholarships
The College of Education offers several scholarships for undergraduate and graduate students. The following are scholarships offered by the College of Education:

AOPA Air Safety Foundation Scholarship
Ray E. Brown Memorial Scholarship
Chevron Future Science/Mathematics Teacher Scholarship
College of Education Alumni Association Graduate Scholarship
College of Education Alumni Association Undergraduate Scholarship
College of Education Special Leadershhip Award
Valerie Colvin Scholarship
Community Awareness and Creative Leadership
Community Awareness Scholarship
Paul Douglas Teacher Scholarship
Lucrisha Diane Stephens Earls Memorial Scholarship
Education Student Council Scholarship
Charles A. "Adam" Esslinger Outdoor Recreation Scholarship
Future Teachers Scholarship
Leo Galantis Memorial Scholarship
Aix B. Harrison Scholarship
Frank E. and Harriet E. Hedrick Scholarship
Ora A. Henderson Memorial Scholarship
Daniel and Mary L. Herd Memorial Scholarship
J. Andrew Holley Memorial Scholarship
Robert B. Kamm Fellowship in Higher Education

All student grades are reviewed at the end of each semester to determine whether appropriate academic progress is being made.
Special Academic Programs

The College of Education utilizes the Bachelor of University Studies degree program along with the other colleges in the University. Unique career objectives can be met by working with academic advisers in selecting a specially-tailored program which ultimately leads to a degree.

General Education Requirements

All undergraduate degrees in the College of Education require a minimum of 40 semester hours in general education which includes the following: communication skills, mathematics, United States history and government, science, behavioral studies, arts and humanities, and electives. All degrees are consistent with the University General Education requirements and the Oklahoma State Department of Education standards.

Departmental Clubs and Honor Societies

Collegiate Distributive Education Clubs of America
Education Student Council
Flying Aggies
HEPL Club (health, physical education and leisure)
Kappa Delta Pi (education honor society)
Phi Epsilon Kappa (health, physical education, leisure)
Student Art Education Association
Student Council for Exceptional Children
Student Education Association
Technology Education Collegiate Association

Applied Behavioral Studies

Professor and Head Dale R. Fuqua, Ph.D.

The Department of Applied Behavioral Studies in the College of Education serves the University Teacher Education program and offers degree programs at both the undergraduate and graduate levels. Areas included in the Department are special education, counseling and student personnel, educational psychology and educational research and evaluation. A primary mission of the Department is to apply knowledge derived from psychological and related behavioral studies to the provision of educational and social services.

The Bachelor of Science Degree. Two undergraduate degree programs leading to careers in special education are available. In the Department of Applied Behavioral Studies, the undergraduate student can work toward a Bachelor of Science in Special Education, which includes an option in mental retardation. A joint undergraduate program is also available through the departments of Applied Behavioral Studies and Curriculum and Instruction. This joint program provides the student an opportunity to combine elementary education, mental retardation, and either learning disabilities or emotional disturbance in a five-year program.

Graduate Programs

Special Education Programs. M.S. Programs. Master's level emphasis is available through the M.S. in applied behavioral studies. The academic preparation program in the special education area includes special techniques and arrangements to facilitate the education of exceptional individuals.

Graduate Programs

Counseling and Student Personnel Programs. M.S. Programs. The counseling and student personnel area includes the following comprehensive specializations leading to master's degrees: community counseling, marriage and family therapy, school counseling (elementary and secondary), and student personnel. The M.S. program in community counseling is intended for individuals who wish to serve as professional counselors in a variety of human service rehabilitation and community mental health agencies. Students may choose elective courses in selected areas of specialization such as youth counseling, substance abuse counseling, mental health counseling and rehabilitation.

The M.S. program in marriage and family therapy is an inter-departmental effort of the Department of Applied Behavioral Studies and the Department of Family Relations and Child Development. This program is designed to provide those who are beginning careers in marital and family therapy with the basic knowledge, skills, and professional identity essential to the practice of marital and family therapy at the entry level.

The M.S. programs in elementary/middle school and secondary school counseling are intended for individuals who wish to provide counseling services to children, youth, and consulting services to their teachers and parents in the school setting.

The programs meet academic requirements for state certification as a school counselor. The M.S. programs are designed to meet academic requirements for licensure in professional counseling. Applications for all M.S. programs are due and will be reviewed March 1, June 1 and October 1.

The M.S. in student personnel services prepares students for entry level positions in service delivery and administration in colleges and universities. This program offers practical experience in various student personnel areas to enhance the student's professional development.

Ed.D. Programs. The Ed.D. degree in counseling and student personnel is available with a specialization in either counseling and development or student personnel administration. These programs are designed to meet accreditation standards of the Council on Accreditation for Counseling and Related Educational Programs (CACREP).

The Ed.D. in counseling and development is intended to prepare individuals to function in counseling positions in public schools, junior colleges, vocational-technical schools, college and...
received at the university counseling centers, mental health and a variety of community agencies. In addition, individuals may prepare to teach in counselor education programs in colleges or universities. A minimum of a 36-week counseling internship is required.

Students in the Ed.D. in student personnel administration are prepared to administer a student personnel program at institutions of higher education. The curriculum is sufficiently flexible to permit individuals to develop an area of expertise, such as training and development, organizational behavior, or computer applications. A minimum of a 36-week student personnel administration internship is required.

Ph.D. Programs. The Ph.D. degree offers specializations in counseling psychology, counseling and development, and student personnel administration. The didactic and experiential components of the counseling and development and student personnel administration programs are similar to those in the Ed.D. degree. The 105-graduate-credit-hour Ph.D. degree, however, is designed to meet the needs of practicing professionals who have a strong interest in research. The counseling psychology program leads to the Ph.D. degree in applied behavioral studies and provides professional preparation in psychology as a behavioral science and in counseling as a specialty. The program is organized to meet the accreditation standards of the American Psychological Association. The program is designed to prepare students for counseling, consulting, training and research roles in various settings such as university counseling services and academic departments, child guidance centers, youth services, community mental health clinics, rehabilitation centers, and family services. Students are required to follow a specified sequence of study in which academic course work and practicum experiences are integrated. Students must complete a one-year full-time internship (or a two-year half-time internship).

Applications for all doctoral programs are due by February 1 for the following fall enrollment.

Educational Psychology Programs. M.S. Programs. A master's degree is available through the M.S. in applied behavioral studies with one of three emphases: general educational psychology, instructional systems, or school psychometry. The general educational psychology emphasis focuses on the application of psychological theory and research to the field of education. It is built around courses in learning, instructional psychology, and human development.

The instructional systems emphasis introduces individuals to instructional systems design and prepares them for entry placement in applied settings. Suggested courses include program evaluation, instructional systems, and learning theory.

The school psychometry emphasis prepares individuals to provide psychometric services to schools, youth agencies and other organizations working with children and youth. The school psychometry program may include state certification requirements.

Ph.D. Programs. A doctorate in educational psychology is available through the Ph.D. in applied behavioral studies. The role of educational psychology is to bring together basic behavioral research to serve the practice of education. Although educational psychology is part of the science of psychology, generally an effective scientist-practitioner must draw from all behavioral studies to meet the needs of society today. Students in the program will complete a set of core courses in educational psychology and will also complete coursework in one of three areas of specialization: instructional systems, school psychology, or teaching and research in educational psychology.

The instructional systems specialization provides the individual with a broad set of knowledge and skills which support the analysis, development, evaluation, and implementation of instructional systems. This specialization prepares the individual for careers in areas such as human resource development, instructional technology, and training program development.

The school psychology specialization prepares individuals to be effective school psychologists. Course work focuses on skills and knowledge necessary for state certification and licensure. School psychology certification requirements may be met by completing a psychology master's degree and a 30-hour course sequence. The Ph.D. program includes the requirements for state licensure.

The teaching and research in educational psychology emphasis is designed to prepare the graduate for the traditional academic roles of teacher and researcher. Within this emphasis, students might focus on one or a combination of the following areas: instructional psychology, human development, education of gifted and talented.

Research and Evaluation Programs. M.S. Program. The M.S. degree in applied behavioral studies provides master's level study in educational research and evaluation. The academic preparation program in the educational research and evaluation area includes courses focusing on research and evaluation and courses selected to facilitate the development of a collateral area of expertise in another graduate area of education such as special education, curriculum and instruction, occupational education, or school administration. This M.S. program prepares students for entry level positions in research and evaluation units in school districts, government agencies, and private corporations and foundations.

Ph.D. Program. Doctoral level study in research and evaluation is available through the Ph.D. in applied behavioral studies and provides advanced graduate level preparation in applied educational research and evaluation. This program is designed to include advanced graduate training in two collateral areas, one of which must be in an area of education. The student may select the second collateral area in an adjacent field that provides coursework conducive to the development of skills in educational research and evaluation. The second collateral area might be focused in an area such as curriculum evaluation, mathematical statistics, computer science, or program administration. A required practicum/internship provides an opportunity for practical applications of skills developed during the doctoral program. Graduates of this program will be prepared for positions such as college or university faculty members or directors of education, government agencies, private test corporations, or education foundations.

The aviation education program prepares students for careers in the aviation industry. A bachelor's degree in aviation sciences offers four options: professional pilot, aviation management, airway computer science, and technical services management. Each of these options is tailored to meet specific needs for skilled personnel in the air carrier, aircraft manufacturing and sales, and general aviation segments of the industry. The degree program is a fusion of liberal arts, management, business, and aviation courses. Academic credit is awarded for flight training and associated ground "school" courses.

Students in the professional pilot option will complete all flight training through the Commercial Pilot with Instrument, Multi-engine, and Certified Flight Instructor ratings. Flight Instructor-Instrument and Multi-engine instructor ratings are available as electives. This option prepares individuals for careers as corporate, commuter or airline pilots. Flight training is conducted at Stillwater Municipal Airport by approved flight training contractors. Both flight training and ground school courses are conducted under Federal Air Regulation Part 141.

The aviation management option is designed for students who are interested in a management position in some component of the aerospace industry. Employment opportunities include management positions with fixed-based operators, air carriers, corporate flight departments, commuter and air taxi flight operators, and a variety of functions associated with airport operations. The airway computer science option prepares students for careers in software development with avionics and aircraft manufacturer, the Federal Aviation Administration, or air carriers.
The technical services management option builds on an individual’s technical experience to prepare the student for management positions in all segments of the aviation industry.

The Federal Aviation Administration (FAA) Airway Science program is available for those individuals seeking careers with the federal government. Positions as air traffic control specialists, computer specialists or aviation safety inspectors are available to airway science graduates.

Interested parties may contact the department head concerning graduate programs at the master’s and doctoral level with an emphasis in aviation, management, and related areas.

Oklahoma State University is a member of the University Aviation Association and the National Intercollegiate Flying Association (NIFA). The university aviation club, the OSU Flying Aggies, has been recognized 20 times by NIFA as the nation’s outstanding collegiate aviation club.

**SPACE SCIENCE EDUCATION**

The space science education program presents and supports courses primarily designed for pre- and in-service teachers. The department serves as a regional teacher resource center for reference and printed materials, and audiovisual aids relating to national projects in aviation and space research.

A major responsibility of the department is the coordination of the Aerospace Education Services Program. Oklahoma State University, under contract to the National Aeronautics and Space Administration, provides aerospace education specialists and support staff for the delivery of educational visits to public schools and the delivery of space-related information via satellite. In addition to school programs, the specialists support teacher workshops, and work with professional organizations and civic groups.

---

**Curriculum and Instruction**

Regents Professor and Head
Douglas B. Aichele, Ed.D.

The Department of Curriculum and Instruction (CIED) offers bachelor’s, master’s, specialist and doctoral degrees. Through its programs, it is directly involved in the education and certification of teachers and specialists in several instructional/professional areas. Specific areas of emphasis include preparation of elementary and secondary teachers, reading specialists, instructional media and technology specialists, and supervisors/curriculum coordinators.

Completion of the Bachelor of Science degree in Elementary Education qualifies the student for an elementary Oklahoma license (K-8). This program of study includes course work in general education, in a field of specialization, and in professional education motivated by substantial field-based practicum experiences.

The Bachelor of Science in Secondary Education degree is available in the following discipline areas: English, foreign language, journalism, mathematics, science, social studies and speech/drama. Completion of this program emphasizing one of these areas qualifies the student for a secondary (7-12) Oklahoma license. Students emphasizing art, or foreign language, also receive a degree in secondary education and qualify for an elementary/secondary (K-12) Oklahoma license. Each of these secondary degree programs includes general education courses, extensive specialization course work in the discipline area, and professional education courses motivated by substantial field-based practicum experiences.

Programs leading to an Oklahoma license as a curriculum administrator, reading specialist and as a library media specialist are also available through the Department.

In addition to these degree/certification offerings, the department sponsors the Reading and Mathematics Learning Center jointly with the Education Extension office. This clinic provides a valuable service to the community as well as opportunities for research and practicum experiences for graduate students and faculty members.

The Department also sponsors the Microcomputer Technology Instructional Laboratory, the Reading and Mathematics Learning Center, and the Natural Resources and Environmental Education Center.

**Graduate Programs**

The Department of Curriculum and Instruction offers graduate degree programs at the master’s, specialist and doctoral levels. While specialization is required, maximum program flexibility enables students to meet their individual goals. These degree programs are designed to prepare persons to enter public or private elementary and secondary schools as teachers, curriculum directors, department heads, directors of learning resource centers, reading coordinators, team leaders, and research specialists. In addition, they prepare persons to assume teaching positions in colleges and universities where they become methods instructors and/or researchers in the discipline-related areas of education.

The Master of Science Degree. A student may earn the degree of Master of Science (M.S.) in curriculum and instruction with emphasis in curriculum/supervision, elementary education, information/communication technology, reading, and secondary education. Within these degree emphases, a student can further specialize in such areas as art, curriculum/instruction, early childhood education, foreign language, language arts, mathematics, science, and social studies. Students planning an emphasis in secondary education must incorporate graduate course work from an academic discipline.

The master’s degree program is also frequently designed to qualify persons for an OSU recommendation for state licensure in a specific area. In addition to state licensure in those programs listed above, course work leading to an OSU recommendation for state licensure in school administration may be incorporated into a master’s degree program.

Course work leading to the Master of Science degree in curriculum and instruction with emphasis in curriculum/supervision, elementary education, information/communication technology, or reading is available through the University Center at Tulsa (UCT). OSU course work taken through UCT qualifies as residence credit course work.

In completing the master’s degree, students elect one of three plans:

Plan I (30 hours)-The student completes a minimum of 24 credit hours of approved course work and writes a master’s thesis for which six semester hours of credit are granted.

Plan II (32 hours) The student completes a minimum of 30 credit hours of approved course work and writes a master’s report for which two semester hours of credit are granted.

Plan III (36 hours)-The student completes a minimum of 36 credit hours of approved course work which includes a creative component. The creative component must be explicitly identified on the plan of study.

Unqualified admission to the master’s degree program is granted to a graduate of an accredited college or university who has made application to the Graduate College (described under "General Regulations" in the "Graduate College" section and who has achieved an acceptable grade-point average, i.e., a grade-point average of at least (1) 3.00 for all undergraduate course work; or, (2) 3.25 for all undergraduate upper-division and graduate course work; or, (3) 3.50 for OSU graduate course work included in the initial nine hours of study.

Provisional admission to the master’s degree program is granted to a graduate of an accredited college or university who has been admitted to the Graduate College and who has achieved a grade-point average less than the minimum required for unqualified admission but at least (1) 2.60 for all undergraduate course work; and, (2) 2.80 for all undergraduate upper-division and graduate course work, or 3.00 for OSU graduate course work included in the initial nine hours of study.

Provisional admission is granted for a minimum enrollment in six credit hours of CIED course work to be determined through advisement and taken during one calendar year. A student admitted provisionally must earn a grade-point average of at least 3.50 in this course work to be admitted (unqualified). Dismissal from the program at the end of this probationary period is automatic if the student fails to satisfy this stipulation.

Further information about this degree may be found in the departmental publication Master's Degree Policies and Regulations available in 302 Gundersen Hall and under "Master’s Degree" of the "Graduate College" section of the Catalog.
The Doctor of Education Degree. A student may earn the degree of Specialist in Education (Ed.S.) in curriculum and instruction with emphasis in curriculum supervision, elementary education, information/communication technology, reading, and secondary education. Students emphasizing secondary education must incorporate graduate course work from an academic discipline. This degree program is designed for teachers in public schools, two-year and four-year colleges, and universities. The Specialist in Education degree requires a minimum of 60 semester hours beyond the bachelor's degree.

Unqualified admission to the Ed.S. degree program is granted to a graduate of an accredited college or university who has made application to the Graduate College and who has (1) submitted the completed departmental folder which includes a score on the Miller Analogies Test and other pertinent information, (2) provided evidence of at least one year of experience in a professional position in an education institution if not the holder of a master's degree, (3) received favorable recommendations from area faculty members who have evaluated the personnel folder, and (4) identified qualified faculty members who have agreed to serve on the advisory committee and in the chairpersonship role.

Further information about this degree may be found under "Doctor of Education" in the "Graduate College" section of the Catalog.

The Colloquium Series. Many opportunities exist for graduate students to become involved in ongoing departmental research projects and activities while studying in residence at Oklahoma State University. In particular, graduate students are expected to participate in the Colloquium Series sponsored by the Department.

The Master of Science Degree. A student may earn the degree of Master of Science (M.S.) in education component includes the study of (1) the development of American higher education; (2) the roles, functions, and problems associated with various types of institutions of higher learning; (3) the essentials of curriculum development; and (4) the principles and procedures underlying effective college and university instruction.

Prerequisites. Educational administration majors are expected to have a minimum of 16 semester credit hours of undergraduate study in education. Higher education college teaching majors are expected to have an undergraduate major in the discipline they plan to teach at the college level.

Admission Requirements. Persons interested in degree or certificate programs should apply through the Graduate College. All applicants must submit transcripts of prior academic work. In addition, those persons seeking admission to a graduate degree program must submit a Graduate Record Examination or a Miller Analogies Test score at the time of application. Once granted provisional admission to the Graduate College and within the first four weeks of the initial term of study, all degree program applicants are expected to provide the Department with specific information that is used by the faculty to reach a decision regarding admission to a degree program. Since applicants are not considered for admission to the doctoral program until they are enrolled in, or have completed, the seminar EAHED 6003, "Educational Ideas," they should enroll in that course during their first term. When a person is admitted to the program, a permanent adviser and an advisory committee are appointed. The committee, working closely with the student, develops an individual plan of study. Prior to the appointment of a permanent adviser, the department head serves as a temporary adviser.

The Master of Science Degree. A student may earn the degree of Master of Science (M.S.) under one of three plans:

Plan I (30 hours)—the student completes a minimum of 24 credit hours of approved course work and writes a thesis for which six hours of credit are granted;

Plan II (32 hours)—the student completes a minimum of 30 credit hours of approved course work and writes a master's report for two hours of credit;

Plan III (32 hours)—the student completes a minimum of 32 credit hours of approved course work, which includes a creative component (e.g., a special report, an annotated bibliography, a project in research or design). The creative component must be explicitly identified on the plan of study.

After completing the plan of study, master's students in all departmental programs write a comprehensive examination.

Further information about this degree may be found under "Master's Degree" in the "Graduate College" section of the Catalog.

The Specialist in Education Degree. The student may earn the degree of Specialist in Education (Ed.D.) in educational administration or in higher education. The degree is designed for teachers and administrators in public schools, colleges, and universities. The specialist program in higher education offers a unique opportunity for persons preparing to serve the junior or community college. The Specialist in Education program requires a minimum of 60 semester hours beyond the bachelor's degree. Further information about this degree may be found under "Specialist in Education" in the "Graduate College" section of the Catalog.

Educational Administration and Higher Education

Professor and Head Joseph W. Licata, Ph.D.

Graduate Programs

Advanced graduate work is offered at the master's, specialist, and doctoral degree levels. Higher education degree programs prepare persons for careers as faculty members and/or administrators in colleges, universities, and other educational agencies. Public school educational administration degree programs and educational administration non-degree certificate programs prepare persons for positions in federal and state education agencies, for leadership careers as elementary or secondary principals and as school superintendents, and for staff positions in central offices and attendance centers. Students in educational administration may also develop competence in community education for positions in local school districts, community colleges, and state departments of education.

The educational administration program at Oklahoma State University focuses on developing professional educational leaders at both the public school and the higher education levels and stresses: (1) a thorough foundation in administrative theory; (2) a multidisciplinary approach to understanding the administrative process, including contributions from industrial management, political science, economics and organizational sociology; (3) extensive consideration of administrative functions and problems unique to particular educational levels; and (4) the preparation of leaders who can establish, develop, and maintain programs of community education.

The college teaching program focuses on developing skilled college and university instructors and stresses the combination of high-level competence in the appropriate subject area with the study of those facets of higher education which are important to functioning effectively in contemporary college and university settings. Persons interested in the college teaching program should contact the head of the department for further information about specific cooperative arrangements with teaching fields. The higher education component includes the study of (1) the development of American higher education; (2) the roles, functions, and problems associated with various types of institutions of higher learning; (3) the essentials of curriculum development; and (4) the principles and procedures underlying effective college and university instruction.

Plan I (30 hours)—the student completes a minimum of 24 credit hours of approved course work and writes a thesis for which six hours of credit are granted;

Plan II (32 hours)—the student completes a minimum of 30 credit hours of approved course work and writes a master's report for two hours of credit;

Plan III (32 hours)—the student completes a minimum of 32 credit hours of approved course work, which includes a creative component (e.g., a special report, an annotated bibliography, a project in research or design). The creative component must be explicitly identified on the plan of study.

After completing the plan of study, master's students in all departmental programs write a comprehensive examination.

Further information about this degree may be found under "Master's Degree" in the "Graduate College" section of the Catalog.

The Specialist in Education Degree. The student may earn the degree of Specialist in Education (Ed.D.) in educational administration or in higher education. The degree is designed for teachers and administrators in public schools, colleges, and universities. The specialist program in higher education offers a unique opportunity for persons preparing to serve the junior or community college. The Specialist in Education program requires a minimum of 60 semester hours beyond the bachelor's degree. Further information about this degree may be found under "Specialist in Education" in the "Graduate College" section of the Catalog.
The Doctor of Education Degree.
The program in educational administration focuses on the development of education leaders for the public schools. It employs a multidisciplinary approach to administrative processes, incorporating knowledge from industrial management, political science, economics, organizational sociology, and other fields as well as from education.

Programs in higher education focus on the preparation of administrators and faculty. The administrator preparation program utilizes knowledge from many fields of administration and allows the student to make appropriate application to higher education. The program for two- and four-year college teachers stresses an interdisciplinary approach and allows the student to develop a strong competence in an academic area.

The professional education component emphasizes the philosophies, roles, functions, and problems of various types of institutions of higher learning and incorporates the latest findings in curriculum development and effective college teaching. Cooperative programs for the college teaching degree have been developed in conjunction with many departments on campus. The Doctor of Education programs require a minimum of 90 credit hours beyond the bachelor's degree.

Applicants entering the doctoral program after completing a master's degree may apply up to nine hours of post-master's credit toward the doctorate, with the approval of the doctoral committee. Applicants entering the doctoral program after completing a specialist degree must earn a minimum of 40 credit hours, including dissertation hours, from Oklahoma State University. Credit earned in the specialist program may be applied to the doctoral program, with the approval of the doctoral committee, providing the credits contribute to the overall strength of the doctorate and prepare the student for candidacy.

Further information about this degree may be found under "Doctor of Education" in the "Graduate College" section of the Catalog.

School of Health, Physical Education and Leisure

Professor and Director George H. Oberle, P.E.D.

The School of Health, Physical Education and Leisure (HPEL) is a multi-faceted organizational unit encompassing three academic departments: health, physical education, and leisure; four leisure service programs: recreation, intramurals, sports clubs, and outdoor adventure. (See "Campus Recreation" in the "Student Life" section.) The programs of the School provide a complex of curricular and cocurricular endeavors emphasizing the dual role of meeting the continuous need for enriching and broadening the scope of the individual, and at the same time, preparing the individual professionally for useful service to mankind.

LEISURE

Associate Professor and Coordinator Lowell Caneday, Ph.D.

The program in leisure provides students with three basic services: (1) students may earn a Bachelor of Science degree in leisure, (2) students from other disciplines may earn a minor in leisure as a generalist offering, and (3) students from throughout the University may enroll in leisure course offerings to meet their particular needs and interests related to fitness and the wise use of leisure time.

The Bachelor of Science degree in leisure is designed to give students a professional foundation for careers in recreation and leisure services. The program is accredited by the National Recreation and Park Association in two areas: therapeutic recreation, and leisure services management. The curriculum prepares students for professional opportunities in recreation program services for Armed Forces, camps, outdoor recreation areas, churches, colleges, unions, fitness centers, schools, youth-serving agencies, and institutions serving special populations such as the ill, disabled, handicapped, aged and incarcerated.

The purpose of the general studies courses in leisure is to assist individuals in the development of capabilities for use of personal leisure. Courses are designed to provide individuals with the knowledge and skills necessary to appreciate the importance of activity and physical fitness for everyday living in both working and leisure time pursuits; to assist them in developing a satisfactory level of performance in such leisure time activities as sports, dance and aquatics, and to give a basic understanding of the body and its functions.

HEALTH

Associate Professor and Coordinator Betty M. Edgley, Ed.D.

The program in health offers students a selection of two major undergraduate professional preparation tracks.

Track one, school health, leads to a bachelor's degree in the health major, and prepares the student to teach health in a public or private school setting. After successfully completing all course work, including a student teaching internship and the health curriculum examination, the student would be qualified for state licensure to teach in grades K-12.

Track two, community wellness, leads to a bachelor's degree in the health major, and is a non-teaching track that provides the student with expertise in developing health and wellness programs in substance abuse, stress management, gerontology, and related health promotion topics within school, university, hospital, and industrial settings, as well as community and public health agencies. Community wellness students will culminate their experience with an internship. In addition to these tracks, an emphasis in athletic training is offered that will meet state licensure.

The program in health also offers courses which can contribute to a student's general education, as well as supporting degree requirements for selected disciplines across the campus.

PHYSICAL EDUCATION

Professor and Coordinator John G. Bayless, Ed.D.

The program of physical education includes a curriculum designed for professional preparation in physical education in one of two areas: certification for teaching physical education and health in grades K-12; and sports science.

An Oklahoma State University coaching certificate (24 hours) is also available. The teacher education, K-12 certification option, qualifies students to teach physical education, grades kindergarten through 12.

For students not interested in teaching physical education, sports science is offered. The sports science program is designed to educate the student about the fundamental nature of human movement from a scientific perspective. It prepares the student for further study at the post baccalaureate level in either the physiological or psychological dimension of human performance (exercise physiology, biomechanics, sport medicine, or sport psychology).

Core courses for all physical education students include an introductory course for the discipline, eight hours of sport and dance activities, courses in anatomy, kinesiology, biomechanics, motor learning, exercise physiology, and motor development. Students are required to demonstrate proficiency in reading and writing and have a cumulative grade-point average of 2.00 before being admitted to a degree program in physical education. A 2.50 cumulative grade-point is required for admittance into the teacher education program and for graduation in all School of HPEL programs.

Graduate Programs

OSU’s School of Health, Physical Education, and Leisure offers graduate programs at both the master's and the doctoral level. The Master of Science degree has three major emphasis areas: health, physical education, and leisure sciences with emphasis in each area. In cooperation with the Department of Educational Administration and Higher Education, an Ed.D. in higher education with a specialization in health, physical education, and/or leisure is offered. Based on an analysis of the student's previous professional preparation and experience, an individual program consisting of course work, practical experience and research, is designed to meet the student's future needs and interests.
The Master of Science Degree. Emphases are available in health, physical education and leisure.

The Master of Science degree is not a teacher certification program. Undergraduate requirements for certification would have to be satisfied before the student is eligible for certification from the State Department of Education.

The program in health offers a master's degree with a specialization in health promotion and wellness.

The program in physical education offers a master's degree with a specialization in physical education in one of five areas: administration, pedagogy, sports psychology, and adapted or exercise science. The exercise science area contains course work necessary for fulfilling American College of Sports Medicine's Exercise Technician or Specialist Certification.

The program in leisure has four areas: administration and management, outdoor recreation, therapeutic recreation and campus recreation.

Admission Requirements. Depending upon the area of emphasis, a bachelor's degree in physical education, health education, leisure or a related area is required. Applicants without an approved undergraduate program will be required to make up deficiencies by taking the specified prerequisites. Students are required to meet the following for full admission: (1) 3.00 GPA in an undergraduate program; (2) MAT score of 40 or GRE score of 500 verbal, 450 quantitative and 500 analytical; and (3) three letters of recommendation. Applicants not meeting these requirements are subject to review by the Graduate Screening Committee.

General Requirements. A minimum of 32 hours of graduate credit must be taken for the master's degree program or 30 hours with six hours for a thesis, including 21 hours of courses at the 5000 level and 15 hours in the School. Graduate students normally carry an academic load of 9-12 semester hours.

Core Courses. Requirements for the master's degree programs include a basic statistics course and a research design course.

The Doctor of Education Degree. Specializations are available in health, physical education, and leisure.

Admission Requirements. Students entering this program should have a bachelor's degree and/or master's degree in health, physical education, or recreation/leisure from an accredited institution; if not, additional course work may be required. Application for admission in this program should be made to the head of the Department of Educational Administration and Higher Education, Gundersen 309, Oklahoma State University. The applicant should have an undergraduate GPA of at least 2.70 and a graduate GPA of at least 3.20. Students are required to take the Miller Analogies Test.

General Requirements. A minimum of 60 hours above the master's degree or 90 hours above a bachelor's degree is required for the Doctor of Education degree. Students must have completed all prerequisites and are required to complete 15 specified hours in higher education. The remainder of the program is individualized and interdisciplinary according to the goals of the student. Ten hours of credit are allotted on the study plan for the dissertation. Comprehensive examinations in higher education and in the student's area of specialization are given twice annually, near the completion of course work. Graduate teaching and research assistantships are available.

For further information and application forms, write to the coordinator of graduate studies, School of HPEL, 103 Colvin Center.

The School of Occupational and Adult Education offers several degree programs with and without teacher certification. Teacher certification programs are available in business education, industrial technology education, marketing education, technical education, and trade and industrial education. Certification for any of these programs requires a degree in an appropriate field with a high scholastic standing and the normal requirements of the Graduate College. In all cases, applications are considered on an individual basis and only a limited number of candidates will be accepted. For additional requirements, see "Prerequisites" under each program.

Professor and Director Melvin D. Miller, Ed.D.

The School of Occupational and Adult Education (OAED) has as its central focus teachers of occupational programs and leadership personnel for these programs, together with personnel for human resource development and adult and continuing education. Just as the School of OAED is a part of the College of Education, occupational and adult education is a significant element in America's system of education. The School seeks to serve teachers, supervisors, and administrators of vocational-technical programs at the middle school and secondary levels, area vo-tech schools, community and junior colleges, and technical schools; trainers and mid-management personnel in business, industry, and other private and public agencies; and adult educators employed by any of these. Accordingly, the goals of the school are:

1. To develop both undergraduate and graduate programs which prepare individuals to serve present and future needs of educational agencies, business and industry, and other agencies in areas related to the field of occupational and adult education.
2. To provide extended services and non-traditional programming to the School's clients on both a pre- and in-service basis.
3. To provide specialized leadership development opportunities for individuals who seek to serve as educational or training specialists in public and private schools, and in business and industry in areas related to occupational and adult education.
4. To conduct quality research in occupational and adult education and to disseminate research findings through local and national publications as well as through the OSU teleconferencing system.
5. To provide service to other departments and programs on campus through general interest courses and activities.
6. To provide programs and service at the international level, assisting in the development and advancement of programs related to the school's mission.
7. To be recognized within the state, nationally and internationally, for leadership in the various aspects of occupational and adult education.

The School of Occupational and Adult Education offers several degree programs with and without teacher certification. Teacher certification programs are available in business education, industrial technology education, marketing education, technical education, and trade and industrial education. Certification for any of the above may be met while completing one of the bachelor's or master's options available in OAED. A noncertification program is available in technical education. The master's and doctorate in OAED offer specializations in adult and continuing education, human resource development, and vocational-technical education.

Graduate Programs

The School of Occupational and Adult Education offers graduate programs leading to the Master of Science degree in the specific areas of industrial technology education, marketing education, technical education and trade and industrial education, as well as the general area of occupational and adult education. The School also offers programs leading to the Specialist in Education degree and Doctor of Education degree to prepare individuals for leadership roles in the broad areas of occupational and adult education. At the Ed.S. and Ed.D. levels, individuals may specialize in administration, curriculum and teaching, teacher education, or educational research, as each relates to the total field of occupational and adult education. Additionally, both degrees offer an emphasis in adult and continuing education or human resource development. Admission to any of these graduate programs requires a degree in an appropriate field with a high scholastic standing and the normal requirements of the Graduate College. In all cases, applications are considered on an individual basis and only a limited number of candidates will be accepted. For additional requirements, see "Prerequisites" under each program.

BUSINESS EDUCATION

Business education teachers continue to find excellent employment opportunities in secondary schools, area vocational-technical schools, and post-secondary schools. Society's move toward a service economy will further expand opportunities for vocationally-trained teachers in this field.

Persons seeking certification in the field of business education will complete the teacher certification and bachelor's degree programs in the College of Education with specialized education courses being taken in the School of OAED under the BUSPR (Business Professions) and OAED prefixes. Additionally, the student will complete course work in the College of Business Administration related to specific subject areas to be taught.

Graduate Programs

Graduate program opportunities for the business educator are available as an area of emphasis under OAED's Master of Science and Doctor of Education degrees. Specialized work in BUSPR is available to be included in the candidate's degree plan.
MARKETING
EDUCATION

Emphasis upon vocational training in the field of marketing has received greater emphasis in recent years because of the importance of the marketing function to the economic growth of the country. If the marketing function fails to achieve maximum efficiency, the U.S. will fall short of reaching full economic potential.

The demand for qualified vocational marketing education teachers across the country exceeds the supply. Marketing educators earn above-average salaries because of the nature of the training program and the emphasis being placed in society on the importance of vocational preparation. The recent emphasis on career education has indeed dramatized the need for qualified marketing educators in all fields.

A marketing education major will complete core requirements in business administration, including courses in marketing, management and business law.

Graduate Programs

The marketing education curriculum for the M.S. degree is designed for individuals who are preparing for employment in comprehensive high schools, area vocational-technical schools, businesses, and junior colleges. The goal of this graduate curriculum is to help individuals develop higher-level competencies in both instructional and occupational skills in the distributive and marketing education fields.

TECHNICAL
EDUCATION

The technical education curriculum is designed to prepare instructional personnel for technical programs of community junior colleges, technical institutes and industry. Graduates from this program also accept technical employment of various types in business, industry and government. The program includes an option which will provide the student with the academic requirements necessary for certification to teach in area vocational-technical schools.

The Bachelor of Science in Technical Education degree is designed primarily for graduates of technical programs in technical institutes and community junior colleges. Qualified students from preprofessional programs also are accepted into the program with advanced standing. In addition, students desiring to prepare for careers in this field may enter the program directly from high school and complete their technical major requirements at OSU.

Graduate Programs

The technical education curriculum for the M.S. degree is offered for persons who are preparing for employment in junior/community college or technical institute technician education programs and for those who aspire to positions in training programs for employee development. The overriding goal of this graduate curriculum is to help individuals improve their instructional and occupational skills for greater effectiveness in the educational setting.

Prerequisites. An adequate background in a major field of technology with an undergraduate program which included specialized technical course work at the junior or senior level at an accredited college or university, and approval of an adviser are necessary.

TRADE AND
INDUSTRIAL
EDUCATION

The trade and industrial curriculum is designed to prepare teachers, supervisors and coordinators for vocational trade and industrial education classes. Programs leading to the bachelor's and master's degrees are offered for those who wish to qualify for teaching under the approved state plan for vocational education as well as industrial training opportunities.

Students completing the degree program will be qualified to teach in the vocational departments of high schools and area vocational schools, or to be employed in industry.

The student's area of specialization is selected from but not limited to the industrial fields of air-conditioning, heating and refrigeration, auto mechanics, bricklaying, cabinetmaking, carpentry, commercial art, cosmetology, diesel engines, drafting, electricity, electronics, individualized cooperative education, machine shop, photography, printing, plumbing, sheet metal, small engines, tailoring, upholstering, welding or other industrial fields. The specific field is determined by the trade proficiency and teaching aspirations of the student. Since trade competency normally is required for admission to the program, students are accepted into this field of study only by consent of the program faculty. The required trade competency may be acquired by completing a vocational trade program in an approved high school or junior college, and by apprenticeship training, by actual experience in the field of specialization, or a combination of these.

Graduate Programs

The trade and industrial education curriculum for the M.S. degree is designed for instructors of a wide variety of trade areas in comprehensive high schools, in industries, and in area vocational and technical schools. The curriculum helps students build and increase competence in instructional, occupational, and supervisory skills for advancement opportunities in trade and
industrial instructional situations whether in the public or private sector of trade and industrial education.

Prerequisites. Educational preparation in a specialized trade area and adequate occupational experience to meet minimum provisions of the State Plan for Vocational Education, and approval by adviser are necessary.

Teacher Education Programs

Officers of the Teacher Education Council
Kenneth L. King, Director of Teacher Education
Ray Sanders, Chair of Teacher Education Faculty
Faculties of Group Chairs
Margaret Scott, Early Childhood/Elementary Education
Eddie Finley, Secondary Education
Barbara Wilkinson, Elementary/Secondary Education

All Teacher Education programs are administered through the OSU Teacher Education unit and are coordinated by the director of Teacher Education through the Office of Teacher Education, 108 Gundersen Hall. Upon completion of an approved program or degree, passing the appropriate curriculum examination(s), and upon the recommendation of the University, the candidate will be eligible for licensure/certification to serve in the schools of Oklahoma. All candidates completing an approved program or applying for a teaching license are subject to all rules and regulations specified by the OSU Teacher Education unit and the Oklahoma State Department of Education.

Programs are offered at various levels, but all require the earning of at least a bachelor's degree for recommendation for a standard certificate. Graduate programs leading to the master's degree, the education specialist degree, and both the Doctor of Education and the Doctor of Philosophy degrees are offered in several areas. In addition, there are programs at the graduate level which lead to certification but which may or may not lead to graduate degrees.

In addition to state approval, Teacher Education programs at Oklahoma State University have the approval of the National Council for Accreditation of Teacher Education (NCATE), the national agency responsible for accrediting high-quality programs throughout the United States. Students who complete NCATE-approved programs will find certification in other states easier to secure and employment opportunities enhanced.

Undergraduate Teacher Education programs are offered in the College of Education as well as in the colleges of Agriculture, Arts and Sciences, and Home Economics. The student may choose the college in which the degree is to be earned; however, the student must meet the program requirements of the OSU Teacher Education unit as well as the degree requirements of the particular college. Each student who desires to enter a Teacher Education program must make formal application to do so and must meet the admission standards specified.

The requirements for the degree being sought are made known to the student when he or she first enrolls at Oklahoma State University. While the curriculum may change many times before a student graduates, a student who makes normal progress toward graduation (no more than two years beyond the normal four-year bachelor's degree requirements) will be held responsible only for the degree requirements at the time of matriculation, and any changes that are made, so long as these changes neither result in semester credit hours being added nor delay graduation. Elective hours may be reduced if new program requirements are implemented. State-mandated changes in teacher certification may result in additional course requirements.

In general, programs of teacher preparation consist of three parts: general education of approximately 50 semester credit hours; professional education, the amount of which varies with the curriculum selected, but with a minimum requirement of 30 semester credit hours; and major requirements of 40 to 60 hours, depending upon the field of specialization.

Inquiries concerning any aspect of Teacher Education programs at Oklahoma State University should be addressed to the head of the administrative unit offering the program or the Office of Teacher Education, 108 Gundersen Hall.

Undergraduate Programs

Undergraduate programs are offered in the following areas: agriculture; art; business education; early childhood; elementary education; English; foreign language (French, German, Spanish); health education; home economics; journalism; marketing education; mathematics; music-instrumental; music-vocal; occupational agriculture; occupational home economics; physical education/health; science; social studies; special education-emotionally disturbed, learning disabilities, and mental retardation; speech and drama; technical education; technology education; and trade and industrial education. There are also numerous teaching endorsements available.

Graduate Programs

Basic certification programs offered at the graduate level are school psychologist, school psychometrist, and speech-language pathology. Advanced certification programs offered at the graduate level include reading specialist, school counselor, school principal-elementary, school principal-secondary, and school superintendent. Master's degrees are available in conjunction with all of the above programs and doctorates are available in many. Areas of concentration in several of these fields may be included as part of master's and doctoral degree programs if approved by the department head of the administrative unit offering the program and the dean of the Graduate College.

Admission to Teacher Education

The criteria for admission to undergraduate Teacher Education programs are based on University-wide policies recommended by the director of Teacher Education through the Council on Teacher Education. Requirements are applicable to all Teacher Education administrative units of the colleges preparing teachers. The student is not considered a fully eligible participant in a Teacher Education program until formally admitted to Teacher Education.

A student may not be permitted to enroll in the remaining courses in the professional sequence if full admission to the Teacher Education program has not been earned. The student must apply for and be granted full admission to the Teacher Education program prior to enrolling in student teaching methods and the student teaching internship. Certain vocational programs may vary from this requirement due to state guidelines. Students should apply for admission to Teacher Education as early as possible in their programs.

Criteria for Admission to Undergraduate Teacher Education Programs

During the first semester of the academic program, the student must complete the Declaration of Intention to Pursue a Program in Teacher Education. This form can be obtained in the Office of Student Academic Services, 108 Gundersen Hall, for College of Education students, or in the office of the department head if the student is enrolled in the Teacher Education program in the colleges of Agriculture, Arts and Sciences, or Home Economics. In addition to completing this form, the student should schedule the Teacher Education interview and register for the Preprofessional Skills Test (PPST). Teacher Education interviews are generally scheduled during the first early laboratory and clinical experience. Registration booklets for the PPST are obtained from the University Testing and Evaluation Service, 109 North Murray Hall.

After declaring an intention to pursue a program in Teacher Education, the student may elect to enroll in course work in the following preprofessional education areas (which must be completed before student teaching):

1. sociological foundations;
2. exceptional child;
3. human development;
4. early laboratory and clinical experiences (45-clock hours minimum);
5. media.

The student must complete Part II: Full Admission to Teacher Education. Full admission to Teacher Education must be achieved before the student can enroll in the remaining professional education sequence of learning theory, evaluation and methods. The student must meet all the following criteria:

1. The Preprofessional Skills Test. This test is required of all Teacher Education students and is composed of mathematics, reading, English grammar and essay skills. Information and registration for the Preprofessional Skills Test can be obtained from the University Testing and
Evaluation Service, 109 North Murray Hall. A study guide for the test is available in the Reserve Room in the Library. If the student does not attain the established scores (mathematics 171, reading 173, writing 172), he or she must retake the PPT until passing scores in all areas are obtained.

2. Interview for Admission to Teacher Education. All candidates for full admission to undergraduate Teacher Education must be formally interviewed by selected OSU Teacher Education faculty.

3. Orientation to Teacher Education Course and Laboratory and Clinical Experiences. An appropriate orientation to Teacher Education course must be completed with a grade of "C" or better. One semester credit hour of early laboratory and clinical experiences must be completed with a grade of "C" or better or grade of "P".

4. Minimum Overall Cumulative GPA of 2.50. A minimum overall cumulative GPA of 2.50 must be earned, based on no fewer than 40 credit hours of courses to include lower-division general education requirements as specified in the student's program.

Criteria for Admission to Graduate (Post-baccalaureate) Teacher Education Programs

Graduate (post-baccalaureate) students must file the form Declaration of Intention to Pursue a Teacher Education Program-Post-baccalaureate and meet one of the following criteria for full admission to Teacher Education.

1. Must have achieved full admission to Teacher Education purposes other than graduation, the total number of grade points earned is divided by the total number of hours attempted; for graduation, the hours and points of the lowest grades in a repeated course will be ignored. Grades of "I," "NP," "P," "R," "W," "WP," or the mark of "N" will not affect the overall GPA.

2. Students classified by the Graduate College as "special" or "provisionally admitted" must (a) have a minimum overall GPA of at least 2.50; (b) pass the Preprofessional Skills Test or meet published alternatives; (c) complete the interview to Teacher Education; and (d) complete one semester credit hour of early laboratory and clinical experiences and an orientation to Teacher Education course with a grade of "C" or better or a grade of "P";

3. Students must maintain an overall GPA of at least 2.50; (b) pass the Preprofessional Skills Test or meet published alternatives; (c) complete the interview to Teacher Education; and (d) complete one semester credit hour of early laboratory and clinical experiences and an orientation to Teacher Education course with a grade of "C" or better or a grade of "P."*

Transfer Students

Transfer students must work toward meeting the criteria for full admission to Teacher Education established by Oklahoma State University as soon as possible during the first semester at OSU.

Calculating Grade-point Average for Teacher Education

In calculating the 2.50 GPA for all Teacher Education purposes other than graduation, the total number of grade points earned is divided by the total number of hours attempted; for graduation, the hours and points of the lowest grades in a repeated course will be ignored. Grades of "I," "NP," "P," or the mark of "N" will not affect the overall GPA.

Retention in Teacher Education

For continued acceptability and recommendation for a license or certification, the student must have met and maintained all specified requirements for admission to the Teacher Education program. In addition, the student must maintain an overall GPA of at least 2.50; a major requirement GPA of at least 2.50 with no grade below "C"; and a professional education GPA of at least 2.50 with no grade below a "C."*

Student Teaching Profile Application

The Student Teaching Profile Application form must be completed by the student the semester prior to the student teaching semester. The application forms are distributed at a meeting called by the coordinator of clinical experiences and through the Office of Teacher Education. Students are notified of this meeting through consultation with advisers, the "Official Bulletins" section of The Daily "O"Collegian student newspaper, signs on bulletin boards across campus and in residence halls, and by announcements made in teacher education classes. Students must submit their Student Teaching Profiles to the Office of Teacher Education prior to specified dates in November and March. These dates will be announced to students in the same manner as mentioned above. Students will be notified in writing of their placements as soon as the coordinator of clinical experiences has received confirmation from the cooperating schools. Students are encouraged to take all appropriate teacher certification tests after the completion of at least 90 semester hours of course work. (See "Oklahoma Teacher Certification Testing Program.")

Criterions for student teaching placement for all Teacher Education students are:

1. Must have achieved full admission to a Teacher Education program;
2. Must have achieved an overall grade-point average of at least 2.50;
3. Must have a grade-point average of at least 2.50 in courses listed on the current approved program for licensure/certification in the areas of professional education and major requirements. No grade lower than a "C" will be accepted in either of these areas.
4. Must have completed all preprofessional education course work which includes at least one course in sociological foundations, all early laboratory and clinical experiences (45 clock hours minimum), exceptional child, and human growth and development, with no grade lower than "C" or "P" accepted in any of these courses. All professional sequence course work must be completed to include: learning theory, evaluation, and methods.
5. Must have achieved grades of "B" or better in all sections of student teaching in order to be recommended for a license and a standard certificate upon completion of the Entry-year Assistance Program. A grade of "C" in any section of student teaching will result in a recommendation for provisional certification during the licensure period. A successful recommendation for certification by the Entry-year Assistance Committee will result in a recommendation for the standard certificate. A student assigned the grade of "D" or lower in any section of student teaching will not qualify for a recommendation for a license or any level of certification.

Out-of-State/Out-of-State Placements

In extremating circumstances, a student requesting an out-of-area/out-of-state placement must have the approval of the coordinator of clinical experiences and the department program coordinator, and will be required to pay the following fees:

1. All necessary and appropriate fees required in securing and finalizing the placement (e.g., reimbursement for cooperating teacher, supervisor, etc.). These fees are payable to the Office of Teacher Education at least one month prior to the beginning of the semester in which the placement is sought.

2. If a recommendation for licensure/certification is to be made by Oklahoma State University, the student may be responsible for reimbursing OSU for at least one visit by an OSU supervisor in addition to the visitations performed by the cooperating institution. All other criteria pertaining to in-state student teaching placements will apply as previously stated.

Appeals

As a comprehensive land-grant university, OSU is committed to serving a diverse audience. As Teacher Education is a professional program, standards have been established which will allow only students who have been admitted to the program to continue in good standing. If a student believes that the established policies and procedures of the Teacher Education program were not consistently and accurately followed, the student will have the right to appeal to the director of Teacher Education. Information pertaining to the appeals process is available through the Office of Teacher Education.

Oklahoma Certification Testing Program

All students who graduate or are seeking endorsements from a Teacher Education program are required to complete the Oklahoma Teacher Certification Test(s) in their teaching field(s) with a score of 70 or above before a license or endorsement can be
issued. The examinations are administered by the Oklahoma State Department of Education four times each year. Registration booklets are available in the Office of Teacher Education. To qualify to take the examination(s) the student must:

1. be fully admitted to Teacher Education;
2. have 90 hours of college credit completed on his or her transcript and
3. meet minimum requirements for the standard teaching certificate or endorsement teaching credentials as required by the Oklahoma State Department of Education.

Registration deadlines are indicated on the registration booklet and are generally due about seven weeks prior to the testing date.

Personnel in the Office of Teacher Education will process and deliver the registration form and required fees to the Oklahoma State Department of Education.

Copies of the Objectives and Study Guides for the Oklahoma Teacher Certification Testing Program have been placed in the Reserve Room of the library and are listed as "Objectives for Oklahoma Certification Testing Program."

An Oklahoma State University student must pass the Oklahoma Teacher Certification Test(s) in his or her major teaching area(s) before taking any tests in endorsement areas outside the major.

**Recommendations for license, Certificate, or Endorsement**

Oklahoma State University will not make a recommendation for a license, certificate or endorsement until all criteria have been met for the Teacher Education program and a passing score has been achieved on the Oklahoma Teacher Certification Test(s). Applications for an Oklahoma license or certificate can be obtained in the Office of Teacher Education. Students seeking advisement concerning teacher licenses or certificates can be assisted by the teacher certification specialist in the Office of Teacher Education in 101 Gundersen.

**Entry year Assistance Program**

A candidate with a license will serve at least one, and in some cases two years, as an entry-year teacher under the guidance of an Entry-year Assistance Committee consisting of a teacher consultant, an administrator within the local district where the beginning teacher is employed, and a higher education representative. Upon completion of the entry-year teaching experience (120-180 days) the candidate may be recommended either for certification by the Entry-year Assistance Committee or for an additional year of teaching under the guidance of either the same or a new Entry-year Assistance Committee. If the candidate does not complete the second year as an entry-year teacher satisfactorily, the Entry-year Assistance Committee will recommend noncertification for the candidate.
The College of Engineering, Architecture and Technology (CEAT) offers a complete spectrum of educational opportunities designed to give graduates the capability and the flexibility to meet the ever-changing requirements of society—a society heavily committed to technological innovation. To be prepared to make continuing contributions, engineers, architects and technologists must have at their command not only the modern tools and processes of industry, but a firm and rigorous education in mathematics and the physical sciences. In order that those contributions be sensitive to genuine human needs, the engineer, architect or technologist must also be schooled in the social sciences and humanities that provide the understanding of non-technical factors that must shape technological innovation.

The curricula are continuously evolving to assist the student first to master the enduring principles upon which future practice will be based, and second to acquaint him or her with current applications of these principles. With such a bridge built between theory and practice, the educational experience will support one’s following diverse interests and opportunities throughout the productive years of his or her life span.

The following undergraduate engineering programs are separately accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET):

Aerospace option in mechanical engineering
Architectural engineering
Agricultural engineering
Chemical engineering
Civil engineering
Electrical engineering

General engineering
Industrial engineering and management
Mechanical engineering

The following undergraduate engineering technology programs are separately accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology:

Construction management technology
Electronics technology
Fire protection and safety technology
Manufacturing technology
Mechanical design technology
Mechanical power technology

The following programs in architecture are accredited by the National Architectural Accrediting Board:

Bachelor of architecture
Master of architecture

The Engineering Curricula

The traditional four-year bachelor’s degree programs in engineering remain available at OSU. However, in order to meet the ever-changing and complex needs of a technological society, one who expects to enjoy a lasting and successful career in the practice of engineering should obtain a background in mathematics, the basic sciences and in engineering that cannot readily be acquired in four years. To meet this primary objective of an engineering education, the Schools of Engineering encourage every qualified student to pursue a curriculum leading to a master’s degree over a period of approximately five years, even though it is expected that there will be many entry-level job opportunities available for the graduate with the bachelor’s degree. Furthermore, the bachelor’s program in engineering is an excellent preparation for professional training in law or medicine, since it provides a student with maximum flexibility in career choices.

Academic Programs

Academic programs offered in the College of Engineering, Architecture and Technology culminate in the following degrees:

Schools of Engineering:

Bachelor of Science in Agricultural Engineering, Chemical Engineering (premedical option), Civil Engineering, Electrical Engineering (computer engineering option), General Engineering, Industrial Engineering and Management, Mechanical Engineering (aerospace, petroleum and premedical options).


Master of Science in agricultural engineering, chemical engineering, civil engineering, electrical engineering, environmental engineering, general engineering, industrial engineering and management, and mechanical engineering.

Doctor of Philosophy in agricultural engineering, chemical engineering, civil engineering, electrical engineering, general engineering, industrial engineering and management, and mechanical engineering.

Division of Engineering Technology:

Bachelor of Science in Engineering Technology

School of Architecture:

Bachelor of Architecture, Bachelor of Architectural Engineering, Master of Architecture and Master of Architectural Engineering

High School Preparation

Beginning students who have completed two units of algebra and one each in plane geometry and trigonometry/analysis in high school should be prepared to enter at the expected level
in mathematics. In addition, it is recommended that students planning an engineering degree obtain high school credit in one unit of general chemistry and one unit of general physics.

Oklahoma State University offers course work in algebra, trigonometry and preparatory chemistry for students who were unable to obtain this work during high school. However, such credit does not count toward the minimum number of semester hours specified for the B.S. degrees.

The selection of the initial chemistry and mathematics courses for an entering student in the College of Engineering, Architecture and Technology is determined by his or her score on placement tests administered at enrollment, the amount of mathematics or chemistry completed in his or her high school program and ACT test scores. When appropriate, students with a strong background can obtain academic credit by advanced standing examination or by College Level Examination Program (CLEP) tests.

The Professional School Concept
In accord with the professional nature of a career in engineering, students entering OSU are admitted into the pre-engineering program, consisting of the course work normally taken during the first two years of an engineering curriculum. Near the completion of the pre-engineering course work, the student applies for admission to one of the professional schools of the College to continue in the upper-division program. Students meeting admission standards then pursue a two-year curriculum leading to the B.S. degree and may add an additional year leading to a master's degree in their discipline.

Pre-engineering Program. The pre-engineering program is comparable to the freshman and sophomore levels in other disciplines. The content of the pre-engineering program is uniform for all engineering specialties except architectural engineering, and includes course work devoted to mathematics through calculus and differential equations, communication skills, general chemistry, general physics, the engineering sciences commonly referred to as mechanics, thermodynamics and electrical science, and the social sciences and humanities.

Master of Engineering. The Master of (specific school) Engineering degree programs are designed to prepare the graduate for the practice of the engineering profession in industry and government. They are distinguished by particular emphasis on developing in students the ability to perform effectively in design and development work; the programs normally include internship experiences as a part of the academic process. Approximately one year of graduate study is taken at the culmination of these programs offered in the Schools of Agricultural Engineering, Chemical Engineering, Civil Engineering, Electrical and Computer Engineering, General Engineering, Industrial Engineering and Management, and Mechanical and Aerospace Engineering.

Admission to one of these programs depends upon being accepted by one of the professional schools in the College of Engineering, Architecture and Technology. The programs consist of undergraduate work corresponding to the junior and senior level, and a 32-semester-credit-hour study program in graduate-professional status meeting Graduate College requirements for a Plan III master's degree.

Students may enter a professional school at any level for which they are qualified that exceeds the minimum requirements for eligibility for admission to a professional school. (See “Admission to Professional Schools.”)

The 32 semester hours in graduate-professional status must include 8 or more hours of upper-division work to total at least 100 semester hours beyond the pre-engineering level for the professional programs. This course work is taken in accordance with a professional school plan of study established for each student to meet the objectives of the student and the professional school in which he or she is enrolled. Three-year plans of study will include: all courses to complete undergraduate requirements and the 32-semester credit hours of graduate credit as specified by the particular professional school. At least 15 semester hours must be at the 5000 level, exclusive of professional practice; and six to eight hours of professional practice. The courses should be chosen at both undergraduate and graduate levels to meet ABET basic and advanced requirements for course work that is classified as design. (Currently, one-half year of engineering design is required in the basic, i.e., undergraduate programs, and an additional one-third year in the advanced portion.)

The professional school plan of study is filed with the Graduate College as the preliminary plan of study for the graduate portion of the program. A separate final plan of study must be filed with the Graduate College by the end of the second week of the term during which all requirements for graduation are to be completed.

Admission Requirements
Admission to Pre-engineering. Students must first be admitted to the pre-engineering or pre-architecture program and complete certain minimum requirements as outlined under “Lower-division Requirements.” Transfer students are normally first admitted to pre-engineering regardless of the number of hours completed, but may be permitted to take selected upper-division courses prior to admission to a professional school as appropriate.

Oklahoma residents may be admitted to pre-engineering, pre-architecture or technology if they meet OSU admission requirements stated elsewhere in the Catalog.

Nonresident students applying for admission to pre-engineering as freshmen must meet the following requirements: Make a composite standard score of 21 or higher on the ACT or a comparable score on a similar battery of standardized national exams. When it is not practical to take such exams (e.g. international students), the student's high school grades should demonstrate comparable competency and the potential for success in an engineering major.

Nonresident transfer students will be admitted directly to pre-engineering if they meet the following requirements:
1. an overall GPA of at least 2.70, and
2. a GPA of at least 2.50 over all mathematics, physical science, engineering science and engineering courses, and
3. a GPA of at least 2.00 (in at least 12 hours if a full-time student) in the most recent semester completed, and
4. ability to make satisfactory progress toward an engineering degree.

Nonresident transfer students not directly admissible to pre-engineering but those who meet OSU requirements for admission may be admitted to University Academic Services for one or two semesters in order to fully evaluate their qualifications for admission to pre-engineering. After grades are received each semester, such students will be evaluated and, if qualified, will be admitted to pre-engineering.

Minimum requirements for admission to pre-engineering from University Academic Services are:
1. an overall grade-point average (GPA) of 2.30 on a 4.00 scale, and
2. a GPA of at least 2.30 at OSU in mathematics, physical science and English courses applied toward the degree, and
3. ability to make satisfactory progress toward an engineering degree.

International student applications must be received by June 15, November 1 and April 1 for the fall, spring and summer terms, respectively, to be considered for admission to pre-engineering.

For these purposes, all GPAs are calculated using only the last grade in any repeated course.

The College of Engineering, Architecture and Technology, in implementing the policy for admission to engineering programs at Oklahoma State University, provides special consideration for members of U.S. minority populations, veterans, and educationally or economically disadvantaged citizens who show reasonable promise for successful completion of the undergraduate engineering curriculum requirements. All special admissions under these exceptions will be approved by the Office of the Dean of Engineering to ensure that the policy will not affect adversely the admission of students from minority backgrounds.

Transfer students will not be admitted if, in their most recent semester of transfer credit, their performance would have them on probation if enrolled at Oklahoma State University. Students transferring to pre-engineering from another major at OSU must meet the same requirements for admission as a student transferring from another college or university.

Admission to the Professional Schools. A student who has completed, including his current enrollment, fewer than 60 semester credit hours of study at an accredited institution of higher learning, and who has demonstrated satisfactory competence in the pre-engineering curriculum, is eligible to apply for admission to the professional school of his or her choice. The requirements for such admission are described in detail under "Lower-division Requirements.”

A common prerequisite for any student to enroll in upper-division course work offered by the professional schools of the College is competence equivalent to that required for admission to the schools, as described above. For students who have not been admitted to a professional school, competence will be evaluated on an individual basis by the head of the school or a designated representative.

In addition, if the number of qualified professional school applicants to a given professional school exceeds the number that can be provided a quality program with the resources available, the number admitted each semester to
that professional school will be limited. In that event, priority for admission will be given first to Oklahoma resident pre-engineering students and second to the nonresident students in pre-engineering on a best qualified basis as determined by the grade-point average in courses taken and completed at OSU. This practice will preserve the high standards demanded of a quality educational experience sought by students and necessary so that OSU graduates will continue to be highly regarded.

**Admission to Graduate-Professional Status.** To be admitted to graduate-professional status in a professional school in the CEAT, a student must have completed requirements for a B.S. degree in engineering, meeting the criteria of the Accreditation Board for Engineering and Technology. Students with B.S. degrees in physics, chemistry, etc., must complete work to meet ABET undergraduate requirements before gaining graduate-professional status. Scholastic performance as an undergraduate at a level that indicates a high probability of success in a graduate program requiring a 3.00 minimum GPA on a 4.00 scale is also a requirement.

**General Education Requirements**

The College of Engineering, Architecture and Technology urges its students to make maximum use of the course work required by the College and the schools for simultaneous fulfillment of many of the general education requirements. Opportunities to satisfy General Education requirements with required courses in the schools of Engineering include:

**English.** Students are required to complete a course in technical report writing. Thus, students making an "A" or "B" in the first English composition course (ENGL 1113), need not take ENGL 1213, and may take the technical writing course, ENGL 3323, to meet both the General Education requirement for English and the College requirement.

**Humanities and Social Science.** Engineering students must complete a total of 18 semester credit hours to meet this requirement, which is in compliance with the minimum requirements stipulated by the Accreditation Board for Engineering and Technology. By taking American history and political science to meet General Education requirements, six additional hours of social and behavioral sciences, and six hours of humanities, the 18 hours can meet the University's requirements in these areas. Furthermore, if one of these courses is selected from those meeting the University's requirements for an International Dimension, the total number of hours for the degree can be held to the minimum.

**Basic Science and Mathematics.** All students are required to complete 32 semester credit hours in these areas to meet college requirements. Eighteen of these credits can be used to meet University requirements in Natural Science and in Analytical and Quantitative Thought. The required chemistry and physics course work meet the University requirement for Scientific Investigation.

Opportunities for simultaneously meeting the requirements imposed by the School of Architecture and General Education requirements parallel those of the schools of Engineering with some variations. Specific courses, required in the architecture curriculum, may be used to meet General Education requirements as follows: Urban Sociology (SOC 3423) can be used to meet requirements in Social and Behavioral Sciences. At least 17 semester hours of basic science and mathematics can be counted toward General Education requirements, and required course work in "History and Theory of Architecture" can be used for General Education credit.

The pattern for meeting General Education requirements with course work also meeting departmental requirements is similar in the Division of Engineering Technology, but with some variations from department to department. Required course work in mathematics and basic science is utilized to meet up to 18 semester hours of General Education requirements also. The Scientific Investigation requirement is met as a part of the course work meeting professional requirements for basic science.

Meeting the remaining General Education requirements is not influenced by departmental requirements. In each case, provision is made for an elective to complete the required hours in the Humanities (H) and Social and Behavioral Sciences (S) areas and an opportunity for the student to also meet the International Dimension requirement without adding hours to the program.

**Lower-division Requirements**

In the Schools of Engineering and the School of Architecture the lower-division course work is devoted to qualifying for admission to the associated upper division; i.e., in each case continued progress in the program is contingent on successful completion of lower-division course work measured against standards that are considerably higher than University retention standards.

**Engineering.** A student is eligible to apply for admission to one of the professional schools of Engineering when the grades in which he or she is enrolled will bring his or her total semester credit hours of course work at an accredited institution of higher learning to at least 60 hours. Admission to the professional school is contingent on the demonstration of an acceptable level of competence in subject matter comparable to that covered in the General Education and Pre-engineering components of the lower-division curriculum as described in detail in the publication, **Undergraduate Programs and Requirements.** The demonstration of competence is normally in the context of formal course work, but up to one half of the requirements may be completed by advanced standing examination.

An acceptable level of competence for the purpose of admission to a professional school may be demonstrated by achieving all of the following:

1. Of the 60 or more semester credit hours, at least 51 shall be from the General Education and Pre-engineering courses stipulated for the degree. The minimum grade-point average in these 51 hours is 2.30, and final grades of "C" or better are required in each English, mathematics, physics, chemistry or engineering science course.

2. A minimum of 12 of the required semester hours must be completed at Oklahoma State University, with a grade-point average of 2.30 or better in these courses.

3. The overall grade-point average applicable to the mathematics, physics and chemistry courses, and those engineering science and engineering courses taken prior to admission to a professional school, should equal or exceed 2.50.

4. For the School of Electrical and Computer Engineering, the grade-point averages in 1. and 2. above are currently increased to 2.60.

While 60 semester hours are specified for the common pre-engineering curriculum, in some cases, preliminary courses pertinent to an individual major are recommended to be taken in the sophomore year. When such courses are taken, it is understood that pre-engineering course work may be deferred to the junior year. Furthermore, individual schools may impose higher standards for admission. Consult the Office of Student Academic Services for these details.

**Architecture.** Admission to the upper division (third year) in the School of Architecture is granted to the most qualified applicants up to the capacity of the program. However, to be considered, a student must have completed 60 semester credit hours, all required architecture courses specified for the first two years with grades of "C" or better, and maintained an overall GPA of 2.30 or better. Furthermore, first preference will be given to students who have completed ARCH 2114 prior to admission.

**Technology.** The specific requirements for continuation beyond the lower division in the various majors in the Division of Technology are not uniform. Programs may have stipulations regarding admission to the upper division. Attention is directed to the requirement sheet for the appropriate major or the publication, **Undergraduate Programs and Requirements** for the specific conditions a student must satisfy.

**Scholarships**

Several scholarships are funded through private donations, alumni gifts, and industries, and vary in amounts from $400 to over $2,000 per year. These scholarships are available for freshman through senior students, and are awarded primarily on the basis of academic achievement and leadership potential. However, during the selection process consideration may be given to financial need and other factors. Freshman students should normally have an ACT composite score of 29 or higher and be in the top 10 percent of their high school graduating class to be competitive for CEAT scholarships.

Each school or department within the College normally has scholarship funds available. These are administered through that school or department rather than through the College's scholarship committee. However, a separate application form is not required.

Application forms and information regarding CEAT may be obtained by contacting the Office of Student Academic Services, CEAT, EN 101, OSU, Stillwater, OK 74078.

**Freshman scholarship applications** must be completed and on file by March 1 preceding the academic year for which the student expects to receive the scholarship. Applications should be submitted to the Office of Student Academic Services.

OKLAHOMA STATE UNIVERSITY
Continuing and transfer students should submit scholarship applications to the head of the school in which they are majoring prior to May 1. In this manner they will also be considered for any departmental scholarships for which they may be eligible as well as for any CEAT scholarship. Students who have not selected a major should submit their applications to the Office of Student Academic Services.

Academic Advising

The College’s Office of Student Academic Services provides advisement for all pre-engineering students and pre-architecture students. (Consult the heading “Division of Engineering Technology” for specific information regarding advisement for students in technology programs.) When a student has gained admission to a professional school of engineering or architecture, he or she will be assigned a faculty advisor.

Each student is personally advised in the planning and scheduling of his or her course work and is counseled and advised individually on matters of career choice, his or her activities at OSU, and on other academic matters. An academic file is created for each student at the time of initial enrollment.

Retention Criteria

The following terms are subject to approval by the Oklahoma State Regents for Higher Education.

Progress Toward a Degree.

The conditions for satisfactory progress in an academic term are:
1. at least a 2.00 GPA for the term, for progress in an academic term are:
2. Students will be removed from probation at the end of any regular semester in which they meet the conditions of probation.
3. Students will be removed from probation at the end of any regular semester in which they meet the conditions of probation.
4. A student will be subject to suspension at the end of any term in which he or she fails to meet either their conditions of probation or OSU retention standards (See “Academic Regulations” in the Catalog.)
5. A student will not normally be suspended who is within 18 semester credit hours of graduation unless they fall below OSU retention standards.

Reinstatement

A CEAT Reinstatement Advisory Board is appointed by the dean each year with a representative from the Office of Student Academic Services, each School of Engineering, the Division of Engineering Technology and the School of Architecture. Requests for reinstatement in the CEAT should be submitted to the director of student services who serves as ex-officio chairman of the board. The chairman, the representative from the student’s major, and at least one other member of the board will review and act on requests for reinstatement. Requests will not normally be considered for reinstatement earlier than one semester following the date of suspension, although exceptional circumstances will be considered for earlier reinstatement. Detailed procedures and deadlines may be obtained from the Office of Student Academic Services.

Concurrent Enrollment

If a student expects to apply credits toward a degree at OSU that are to be earned at another institution or through correspondence or extension, while enrolled in one of the programs of the College of Engineering, Architecture and Technology, permission must be obtained in advance. It is the belief of the faculty of the College that such enrollment detracts from the educational process at this institution, and can be justified only in the most unusual circumstances. Normally, if the material for which such permission is sought is available at OSU, permission will not be granted, nor will retroactive permission be granted in any circumstances.

Calculators

An engineering, architecture or technology student is expected to be equipped with an appropriate calculator or computer. Necessary functions include exponential functions, the logarithm and inverse logarithm functions in both natural base and base 10, and the trigonometric and inverse trigonometric functions.

Special Academic Programs

Co-op Program. The College of Engineering, Architecture and Technology offers an experience-based program, Cooperative Education (Co-op). Co-op allows engineering and technology students to achieve a balanced education through the combination of theoretical and practical knowledge during their early years of professional development. The student’s education is a cooperative effort between the University and industry. Students alternate semesters on campus with work semesters in industry during their junior and senior years. The periods of employment constitute an essential element in the educational process. Students gain practical knowledge which is carried back to the classroom, giving academic programs a sense of reality. By the time they receive their degrees, students have accumulated the equivalent of a year-and-a-half of progressively challenging work experience.

Participation in Co-op is voluntary; transfer students must successfully complete at least one semester at OSU prior to their first placement. Students may obtain further information about the program from the coordinator, Room 101A, Engineering North.

Engineering Honors Program. The Honors Program provides opportunities for challenging and individual study for undergraduate students of unusually high ability, motivation and initiative. Honors classes, seminars and independent study courses are structured to put interested students and teachers together in ways which encourage discussion and a mature approach to learning. Invitation to the program is extended only to approximately the top five percent of entering students.

Each honors course completed with an “A” or “B” grade is identified on the student’s transcript as such. A special bachelor’s degree honors diploma is conferred upon graduation for successful completion of all Honors Program requirements.

Qualified high school students will be eligible for the Honors Program beginning with their first enrollment at OSU as freshmen. An ACT composite score of at least 27 is required.

All other OSU students and transfer students who are classified as freshmen (27 semester credit hours or fewer), with a grade-point average of 325 or above are eligible to join the Honors Program regardless of their ACT scores. A 3.50 GPA is required of students with 28 or more hours.

Requirements for a Bachelor’s Degree with Honors. (1) A grade-point average of 3.50, both overall and in the major field. (2) A total of 21 semester credit hours with grades of “A” or “B” in honors sections of basic introductory-type courses from four of the following areas: English or foreign languages, mathematics or logic, social sciences, natural or physical sciences and humanities. (3) Honors credit with grades of “A” or “B” in a total of 12 semester hours of junior and senior courses within the student’s major field, including at least three hours of independent study. (4) Acquisition and submission of a formal application for the honors degree within two weeks after the beginning of the final semester.

Job Placement. An employment service is provided for students in the College. This service is available to students interested in obtaining summer or permanent employment.

The placement office is coordinated with the University Placement Office and assists students in signing up for interviews with companies interviewing on campus. Lists of employment opportunities with companies not recruiting on campus are maintained at all times. Resources are available to assist the student seeking employment including company literature, resume information, interviewing tips and placement annuals.

Placement orientation sessions are held at the beginning of each semester to familiarize the students with the services provided.

Tutoring Program. A tutoring program is provided to assist students in their understanding of fundamental courses in mathematics, physics, chemistry and engineering science.

The sessions are held each fall and spring semester Monday through Thursday evenings. Each session lasts 30 minutes and the student is charged a nominal fee. Students may sign up for a maximum of one hour per evening if they wish.

Information about the program can be obtained in the Office of Student Academic Services.
Agricultural Engineering

Professor and Head David R. Thompson, Ph.D.

Agricultural engineers are professional people who generate and adapt engineering knowledge and technologies for the efficient and effective production, processing, storage, handling and distribution of agricultural, food and other biological products, and the management of natural resources.

Agricultural engineering utilizes basic engineering expertise, but focuses this knowledge on the invention, design and management of biological systems. The opportunities for agricultural engineers are as diverse as flood control, equipment design for food production and processing, design and management of processing facilities, and environmental control for plants and animals. Agricultural engineers develop and utilize machine vision systems for quality control, expert systems for process and machine optimization, unique machines for efficient manufacture or production of food, forest products and other biological materials, and environmental control systems for aquaculture, disease control or indoor plant production.

The problem-solving ability and broad-based engineering background of agricultural engineers make them well suited for activities such as research, development, design, production, management, technical sales and private consulting. The additional background in biological sciences provides graduates excellent opportunities for entering other professional schools, such as medicine, dentistry, veterinary medicine, biological sciences or agricultural programs. Many opportunities exist for international work in both developed and developing countries.

Agricultural engineering courses for juniors and seniors integrate the engineering sciences with agricultural and biological sciences and teach students to design solutions to real problems of society. Students work both as individuals and in teams to solve design problems provided by industrial firms who also hire agricultural engineering graduates. Students receive specialized design experiences in one or more of the following areas: hydrology and water resources, including flood control, irrigation, and water supply; machinery, instruments and controls for farming and ranching, food processing and packaging, and production of biotechnology products; and systems for efficient production, processing, handling and storage of agricultural and biological products.

Graduate Programs

The School of Agricultural Engineering offers three programs leading to post-baccalaureate degrees: Master of Agricultural Engineering, Master of Science and Doctor of Philosophy. The Master of Agricultural Engineering program places emphasis on design and internship in engineering experience to prepare the graduate for practice in the engineering profession.

Facilities for design and research are available in processing of agricultural products, plant and animal environment, energy in agriculture, microelectronics, machine vision, food engineering, agricultural power and machinery, pesticide application, soil and water resources development, irrigation, hydraulics, and hydrology.

Research projects are supported by the Agricultural Experiment Station. A well-trained faculty, many of them registered professional engineers with research, consulting and design experience, guide the graduate students’ activities and help plan programs to meet the students’ needs. Graduate students prepare designs and specifications for special equipment and facilities needed to carry out their work. They are expected to demonstrate by thesis and supporting research or by designs the ability to organize a design problem or an experimental investigation, carry it to completion and report the results.

Admission Requirements. Admission to either the Master of Science or Doctor of Philosophy degree program requires graduation from an engineering curriculum accredited by the Accreditation Board for Engineering and Technology. Admission to the Master of Agricultural Engineering degree program is permitted for students who meet the prerequisites as stated in the "Master of Engineering" section in the Catalog. The departmental graduate committee will evaluate the applicant's credentials to determine equivalency and specify requirements to overcome deficiencies. A student must be accepted by an adviser in the School prior to official admission to the graduate program.

Degree Requirements. A candidate for any of the degrees listed above follows an approved plan of study which must satisfy at least the minimum University requirements for that particular degree.

Departmental Clubs and Honor Societies

Alpha Epsilon (juniors & seniors in agricultural engineering)
Alpha Pi Mu (honor society for juniors & seniors in engineering)
Amateur Radio Club
American Institute of Architects
American Institute of Astronautics & Aeronautics
American Institute of Chemical Engineers
American Society of Agricultural Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers
American Society of Civil Engineers
CEAT Student Council
Chi Epsilon (civil, architectural or general engineering honor society)
Construction Management Society
Construction Specifications Institute
Engineerettes (sponsors of students in CEAT)
CEAT Student Council
Eta Kappa Nu (electrical engineering honor society)
Fire Protection Society
Institute of Electrical & Electronics Engineers
Institute of Industrial Engineers
Omega Chi Epsilon (chemical engineering students)
Pi Tau Sigma (mechanical and aerospace engineering honor society)
Society of Automotive Engineers
Society of Black Engineers, Technologists & Architects
Society of Electronic Electrical Power Technology
Society of Manufacturing Engineers
Society of Mechanical Technicians
Society of Petroleum Engineers
Society of Women Engineers
Tau Alpha Pi (technology honor society)
Tau Beta Pi (engineering students honor society)
Tau Iota Epsilon (technology students)

School of Architecture

Professor and Head James F. Knight, M.Arch., AIA

The School of Architecture, founded in 1909, offers professional degree programs in both architecture and architectural engineering. The integration of these programs through shared faculty, facilities and course work is a major strength of the School. It is one of the few such integrated programs in the United States, and as such produces graduates who are particularly prepared for the integrated team processes used in professional practice. The School of Architecture is a primary unit in the College of Engineering, Architecture and Technology, and therefore benefits from excellent state-of-the-art resources which significantly enhance the School's professional programs.

The School of Architecture is dedicated to providing a high quality and focused professional education to students whose career goals are to enter the practice of architecture or architectural engineering. Professional and liberal study electives provide opportunities for educational breadth or depth and a possible double degree in both architecture and architectural engineering.

The employment demand for OSU graduates consistently exceeds the supply potential of the School. Oklahoma State University graduates are recruited by the leading architectural and architectural engineering firms both in Oklahoma and nationally. The Oklahoma State University School of Architecture is particularly proud of having among its alumni many of the leaders of the best firms in the country, an AIA Gold Medalist (the highest award given to an architect), and presidents of the American Institute of Architects (AIA) and the National Architectural Accreditation Board (NAARB).

Architecture

Architecture is the complex synthesis of creatively solving problems involving both art and science through the disciplined orchestration of image making, activity organization, technological applications, legal constraints, and budgetary parameters which together express culture, enhance quality of life and contribute to the environment.

OKLAHOMA STATE UNIVERSITY

97
Education in architecture consists of campus-oriented classroom and studio courses, as well as off-campus studies. It is conducted in an intellectual climate which stimulates inquiry, introduces principles and values, and teaches the disciplines necessary to work in collaboration with others. The goal of the program is the education of future leaders within the architecture profession.

The design studio is the center of the School’s educational program. It is the setting where students and faculty work most closely together, and where all specialized study and knowledge comes together and is synthesized in design. The record of OSU students’ achievements in the design studios is evidenced by the success in national and international architectural design competitions. Over the last 40 years, the School has the second highest number of winners and finalists of any program in the United States in these prestigious competitions.

The program has long been known as one of the strongest professional programs in the United States. OSU graduates are consistently offered employment opportunities in many of the best architectural offices in Oklahoma and throughout the United States. The program is fully accredited by the National Architectural Accreditation Board.

Undergraduate Curriculum

The programs in architecture and architectural engineering are five years long and offer the professional degrees of Bachelor of Architecture and Bachelor of Architectural Engineering, which are required for professional licensure.

Undergraduate Admission. Students who satisfy the University admission requirements are eligible to enroll for the first two years of the program. Upon completion of these two years, the best qualified students are selected, upon application, by the School for admission to the upper division. Admission is based upon academic achievement and professional potential. Admission criteria are subject to annual review by the School and may be obtained directly from the School.

Transfer students are required to furnish transcripts and course descriptions for previous classroom courses, as well as examples of previous studio work. Evaluation and enrollment by the School is on a course-by-course basis for all transfer students.

Foreign Study. The School of Architecture is committed to preparing its graduates for the professional opportunities presented by the expanding global economy. As part of this preparation, the School offers a 10-week Summer Foreign Study Program based in Versailles, France. This program has been designed to supplement the required curriculum. Students study, in an organized and disciplined fashion, major examples of modern and historic European architecture including urban issues. Both analytic and artistic sketching skills are the main tools developed in this course of study.

Experience has shown that the Summer Foreign Program significantly increases a student’s level of maturity, independent thinking, and cultural and social awareness of others. Knowing the values and accomplishments of other cultures not only deepens and broadens knowledge and abilities, it also makes a student a better and more responsible citizen of his or her own country.

Six weeks of the 10-week program is spent under the direct supervision and instruction of faculty from OSU in France. The remainder of the 10 weeks is spent in travel study in other countries in western and central Europe. Housing while in Versailles is provided in French family houses, enriching the cultural experience of each student.

Faculty and Facilities. In keeping with the professional orientation of the School, the faculty each have extensive experience as successful practicing architects and architectural engineers, as well as outstanding scholastic records. Faculty experience includes the design of virtually all building types and systems in the many varied climates of Europe and Asia, as well as North and South America.

The School of Architecture is housed in the Architecture Building, the original University Gymnasium and Armory, built in 1918. This structure was extensively remodeled in 1976 and contains all studios, laboratories, galleries and offices of the School. Specialized facilities include the Cunningham Library, containing all of the University’s holdings on architecture and a hilly-equipped Computer-assisted Design Laboratory. The faculty and students are especially proud of the Architecture Building, for it serves as an example of innovative architectural design and the adaptive reuse of an important building.

Student Work Projects submitted for regular class assignments may be retained by the School. All projects not retained will be available to the student.

Student Body. With the curriculum based upon extensive and personalized student-faculty interaction, the student-faculty ratio in studio courses is set at approximately 15 to 1. Annual student enrollment is approximately 300 students of whom 22 percent are women and 18 percent are international students, thus providing a rich and diverse educational environment. A variety of student organizations and activities are available.

Graduate Programs

The School offers the opportunity for specialized study at the graduate level in architecture and architectural engineering. These programs lead to the post-professional degrees, Master of Architecture and Master of Architectural Engineering.

These graduate programs are designed for students already possessing their first professional or five-year degree. Each graduate program is normally one-year long and consists of a minimum of 32 credit hours.

Candidates with nonprofessional four-year undergraduate degrees may apply for admission to the professional degree program and, if admitted, complete the requirements for a Bachelor of Architecture degree. Application may then be made to the School’s graduate program.

Graduate Admissions. Admission is limited and based upon undergraduate academic records and accomplishments, examples of work, practical experience and recommendations from practicing architects, engineers and educators.

Admission depends upon being accepted by the Graduate College of the University and by the School’s Graduate Admissions Committee. Complete applications for admission must be filed with both the Graduate College and the School by February 15. The School’s Graduate Admissions Committee will review all applications by March 31. Late applications will be considered only if vacancies exist. Normally, applications to the graduate program are considered for admission beginning the following fall semester only.

Student Portfolios. For the Master of Architecture program, photographic examples of work performed in architectural design and other professional courses or actual practice are to be submitted with the admissions application for review by the School. Slides are not acceptable. Portfolios should be mailed directly to the School to arrive no later than February 15. Candidates for admission to the Master of Architectural Engineering program are not required to submit a portfolio.

Regulations and Procedures. Regulations and procedures as established by the Graduate College for a master’s degree apply to the School’s graduate programs, except as otherwise noted in the School’s current program description. This description is reviewed by the School annually, and may be obtained directly from the School.

For further information, contact the School of Architecture, Oklahoma State University, Stillwater, OK 74078-1085.

ARCHITECTURAL ENGINEERING

The architectural engineering program focuses on the creative and analytical solutions to the technological aspects of building design.

Architectural engineering at OSU concentrates on the design of building structural systems to resist the various forces of nature, such as gravity, winds and earthquakes, as well as the forces of man. It involves the detailed study and use of materials such as steel, concrete and wood in applications as diverse as earth-sheltered structures, high-rise and long-span structures.

Architectural engineers practice in a wide variety of professional engineering settings such as consulting firms, architectural firms, industrial or commercial organizations and government agencies. The program’s educational goal, as in architecture, is to provide the education necessary for leadership in the architectural engineering profession.

Graduate Admissions.

AMOCO Chair and Head Robert L. Robinson, Jr., Ph.D., P.E.

Chemical engineering applies chemical, physical, and engineering principles to solve important problems and to supply vital materials for our technology-based civilization. Their work includes pharmaceuticals, fuels, industrial chemicals, bioengineering and much more. It includes energy conservation and pollution control. The emphasis on chemistry and the chemical nature of everything people use is what makes chemical engineers different from other kinds of engineers.

Chemical Engineering
Graduate Programs

The School of Chemical Engineering offers programs leading to post-baccalaureate degrees: the Master of Science degree, and the Doctor of Philosophy degree.

A program of independent study and research on a project under the direction of a member of the Graduate Faculty will be satisfactorily completed by all graduate students. For the Master of Science candidate, the project may result in a thesis. For the Doctor of Philosophy candidate, the project will result in his or her dissertation.

Admission Requirements. Admission to either the Master of Science or Doctor of Philosophy degree program requires graduation from a chemical engineering curriculum approved by the American Institute of Chemical Engineers. Graduates from other curricula should submit transcripts to the head of the School of Chemical Engineering for evaluation.

The Master of Science Degree.

General requirements for the Master of Science degree in chemical engineering are 30 semester credit hours beyond the B.S. degree course work and an acceptable thesis (a minimum of six hours of credit required for thesis research). The chemical engineering courses taken must include CHENG 5213, 5423, 5633, 5843, and 5743.

The Doctor of Philosophy Degree.

The general credit requirement is a minimum of 90 semester credit hours beyond the B.S. degree including at least 30 hours of credit for research. The student must select a minor field with at least 12 hours of credit in this area. The chemical engineering courses must include CHENG 6023 or 6113, at least three other 6000-level CHENG courses, and six hours of credit in other 5000- and 6000-level CHENG courses. Each student is responsible for consultation with his or her advisory committee in preparing the study plan.

Professor and Head Robert K Hughes, Ph.D., P.E.

The exceptional diversity of professional practice in civil engineering presents many career opportunities for students well-founded in the physical sciences, mathematics, geology and biology.

The concern of civil engineers is a person’s environment—its control, alteration and utilization. Civil engineers engage in planning, designing and constructing highways, waterway and railway systems, harbors and shipping facilities, systems for the treatment and distribution of water and for the collection and treatment of sewage and industrial waste, dams and hydroelectric works, airports and terminals, structures of every kind including buildings, bridges, towers, industrial plants, tunnels and subway systems, controls for the collection of air pollution, and many other works of general benefit to society.

Civil Engineering

The professional curriculum in civil engineering is based on the pre-engineering courses in mathematics, physical sciences and engineering sciences. On this foundation, required courses train the student in the basic skills needed for the professional practice of civil engineering and provide the tools for more advanced study. Engineering theory and principles are developed in a way that will encourage their application to the solution of practical problems. Elective courses give experience in the solution of typical problems and develop the judgment and confidence of the student engineer.

The purpose of the curriculum is to prepare the student for his or her professional career as a designer, office engineer, field engineer, contractor, engineering businessperson or manager. The graduate of this program will be well-prepared for work in engineering offices, city, state and federal governments and organizations, and the construction, chemical, petroleum and transportation industries, and in areas of environmental concern.

Some degree of specialization is provided through the choice of elective courses in structures, engineering mechanics, transportation engineering, soil mechanics and foundations, construction engineering and management, environmental engineering and water resources. Strong support for various parts of the program are given by the departments of Industrial Engineering and Management, Mechanical and Aerospace Engineering, Agronomy, Business Administration, Chemistry, Geology, and Microbiology.

Graduate Programs

The School of Civil Engineering offers five programs leading to post-baccalaureate degrees—the Master of Civil Engineering degree, the Master of Environmental Engineering degree, the Master of Science degree in civil engineering, the Master of Science degree in environmental engineering, and the Doctor of Philosophy degree. The Master of Civil and Environmental Engineering degrees are graduate professional degrees with increased emphasis on professional practice through a broad spectrum of management, economic and technical studies and the incorporation of actual engineering design experience before graduation. The Master of Science degree, on the other hand, is characterized by a higher degree of technical specialization in a particular area of study. The Doctor of Philosophy degree is designed to prepare a student for research and for the teaching profession in engineering.

Major areas of study in the School are applied mechanics, structural analysis and design, transportation, construction engineering and management, geotechnical engineering, water resources, and environmental engineering. Research in all major fields is continuously pursued. Master of Civil Engineering candidates may choose either to specialize or to engage in a broadly based program of study, in accordance with an approved and purposeful plan of study.

Admission Requirements. Candidates for the Master of Science or Doctor of Philosophy degree must have graduated from a civil engineering curriculum accredited by the Accreditation Board for Engineering and Technology. Graduates from other curricula and schools should submit transcripts to the head of the School of Civil Engineering for evaluation. Admission to the Master of Science in environmental engineering degree program is permitted for students who meet the minimum prerequisites as established by the School of Civil Engineering.

Degree Requirements. All degree programs follow an approved plan of study that must be submitted at a designated time. All programs are characterized by the flexibility available in a study plan that is designed to satisfy the particular needs of the student, while conforming to the general requirements implied by the title of the degree and specified by the University.

The Master of Science degree in either civil or environmental engineering requires the completion of at least 30 semester credit hours beyond the bachelor's degree, including a research thesis for which not more than six semester credit hours may be granted. The non-thesis option (32 semester credit hours) described in the "Graduate College" section may be permitted at the discretion of the student's adviser.

The Doctor of Philosophy degree requires the completion of at least 90 semester credit hours of course work beyond the bachelor's degree, including not more than 30 semester credit hours for the research thesis. In addition, the candidate must complete six semester credit hours of course work in an area such as languages, mathematics, statistics, experimental techniques, research methodology, or similutle.
(as specified by the advisory committee) that will facilitate his or her research effort. Generally, official admission as a candidate for the Doctor of Philosophy degree in any program offered by the School will not be granted until a member of the Graduate Faculty in the School agrees to serve as major (or thesis) adviser for the prospective candidate.

**Computer Engineering**

A special program option in computer engineering is offered by the School of Electrical and Computer Engineering. This option is designed for students who have a strong interest in computers and desire to gain a full understanding of both the electronic hardware and the programming software aspects of modern computer systems. A student in computer engineering will also gain a detailed knowledge of one or more applications where computers are being used as integral components of advanced engineering systems; examples are instrumentation and test facilities, communication systems, power systems and process control systems. Students in computer engineering will work directly with microprocessors, minicomputers, and minicomputers and develop special electronic circuits for interfacing these computers to various peripheral devices.

In addition to the laboratories devoted to research, separate instructional laboratories give students "hands-on" experience in microcomputers, minicomputers, digital logic design, electronics, electrical machinery, networks, instrumentation and electromagnetics. In most instances, the student is guided through laboratory exercises which are closely related to classroom lectures. Here the student has the opportunity to verify theoretical principles and design concepts presented in the lectures. In other courses, the laboratory formats are more open-ended, allowing the student to experiment freely and exercise individual discretion in discovering experimental results.

The School of Electrical and Computer Engineering offers a full range of undergraduate and graduate program options. A degree in electrical or computer engineering is also an excellent foundation for graduate work in other professional fields such as medicine and law. Many graduates also pursue advanced programs in business and management after earning a degree in engineering.

**Graduate Programs**

The School of Electrical and Computer Engineering offers three graduate degrees: Master of Electrical Engineering, Master of Science and Doctor of Philosophy. The Master of Electrical Engineering degree is designed to prepare the graduate for the practice of the engineering profession and is distinguished by the incorporation of an internship program to give students practical engineering design experience before graduation.

The Master of Science degree is designed for students interested in careers in industry and government service that emphasize advanced design, development, and research methods for high technology. This degree incorporates advanced course work and on-campus creative activities.

The Doctor of Philosophy degree is designed to prepare the student for high-level research/development positions in industry and government and for the teaching profession in engineering and is distinguished by the emphasis on research and by the incorporation of a doctoral thesis.

Students may select course work and participate in research and design projects in the following areas: computer engineering, energy systems, control theory, communications, electromagnetics, electronics, network theory, solid-state devices, artificial intelligence, parallel processing, and lasers.

In addition, students may elect a multidisciplinary program that crosses departmental lines and emphasizes the application of electrical engineering and systems theory to complex problems involving the interaction of engineering systems and technology with social, economic and environmental processes.

**Admission Requirements. Admission to the Graduate College, as described under "General Regulations" in the "Graduate College" section of the Catalog is the first step for those students proceeding toward advanced degrees. Graduation from an electrical engineering curriculum accredited by the Accreditation Board for Engineering and Technology with high scholastic performance qualifies the student for admission to the School of Electrical and Computer Engineering as a candidate for any of the three advanced degrees offered.

Graduates from non-engineering fields such as mathematics, physics and computer science are also admitted to Electrical Engineering M.S. and Ph.D. graduate programs if an evaluation of their transcripts indicates they are prepared to take graduate-level course work in electrical engineering, or can be expected to do so after a reasonable amount of remedial course work. This condition also applies to graduates of unaccredited engineering programs and engineering technology programs.

Admission to the Master of Electrical Engineering program is permitted for students who meet the minimum prerequisites as stated in the section "Master of Engineering." Students may enter the program at any level for which they are qualified; they must at least meet the minimum admission criteria and be accepted by the School of Electrical and Computer Engineering.

**Degree Requirements.** The Master of Electrical Engineering degree is awarded to those who complete 32 hours of credit meeting Graduate College requirements for a Plan III master's degree program. The plan of study for this program must include at least 24 hours of course work, with more than half in electrical engineering at the 5000 level or above, and six to eight hours of credit for the internship practice. Flexibility is permitted in selecting courses to achieve specific program objectives.

The Master of Science degree is awarded to those students who successfully complete an approved plan of study under one of two possible options. If a thesis is written, 30 semester credit hours are required, including six hours credit for the thesis. If no thesis is written, 32 semester credit hours are required, including two hours credit for a creative activity. To be approved, a plan of study will include, as a minimum, 18 hours of 5000-level courses in electrical and computer engineering. Most plans of study include additional 5000-level courses, depending upon the background and particular educational goals of the student, and the minimum stated above is allowed only when a specific interdisciplinary plan of study is approved by the faculty. Each student is encouraged to include courses in supporting disciplines such as mathematics, computer science, statistics, business or other engineering fields. In certain cases, remedial work in undergraduate electrical and computer engineering will be required in addition to the 30-32 hours specified above.

The Doctor of Philosophy degree is granted in recognition of high achievement in scholarship in course work selected from the broad field of electrical engineering, and an independent investigation of a research problem in a chosen field of specialization that leads to a contribution to knowledge, as presented in a dissertation. For this degree the Graduate College requires a minimum of 90 credit hours for acceptable academic work beyond the bachelor's degree, including credit for the dissertation.
The School of Electrical and Computer Engineering also participates in the Master of Manufacturing Systems Engineering Program. (See "Graduate Programs" under "Industrial Engineering and Management")

**General Engineering**

**Professor and Head Carl B. Estes, Ph.D., P.E.**

For the student with interests that do not conform to any one of the traditional engineering disciplines, OSU offers a structured interdisciplinary program that continues the breadth developed in all engineering students in the engineering sciences course work, and has considerable depth.

**Programs**

The School of General Engineering offers three programs leading to post-baccalaureate degrees: the Master of General Engineering degree, the Master of Science degree in general engineering, and the Doctor of Philosophy degree. The Master of General Engineering degree is distinguished by its increased emphasis on professional practice and design through a broad spectrum of technical, management and economic studies and the incorporation of an internship program to provide actual engineering experience before graduation. The Master of Science degree is characterized by a higher degree of technical specialization. The Doctor of Philosophy degree is a research-oriented degree designed to prepare the candidate for a career in teaching or research.

**Admission Requirements**

Admission to either the Master of Science or Doctor of Philosophy degree program requires graduation preferably from an engineering curriculum accredited by the Accreditation Board for Engineering and Technology. Graduates from unaccredited engineering curricula or from curricula in chemistry, physics, and mathematics should submit transcripts to the head of the School of General Engineering for evaluation.

Admission to the Master of General Engineering degree program is permitted for students who meet the minimum prerequisites stated in "Master of Engineering." A student may enter the program at any level for which he or she is qualified provided the minimum admission criteria have been met and the student has been accepted by the head of the School of General Engineering.

**Degree Requirements**

An approved plan of study is developed for each student. All programs are characterized by the flexibility available in a study plan that is designed to satisfy the particular needs of the student, while conforming to the general requirements for the degree as specified by the University and as implied by the title of the degree.

**Graduate Programs**

The School of General Engineering offers three programs leading to post-baccalaureate degrees: the Master of General Engineering degree, the Master of Science degree in general engineering, and the Doctor of Philosophy degree. The Master of General Engineering degree is distinguished by its increased emphasis on professional practice and design through a broad spectrum of technical, management and economic studies and the incorporation of an internship program to provide actual engineering experience before graduation. The Master of Science degree is characterized by a higher degree of technical specialization. The Doctor of Philosophy degree is a research-oriented degree designed to prepare the candidate for a career in teaching or research.

**Major areas of study in general engineering follow the undergraduate pattern of combining course work from civil, electrical, industrial and mechanical engineering. Research is pursued with the option of limiting studies to one of the cooperating areas or of combining the areas.**

**Admission Requirements.** Admission to either the Master of Science or Doctor of Philosophy degree program requires graduation preferably from an engineering curriculum accredited by the Accreditation Board for Engineering and Technology. Graduates from unaccredited engineering curricula or from curricula in chemistry, physics, and mathematics should submit transcripts to the head of the School of General Engineering for evaluation.

Admission to the Master of General Engineering degree program is permitted for students who meet the minimum prerequisites stated in "Master of Engineering." A student may enter the program at any level for which he or she is qualified provided the minimum admission criteria have been met and the student has been accepted by the head of the School of General Engineering.

**Degree Requirements.** An approved plan of study is developed for each student. All programs are characterized by the flexibility available in a study plan that is designed to satisfy the particular needs of the student, while conforming to the general requirements for the degree as specified by the University and as implied by the title of the degree.

**The Master of General Engineering degree requires about three years of study beyond the pre-engineering requirements and involves not fewer than 100 semester credit hours of course work including an internship period.** The plan of study for the graduate professional (third) year should include eight semester credit hours of internship/professional practice; and three semester credit hours of humanities beyond the undergraduate requirements. At least 32 semester credit hours must be included in the graduate professional study plan, and of these, 12 or more semester credit hours must be in design, as defined by the Accreditation Board for Engineering and Technology, and 21 semester credit hours shall be in 5000-level courses or above. Any remaining course work may consist of specified courses to meet the objectives of the student and the curriculum.

The Master of Science degree program is based on an integrated plan of study with a specific objective for each candidate. The Master of Science degree requires the completion of approximately 30 semester credit hours beyond the bachelor’s degree including a research thesis of six semester credit hours. Students from disciplines other than general engineering will be required to follow study plans designed to produce the breadth expected of a general engineer, and will require 32 semester credit hours if no thesis is pursued.

The Doctor of Philosophy degree in general engineering requires the completion of no fewer than 90 semester credit hours beyond the bachelor’s degree, or 60 semester credit hours beyond a master’s degree, including credit for a research dissertation. In the plan of study, the mathematics and technical engineering courses are directed toward and support the proposed area of research. Emphasis may be placed on two or more areas of concentration which support the research and dissertation. The ideal plan of study should generally include: 12-18 credit hours of mathematics above the bachelor’s degree or bachelor’s certification, six credit hours of humanities, and 18-24 credit hours of research. The semester credit hours remaining to complete the plan of study should be selected to satisfy all requirements of the Graduate College, and to supplement the student’s academic background. The overall plan of study is subject to the approval of the student’s advisory committee.

The curriculum blends a basic group of common engineering science courses with specialized courses in the major areas of industrial engineering—design of human/machine systems, design of management control systems and improvement of operations (both manufacturing and service). The course offerings stress mathematical and statistical techniques of industrial systems analysis, quantitative methodologies of operations research, computer as a tool for problem solving and simulation, economic considerations of alternatives, control of product or service quality and quantity, specifications of the manufacturing process including equipment and tooling, planning, scheduling and control of work flow, and behavioral sciences in the organization and management of human endeavor.
Prospective students are encouraged to write directly to the School of Industrial Engineering and Management for career guidance information.

**Graduate Programs**

The School of Industrial Engineering and Management offers graduate programs leading to the Master of Industrial Engineering and Management degree, the Master of Science degree, and the Doctor of Philosophy degree. The School is also one of the joint sponsors of the Master of Manufacturing Systems Engineering degree.

The Master of Industrial Engineering and Management degree is a graduate professional degree with increased emphasis on professional practice, incorporating an engineering design experience during the final year of study.

The Master of Science degree is characterized by a higher degree of technical specialization in a particular field of study. This degree program is designed to prepare men and women for technical positions such as research and consulting, as well as professional practice, in various kinds of organizations.

The Master of Science degree and the Master of Industrial Engineering and Management degree are intended to be especially attractive to all engineering graduates, including non-industrial engineers, and to many science majors. The two degree programs include a strong, technical component and an orientation to business and management which is complementary to other technical backgrounds.

The Doctor of Philosophy degree is designed to carry the student to the leading edge of knowledge in the profession of industrial engineering and management. It is intended to prepare men and women for highly specialized positions, such as research and consulting in industry, government and service organizations, and for teaching and research positions in colleges and universities.

The Master of Manufacturing Systems Engineering degree emphasizes a broad exposure to manufacturing from the perspective of the industrial, electrical and mechanical engineering disciplines. Students select courses from all three engineering disciplines. The program is oriented toward engineering practice in integrated manufacturing systems. Structured as a terminal degree, it prepares individuals with knowledge of all aspects of manufacturing systems, including management as well as hardware aspects of manufacturing.

The basic consideration in graduate education in industrial engineering and management at this institution is the most effective and efficient utilization of human, physical, and economic resources. Instruction in management embraces both qualitative and quantitative concepts, including analytical methodologies and social considerations pertinent to organizations of many kinds.

Staff and facilities are available for the study and practice of several phases of industrial engineering. Advanced degree programs may be arranged with major emphasis in fields of interest such as industrial management, management systems analysis and design, operations research, production control, quality assurance, economic analysis, methods engineering, energy management and other qualitative and quantitative facets. Students may complement industrial engineering and management courses with work in several other branches of engineering, as well as economics, business administration, computer science, statistics, mathematic, psychology, and sociology.

**Admission Requirements.** Graduation from an accredited engineering curriculum with scholastic performance distinctly above average qualifies the student for admission to the Master of Science or Doctor of Philosophy degree programs. Applicants not meeting these criteria should submit transcripts to the head of the School of Industrial Engineering and Management for evaluation.

Admission to the Master of Industrial Engineering and Management degree program is permitted for students who meet the minimum prerequisites as stated in "Master of Engineering." A student may enter the program at a point for which he or she is qualified provided the minimum admissions criteria are met and the student is accepted by the School of Industrial Engineering and Management.

**Degree Requirements.** The Master of Industrial Engineering and Management degree requires the completion of approximately three years of study beyond the pre-engineering requirements, for a total of 157 semester credit hours, including the internship or professional practice.

The Master of Science degree in industrial engineering and management requires the completion of at least 30 semester credit hours beyond the bachelor's degree, including a research thesis of six semester credit hours. A 32 semester credit hour option is also permitted and must include three to five hours of independent study.

The Doctor of Philosophy degree requires the completion of at least 90 semester credit hours of course work beyond the bachelor's degree or 60 semester credit hours of course work beyond the master's degree, including normally about 20 semester credit hours for a research thesis. In addition, the candidate must complete six semester credit hours of course work in an area such as mathematics, statistics, experimental techniques, or research methodology (as specified by the advisory committee).

The Master of Manufacturing Systems Engineering degree requires the completion of 33 semester credit hours beyond the bachelor's degree and normally includes six credit hours based upon an internship in industry.

**Mechanical and Aerospace Engineering**

Professor and Head Lawrence L. Hoberock, Ph.D., P.E.

Mechanical engineering is a professional discipline which involves the invention, design, and manufacture of devices, machines and systems that serve the ever-changing needs of modern society.

Mechanical engineering is an exceedingly diverse field which is not identified with or restricted to any particular vehicle, device or system. Mechanical engineers are vitally concerned with all forms of energy production, utilization and conservation. They deal with everything mechanical, whether it is small or large, simple or complex-from power lawn mowers to automobiles, fuel cells to nuclear power plants, gas turbine engines to interplanetary space vehicles, artificial limbs to life support systems, robotic manipulators to complex automatic packaging machines, precision instruments to construction machinery, household appliances to mass transit systems, and heating and air-conditioning systems to offshore drilling platforms. In virtually every organization where engineers are employed, mechanical engineers are included.

The aerospace option within mechanical engineering is concerned with the science and technology of flight, and the design of air, land and sea vehicles for transportation and exploration. This exciting field has already led man to the moon and continues to lead in the expansion of man's frontiers deeper into space and into the ocean's depths. Because of their unique backgrounds in aerodynamics and lightweight structures, aerospace-oriented mechanical engineers are becoming increasingly involved in solving some of society's most pressing and complex problems, such as high-speed ground transportation and pollution of the environment.

The aerospace option in mechanical engineering is separately accredited as an aerospace group program by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. Program criteria developed by the American Institute of Aeronautics and Astronautics as well as by the Society of Mechanical Engineers have been applied in the accreditation process.

The broad background and problem-solving ability of mechanical engineers make them suited to engage in one or more of the following activities: research, development, design, production, operation, management, technical sales, patent law and private consulting. Versatility is their trademark. A bachelor's degree in mechanical engineering is also an excellent background for entering other professional schools such as medicine, dentistry, law or business (M.B.A). A formal premedical option is available for students wishing to follow this avenue of approach to medical school. A petroleum engineering option is also available.

In the professional school, mechanical engineering students extend their study of the engineering sciences and consider applications of fundamental principles and analysis tools to the solution of real technological problems of society. Students make extensive use of modern electronic digital computers in virtually every course in their program. Design courses involve students in the solution of authentic, current and significant engineering problems provided by industrial firms, such as Ford, Fisher Controls, IBM, Whirlpool, Conoco, Phillips, Halliburton, Procter and Gamble, Mobil, Texas Instruments, Magnetic Peripherals, 3M, General Dynamics and Boeing. These industrial firms also are representative of those hundreds of firms that employ mechanical engineers with the aerospace option.
Graduate Programs

The School of Mechanical and Aerospace Engineering offers programs leading to the Master of Mechanical Engineering degree, Master of Science degree, and the Doctor of Philosophy degree.

The Master of Science degree and the Doctor of Philosophy degree prepare the graduate for research/development positions in industry and government, or for the teaching profession in engineering. These degrees are distinguished by the incorporation of a research component.

The Master of Mechanical Engineering degree prepares the graduate for engineering practice and is distinguished by its incorporation of an off-campus internship in industry to give the student engineering design experience before graduation.

Students may select course work and participate in research or design projects in the following areas: fluid mechanics and aerodynamics, thermal and environmental sciences, engineering acoustics and vibrations, manufacturing, systems design, energy conversion and utilization, solid and experimental mechanics and materials behavior, systems dynamics and automatic control, fluid control systems, and biomechanics. Students are encouraged to take courses in mathematics and science and in other fields of engineering which fit into their programs.

Admission Requirements.

Admission to the Graduate College is required of all students pursuing the M.Mech.E., M.S., or Ph.D. degree. Graduation from a mechanical or aerospace engineering curriculum accredited by the Accreditation Board for Engineering and Technology, with scholastic performance distinctly above average, qualifies the student for admission to the School of Mechanical and Aerospace Engineering as a candidate for the M.S. and Ph.D. degrees. Graduates from disciplines other than mechanical or aerospace engineering may be admitted if an evaluation of their transcripts by the School of Mechanical and Aerospace Engineering indicates they are prepared to take graduate-level course work in mechanical engineering, or can be expected to do so after a reasonable amount of prerequisite work.

Admission to the Master of Mechanical Engineering degree program is for students who meet the prerequisites stated under “Master of Engineering.” A student may enter the program at any level for which the individual is qualified, provided he or she meets the minimum admission criteria and is accepted by the School of Mechanical and Aerospace Engineering.

Degree Requirements. All degree programs follow an approved plan of study designed to satisfy the individual goals of the student, while conforming to the general requirements of the School of Mechanical and Aerospace Engineering and the Graduate College.

The Master of Mechanical Engineering degree requires 24 semester hours of approved graduate-level course work and a prescribed internship. As a result of the internship, a written report acceptable to the faculty must be submitted for completion of the degree requirement.

The Master of Science degree program with the thesis option requires 24 semester credit hours of approved graduate-level course work, and a suitable research thesis of six semester credit hours. The non-thesis option requires 32 semester credit hours of which three to five must be for an acceptable, individually directed creative activity which results in a written and oral report to the faculty.

The Doctor of Philosophy degree requires a minimum of 90 semester credit hours beyond the bachelor’s degree, including a dissertation for which no more than 30 semester credit hours may be awarded.

The School of Mechanical and Aerospace Engineering also participates in the Master of Manufacturing Systems Engineering degree program. (See “Graduate Programs” under “Industrial Engineering and Management”)

Professor and Director James E. Bose, Ph.D., P.E.

Engineering technology education is concerned with the practical application of engineering achievement with emphasis upon the end product rather than the conceptual process. Whereas the development of new methods is the mark of the engineer, effective use of established methods is the mark of the technologist. Often the technologist will be expected to achieve what the engineer conceives.

Engineering technology education is a four-year program which leads to a Bachelor of Science in Engineering Technology. Graduates of the program are known as “technologists” and are trained either to assist engineers or to independently provide the support for engineering activities. The technologist receives an intensive education in his or her technical specialty and great depth in mathematics and technical sciences. The program provides breadth in related technical, communication and socio-humanistic studies. A “master of detail,” he or she is capable of independent action in performance of technical activities and is frequently involved as a coordinator, expeditor or supervisor of other technical personnel. His or her capability in technical sales and other public-contact positions is enhanced by his or her background in selected liberal studies.

The engineering technology graduate is qualified to select from a broad array of engineering-related positions. Job titles of engineering technology graduates include field engineer, test engineer, associate engineer, product engineer, sales engineer, tool designer, production engineer, engineering technologist and others.

The Bachelor of Science in Engineering Technology program is composed of the following curricular subdivisions:

Mathematics and science-algebra, trigonometry, applied calculus, general physics, and chemistry or other science.

Technical specialty-technical science and related technical courses.
CONSTRUCTION MANAGEMENT TECHNOLOGY
Associate Professor and Head
Jerrod F. Bradley, M.S., P.E.

The construction industry is the largest industry in the world. Leadership in this field requires a broad knowledge of labor, materials, equipment, capital and construction procedures. The interdisciplinary approach of the construction management program offers the student specialized course work in all phases of construction, designed to prepare him or her for responsible positions in industry.

The modern constructor must have a great deal of technical knowledge to keep abreast with rapidly changing materials and methods of construction. Specialized courses in estimating, surveying, structures, construction planning and scheduling, construction law and insurance, field and office management and construction procedures provide students with the background necessary for today’s construction industry. These specialized courses, in addition to a blend of the basic sciences, business, and general studies, produce a well-balanced curriculum for students in construction. Special attention is given to computer application in construction estimating.

Students with an interest in building structures may select courses in the “building” option of construction management which provides him or her with a knowledge in working drawings, mechanical and electrical equipment of buildings, and other course work for a career in building construction.

Students with an interest in civil engineering structures may select courses in the “building” option of construction management which provides him or her with a knowledge in working drawings, mechanical and electrical equipment of buildings, and other course work for a career in building construction.

Graduates of construction management have shown the curriculum to be successful in their development as productive members of the construction industry, holding responsible positions as project managers, estimators, material and equipment salespersons, labor management and construction managers.

ELECTRONICS AND COMPUTER TECHNOLOGY
Associate Professor and Head
Thomas G. Bertenshaw, M.S., M.Ed.

The electronics technology curriculum provides preparation for outstanding career opportunities not only in the electronics industry itself but also in many other areas in modern industry which depend upon electronics for control, communications or computation. Many opportunities exist for graduates to work in the areas of digital electronics, microcomputers and mainframe computers.

The work of the electronics graduate may range from assisting in the design and development of new equipment in the laboratory or applying modern microprocessors in the field, to the operation or supervision of production operations, technical writing, customer service and sales.

The program provides the Bachelor of Science degree in Engineering Technology with an electronics major. To meet these diverse needs the program is laboratory-oriented and provides a strong foundation of mathematics and science, specialized course work in electronics technology and related technical areas, and courses in the area of communications and the social studies.

The electronics technology-computer option curriculum provides the preparation for graduates to enter the growing and exciting field of computer hardware and software. The demand for graduates having both computer hardware and software skills is quickly developing as the importance of automation, robotics, and artificial intelligence is recognized. Graduates of this program will be prepared for those opportunities in industry requiring considerable knowledge of both computer hardware and software.

The program provides the Bachelor of Science degree in Engineering Technology with an electronics major. To meet the diverse needs that graduates will have, the program provides a strong foundation of mathematics, science, and specialized courses. Related courses in the humanities and social sciences are included to give the graduate an appreciation of the world in which the graduate will live and work.

Fire Protection and Safety Technology
Professor and Interim Head
Marvin D. Smith, Ph.D., P.E.

The nuclear/electronic/aerospace revolution, in conjunction with increased ecological awareness, has created an economic and moral responsibility to provide a cadre of trained personnel, knowledgeable in current loss-control and risk management techniques. In response to this challenge, the curriculum is designed to familiarize the student with inherent risks in such areas as fire protection, occupational safety and health, radiation hazards, product liability and industrial security. Courses and laboratories are structured to enable the recognition, evaluation and control of existing and potential hazards threatening losses to life, property or proprietary information.

The curriculum emphasizes industrial fire prevention, occupational health and safety, risk assessment, industrial hygiene, and hazardous materials management.

Manufacturing Technology
Associate Professor and Head
Gerald R. McClain, M.S., CMfgT.

The flow of affordable goods and products from producer to consumer is a major cornerstone of the free enterprise system that is enjoyed in the United States. Essential to this system are the manufacturing industries which comprise that segment of our economic society directly responsible for the conversion of raw materials into usable products. Today these industries face numerous and complex challenges, which oftentimes require highly trained individuals willing to meet these challenges to maintain the competitive edge. Manufacturing technology graduates will have the opportunity to work in all phases of construction, as project managers, estimators, material and equipment salespersons, labor management and construction managers.

ELECTRONICS AND COMPUTER TECHNOLOGY
Associate Professor and Head
Thomas G. Bertenshaw, M.S., M.Ed.

The electronics technology curriculum provides preparation for outstanding career opportunities not only in the electronics industry itself but also in many other areas in modern industry which depend upon electronics for control, communications or computation. Many opportunities exist for graduates to work in the areas of digital electronics, microcomputers and mainframe computers.

The work of the electronics graduate may range from assisting in the design and development of new equipment in the laboratory or applying modern microprocessors in the field, to the operation or supervision of production operations, technical writing, customer service and sales.

The program provides the Bachelor of Science degree in Engineering Technology with an electronics major. To meet these diverse needs the program is laboratory-oriented and provides a strong foundation of mathematics and science, specialized course work in electronics technology and related technical areas, and courses in the area of communications and the social studies.

The electronics technology-computer option curriculum provides the preparation for graduates to enter the growing and exciting field of computer hardware and software. The demand for graduates having both computer hardware and software skills is quickly developing as the importance of automation, robotics, and artificial intelligence is recognized. Graduates of this program will be prepared for those opportunities in industry requiring considerable knowledge of both computer hardware and software.

The program provides the Bachelor of Science degree in Engineering Technology with an electronics major. To meet the diverse needs that graduates will have, the program provides a strong foundation of mathematics, science, and specialized courses. Related courses in the humanities and social sciences are included to give the graduate an appreciation of the world in which the graduate will live and work.

Fire Protection and Safety Technology
Professor and Interim Head
Marvin D. Smith, Ph.D., P.E.

The nuclear/electronic/aerospace revolution, in conjunction with increased ecological awareness, has created an economic and moral responsibility to provide a cadre of trained personnel, knowledgeable in current loss-control and risk management techniques. In response to this challenge, the curriculum is designed to familiarize the student with inherent risks in such areas as fire protection, occupational safety and health, radiation hazards, product liability and industrial security. Courses and laboratories are structured to enable the recognition, evaluation and control of existing and potential hazards threatening losses to life, property or proprietary information.

The curriculum emphasizes industrial fire prevention, occupational health and safety, risk assessment, industrial hygiene, and hazardous materials management.

Manufacturing Technology
Associate Professor and Head
Gerald R. McClain, M.S., CMfgT.

The flow of affordable goods and products from producer to consumer is a major cornerstone of the free enterprise system that is enjoyed in the United States. Essential to this system are the manufacturing industries which comprise that segment of our economic society directly responsible for the conversion of raw materials into usable products. Today these industries face numerous and complex challenges, which if met, offer promising careers to men and women who have interests in manufacturing. These career positions include such areas as tool design, cost evaluation and control, plant operations, product design and development, and manufacturing methods. Emerging career fields include robotics, computer-integrated manufacturing and automatic assembly.

The manufacturing technology option provides educational experiences in the core areas of manufacturing processes, industrial materials, graphic communication and technical science, as well as an opportunity to develop an area of specialization. This option is available only for the bachelor's degree. Manufacturing courses are concentrated in the last two years allowing for efficient transfer from other OSU programs or from other colleges or universities.
Mechanical design is an activity necessary for existence of the modern world. All the conveniences of today's world have passed through the designers on their way to being useful products. Mechanical design is applied in robotics, automotive manufacturing, computer-aided drafting and design, computer-aided manufacturing, agricultural machines, petroleum industry, mining, shipbuilding, spacecrafts, electronics manufacturing, food processing, aircraft, metals and plastics production—nearly the entire spectrum of industry. Every industry requires some type of mechanical design, either directly to produce the product or indirectly to produce the tools, equipment and materials used to manufacture the product.

The computer has had an impact on few areas of technology more than mechanical design. The phrase "computer-aided design" or "CAD" means many things from computer drafting or graphics to sophisticated solids modeling and analysis. The mechanical design student is exposed to a range of applications from designing with a computer to manufacturing with a computer. It is the objective of the department that all of its graduates be proficient in using the computer as a problem-solving tool both graphically and analytically.

Transfer students with an associate degree in drafting and design may transfer into the program with ease. The junior and senior years provide additional education in design principles, manufacturing processes, computer graphics, and other related areas necessary for more complex aspects of mechanical design. The mechanical design technologist with in-depth analysis and technical knowledge makes a computer-aided drafting and design work station a design tool rather than just a drafting tool. Bachelor of science graduates usually find employment in areas related to new product design and redesign, or manufacturing equipment design.

MECHANICAL POWER TECHNOLOGY AND PETROLEUM TECHNOLOGY

Professor and Head Marvin D. Smith, Ph.D., P.E.

The mechanical power program in Engineering Technology prepares the graduate for entry into a broad spectrum of the industrial world. It is concerned with the utilization of energy, development and transfer of power, and the measurement and control of fluid and mechanical devices.

This program is designed to introduce the student to the broad spectrum of mechanical devices and skills. It also produces a highly competent technical individual who is capable of immediate employment in diverse industrial, governmental and education institutions. It offers a depth of theoretical knowledge, as well as a breadth in equipment exposure.
COLLEGE OF HOME ECONOMICS

Patricia K. Knaub, Ph.D., Dean
Lynda Harriman, Ph.D., Associate Dean for Home Economics Cooperative Extension
Margaret J. Weber, Ph.D., Associate Dean for Home Economics Research
Elaine Jorgenson, Ed.D., Director of Academic Affairs
Beulah Hirschlein, Ph.D., Director of Home Economics University Extension
Diane Jackman, Ph.D., Director of Student Academic Services and Alumni Programs

Home economics is a dynamic profession, worldwide in scope, which prepares students at the graduate and undergraduate level to pursue professional careers in business, communications, education, extension, international service, public health, research, social welfare, and in a variety of agencies, organizations and institutions. Students interested in law, medicine or dentistry may enroll in programs of pre-law, pre-medicine or pre-dentistry. The graduates of the School of Hotel and Restaurant Administration enter career fields as managers in hotels, diverse food service facilities, recreation and resort complexes, health care centers, businesses and education.

The mission of the College of Home Economics at Oklahoma State University is to design and deliver innovative and technologically superior instruction, research and service through globally oriented, scientifically based, human environmental programs which enhance individual wellness and quality of life in an ethical and socially responsible manner.

Programs in the college provide a unique focus on individuals and their interrelationships within social, physical, psychological, economic, political and aesthetic environments.

The College of Home Economics is composed of three departments and the School of Hotel and Restaurant Administration. The departments are Design, Housing and Merchandising; Family Relations and Child Development; and Food, Nutrition and Institution Administration.

Accreditation

All programs culminating in a B.S. in Home Economics are accredited by the Council for Accreditation, American Home Economics Association. In addition, specialized agencies have approved or accredited specific programs in the College as follows: The Foundation for Interior Design Education Research (FIDER) has accredited the undergraduate interior design program. The American Dietetic Association (ADA) has approved the AP4 Program (Approved Preprofessional Practice Program) and Plan IV dietetics program. The National Council for Accreditation of Teacher Education (NCATE) has accredited the teacher certification programs and the National Academy of Early Childhood Program has accredited the Child Development Laboratory program. The Marriage and Family Therapy Program and the Hotel and Restaurant Administration program are in the process of seeking accreditation.

Honors Program

Honors courses and seminars are available in the College. These courses and seminars are taught in small classes by outstanding faculty. Eligible students may elect to pursue a General Honors program, a College Honors program or a bachelor's degree with honors. A General Honors program requires a completion of 21 honors credit hours with a grade of "A" or "B." A College Honors program requires completion of 12 upper-division honors credit hours with a cumulative GPA of 3.50. Completion of the General Honors and the College Honors programs are required to complete the bachelor's degree with honors.

Academic Advising

The College's Office of Student Academic Services provides advisement for all freshmen enrolling in the College and coordinates the advising in the College. When a student has successfully completed one semester at OSU and has identified a major area of study, the student transfers to the department of his or her choice. The student will be assigned a faculty adviser.

Each student is advised in the planning and scheduling of his or her course work. Advising sessions include discussions on career choice and internship opportunities. Students are encouraged to maintain a close relationship with their adviser throughout their college career and to visit their adviser at times other than enrollment when only brief meetings may be possible.

Scholarships

A number of scholarships are awarded each year to students enrolled in the College. Over $70,000 in scholarship dollars were awarded to students in the College last year. Funds for these scholarships are provided by alumni and friends of the College. The criteria for and the amount of each scholarship varies.

Students make application for College scholarships in January and scholarship awards for the next academic year are made in March. There are numerous university-wide scholarships available and students are encouraged to make application for these awards.

Academic Programs

Undergraduate Programs. The curricula for the B.S. in Home Economics and the B.S. in Hotel and Restaurant Administration include courses which contribute to a liberal education, common requirements in home economics or hotel and restaurant administration and professional requirements. The courses which contribute to a liberal education are specified by the University and include courses in the natural and social sciences, the humanities and the arts. Courses in home economics are included for the professional preparation and are consistent with the expectations of the professional goals of the student.

A minor may be pursued in each of the departments within the College, and in the School of Hotel and Restaurant Administration.

Additional details about specific requirements in any of the departments or in the School may be obtained by contacting the specific department or the School.

Graduate Programs. The Master of Science and Doctor of Philosophy degrees are available through all departments.

The Master of Science degree is offered in each of the departments: design, housing and merchandising; family relations and child development; food, nutrition and institution administration.

Students seeking admission to a master's degree program in any of the departments must have completed 30 semester credit hours in home economics or closely-related subject matter. A student with background deficiencies must compensate for such deficiencies before completing the master's degree. Evidence of academic ability (approximately a 3.00 GPA) in undergraduate work is required. The plan of study for a master's degree student is individually planned to develop academic excellence specific to the student's career goals. The master's degree requires a minimum of 30 semester credit hours including a six-hour thesis or 32 semester credit hours including a report or creative component. The selection and organization of courses are made in consultation with the adviser and the student's advisory committee. At least 21 semester credit hours must be completed in courses numbered 5000 or above.

The Doctor of Philosophy degree is an interdisciplinary degree program available through any of the departments in the College of Home Economics. Individualized programs lead to an area of specialization in any one of the departments. Admission to the program is based upon evidence that the applicant meets general requirements of the Graduate College, has demonstrated superior achievement, and can successfully complete a doctoral program, as evidenced by a requested portfolio which may include letters of recommendation, student grades, samples of writing and critiques of research. The Department of Family Relations and Child Development requires the
Graduate Record Examination (GRE) and the Department of Food, Nutrition and Institution Administration recommends taking the GRE. Applications are reviewed by a graduate faculty committee in each department. This program offers an interdisciplinary combination of courses and research experiences.

A minimum of 60 semester credit hours beyond the master’s degree is required for Ph.D. degree.

The Ph.D. degree prepares individuals to be competent researchers and educators for research positions in universities, business and industry, for university teaching and for administrative or management level positions.

The Doctor of Philosophy degree in environmental science is an interdisciplinary degree program available through any of the departments in the College of Home Economics in cooperation with the environmental science program through the Graduate College.

The Doctor of Philosophy degree in food science is an interdisciplinary program available through the Department of Food, Nutrition and Institution Administration in cooperation with other University graduate programs.

Departmental Clubs and Honor Societies

Club Managers Association of America
College of Home Economics Alumni Association
Dean’s Speakers Bureau
Design, Housing and Merchandising Club
Family Relations and Child Development Club
Food, Nutrition and Institution Administration Club
Graduate Student Home Economics Association
Home Economics Education and Community Service Club
Home Economics Freshman Council
Home Economics Student Council
Hotel and Restaurant Society Club
Oklahoma Council on Consumer Interest Club
Omicron Nu (scholarship and leadership honor society)
Phi Upsilon Omicron (scholarship and leadership honor society)
Student American Society of Interior Design Club
Student Home Economics Association

Graduate Programs

The Department of Design, Housing and Merchandising offers graduate work leading to the Master of Science and Doctor of Philosophy in home economics degrees. Graduate study and research may focus on merchandising or on functional and environmental design and behavior. Specialization at the master’s and doctoral levels focuses on research experience directed toward the student’s career objectives. Graduate degrees in the department are tailored around departmental areas of expertise, professional goals of the candidate and College of Home Economics and Graduate College requirements.

The Master of Science Degree. The Master of Science degree is designed to prepare individuals for careers in post-secondary and college teaching, extension, business and industry. Major emphases at this level include functional and environmental design and behavior, and merchandising. The program is built around the academic background, experience, needs, special interests and professional goals of the student. The selection of courses is made in consultation with the head of the department and a departmental graduate committee. A minimum of 16 to 18 credit hours is required in the area study. Supporting courses may be selected from other areas of home economics or from supporting areas such as marketing, sociology, communications and architecture.

The Doctor of Philosophy Degree. The Ph.D. prepares individuals for research positions in universities, business and industry, for university teaching and for administrative or management level positions. The student will be expected to have a master’s degree or equivalent in design, housing and merchandising or in a closely-related area from a college or university of recognized standing. A student may be required to demonstrate competence in the area of specialization and in related areas, and further course work may be required before admission will be granted.

The plan of study is individually determined for the student in cooperation with an advisory committee. Each plan of study will be an integrated combination of courses and research providing for specialization within an area of design, housing and merchandising, including synthesis of knowledge drawn from departments within and outside of home economics.

Emphasis is on attainment of competence rather than on the completion of specific numbers of credits or of course work and research. Each student will develop competence in the area of specialization, in research, in dealing effectively with the reciprocal relations between families and one or more aspects of their environments, and in exerting leadership in one or more professional roles. The program includes a strong emphasis on research and application of statistical procedures.

More detailed information on graduate study in the Department of Design, Housing and Merchandising can be obtained by writing the head of the department.

Family Relations and Child Development

Professor and Head Rex E. Culp, Ph.D., J.D.

Courses in family relations and child development assist men and women in developing attitudes and skills which are fundamental to satisfying relationships in the home and community, in preparing for people-oriented and service-oriented professions, and in preparing teachers.

The Department has three major goals:

1. to offer professional preparation for graduate and undergraduate students in fields related to human development, early childhood education, sciences, gerontology, family economics, and home economics education;
2. to improve the opportunities for all university students to enjoy wholesome and satisfying personal and family lives through an improved understanding of concepts of human development and relationships;

3. to contribute to available knowledge of human and family development through basic and applied research with the family viewed as the basic human relationship.

The Department offers undergraduate students four certification options and seven noncertification options, all of which stress integration of theory and research with practice.

The Early childhood education--certification provides professional preparation of individuals to teach in public school programs for pre-kindergarten through third grade. The program provides a combination of theory, research, and experiential learning that trains students to design developmentally appropriate curriculum for young children. The emphasis on developmentally appropriate early childhood education represents the philosophy of the department and the program meets or exceeds state requirements for certification. The National Council for Accreditation of Teacher Education (NCATE) and the Oklahoma State Department of Education have accredited the B.S. program leading to prekindergarten through third grade teacher certification.

The Home economics education vocational and extension-certification option, home economics education occupational and extension-certification option, and home economics education general and extension-certification option (all under consideration) prepare men and women for professional positions in community services, secondary and adult education, home economics communications, cooperative extension, and business. Programs meet the approval of the State Board of Education, state and federal offices of economics communications, cooperative extension, state supervision, cooperative extension, community services, and administrative roles in home economics.

The B.S. degree requires a minimum of 124 semester credit hours. A minor is also available in the Department; information on requirements may be obtained from the department head.

Graduate Programs

The Department of Family Relations and Child Development offers work leading to the Master of Science degree and the Doctor of Philosophy. Both the Master of Science degree and the Doctor of Philosophy degree programs are tailored to the candidate’s professional goals, expertise of faculty members, and College of Home Economics and Graduate College requirements. The Master of Science Degree. Admission to the graduate program is selective and based on a variety of criteria including grade-point average, Graduate Record Examination (GRE) scores, letters of recommendation, and student goals. Students need not have majored in family relations and child development as undergraduates but must have 12 upper-division semester credit hours in home economics, human development, family studies or closely-related areas. Students not meeting these criteria will be required to complete prerequisite undergraduate courses in order to be fully admitted.

A minimum of 18 credit hours from the areas of family studies, child development, and early childhood education is required. Supporting courses may be taken in any of the departments of the College of Home Economics or in psychology, sociology, education or other related areas with permission of the student’s advisory committee. Seven career paths are available.

The early childhood education plan provides professional career development for teachers and administrators of public and private schools and day care centers. The program offers specialization in early childhood education program supervision and administration. Course work includes a core theoretical base and research experiences that can lead to partial fulfillment of requirements for state certification. Students selecting early childhood education as their area of emphasis may work toward licensure/certification in early childhood education in addition to their master’s program. Students obtaining a Standard Elementary Certificate may, with several additional credit hours in early childhood education, meet requirements for a Standard Certificate in early childhood education. Students who hold standard certification in early childhood education may work toward certification in related areas, e.g., elementary education or special education.

The home economics education and community services plan may be planned with an emphasis in community services, cooperative extension, or teacher education. This advanced professional education is for men and women preparing for positions in teacher education, state supervision, cooperative extension, community services, educational consulting, and leadership and administrative roles in home economics.

The child development plan develops competencies related to understanding children and their behavior in a variety of environments. Career settings include colleges and universities, child guidance centers, extension programs and hospitals. The program balances academic knowledge from current research and theory in child development with experiences in working with children in laboratory and classroom environments.

The family relations plan provides students with research and theoretical foundations in addition to the practical skills necessary to work in a variety of family-oriented careers. This program prepares professionals for positions in social and community agencies. The program is a broad-based exposure to the relationships between families and work, school, community and other human environments.

The gerontology plan is an interdisciplinary specialty that combines family relations and human development within the Department of Family Relations and Child Development with course work available from several other departments at Oklahoma State University. The objectives of this specialty are to train students in research, education and program development with older adults. Theoretical and research efforts on the aging process combined with exposure to the delivery of services provide a balanced degree plan for both practitioners and researchers.

The marriage and family therapy plan provides students with basic knowledge, skills and a professional identity essential for entry-level practice of marital and family therapy. This plan has restrictive admission guidelines and a curriculum designed to meet the rigorous national guidelines set by the American Association for Marriage and Family Therapy (AAMFT). The curriculum includes course work in individual development, marital and family systems, marital and family therapy, professionalism and ethics, research and statistics and supervised practicum. Graduates practice in controlled settings and under supervision until they acquire the experience needed for national certification.

The family economics plan focuses on the study of the household as an economic unit. The curriculum includes household decision-making regarding allocation among human capital development, employment decisions, household production and leisure time. Personal financial management involves budget allocations, investment decisions, risk management, retirement income planning, and estate planning. The role of government is examined as it interacts in the market to provide consumer protection, promotes employment, generates revenue through taxation, and improves economic well-being of individuals and families through social programs. This program prepares students for positions in higher education, Cooperative Extension, business, government and family agencies.
The Doctor of Philosophy Degree. The Doctor of Philosophy degree is awarded in home economics with specialization in family relations and child development. The program offers an interdisciplinary combination of courses and research experiences. Courses from other departments in the College of Home Economics and other colleges at Oklahoma State University are selected to provide a flexible yet rigorous program.

The interdisciplinary Ph.D. program trains competent researchers and educators who will make contributions to the scientific literature in human and family sciences. Students establish competencies in: (1) an area of specialization within human development, family relations, gerontology, home economics education or consumer studies; (2) research design and implementation including computer analysis and theory development; (3) interdisciplinary work to synthesize knowledge from a variety of academic specialties; and (4) personal leadership within a specific area of specialization.

The student will be expected to have a master's degree or equivalent in family relations, human development, home economics education, or in a closely-related area. The degree must be from a college or university of recognized standing. A student may be required to demonstrate competence in major or related subject matter areas. Examinations or further course work may be required for admission to the program. Admission is based on Graduate Record Examination (GRE) scores, and a portfolio described under Doctor of Philosophy in home economics.

All degree programs follow an approved plan of study which must be submitted at the designated time. The plan of study is individually planned by the student in cooperation with an advisory committee. Each plan of study will be an integrated combination of courses and research providing for a specialization within the area of family sciences, human development, home economics education or consumer studies and synthesis of knowledge from related areas within and outside home economics. Emphasis is on the attainment of competencies with no more than 20 semester credit hours for a research thesis.

More information on graduate study in the Department of Family Relations and Child Development may be obtained by writing the head of the department.

Food, Nutrition and Institution Administration

Professor and Head E. C. Nelson, Ph.D.

The Department of Food, Nutrition and Institution Administration prepares graduates for positions in nutrition and dietetics. This is a diverse and dynamic profession which integrates human nutrition, food service administration, food science, chemistry, physics, psychology, management and interpersonal skills.

Two degree options and a minor are offered through the Department.

The dietetics option meets the Plan N/V academic requirements and is approved by the American Dietetic Association. With appropriate electives, minors may be obtained in restaurant administration, business administration or wellness. The human nutrition option is ideal for students desiring greater depth in the physiological and biochemical sciences in preparation for medical and other professional schools, graduate study and research in human nutrition. The B.S. degree requires a minimum of 128 semester credit hours.

When students successfully complete the academic requirements (Plan N/V) and experience component (dietetic internship or preprofessional practice program (AP4), they are eligible to write the Registration Examination for Dietitians which is administered in April and October each year. The individual who is successful on the examination is a registered dietitian and entitled to use the initials "RD." to signify professional competence. Many states including Oklahoma also require a mandatory license to practice dietetics in the state.

Nutrition professionals work in a wide range of settings, in both the public and private sector and assume an array of challenging responsibilities. Career opportunities for a registered/licensed dietitian include: health care dietitian and administrator, nutrition or food science researcher, fitness/wellness consultant, food service design consultant, dietary products or equipment representative, public health nutritionist, entrepreneur in dietetic programs and services, and corporate dietitian/nutritionist.

Some of the specialized careers and college teaching require additional course work or advanced degrees.

The Approved Professional Practice Program (AP4) at Oklahoma State University meets the American Dietetic Association's supervised practice requirements for registration eligibility. Its mission is to provide students with the knowledge and skills necessary to practice as an entry-level dietitian after the completion of the B.S. degree which meets Plan N/V academic requirements.

All students admitted to the AP4 must be enrolled concurrently in the graduate program of the Department of Food, Nutrition and Institution Administration. Students successfully completing the program may, if desired, continue to work toward a master's degree with emphasis in human nutrition, food service management, nutrition education, or food science.

Graduate Programs

The Master of Science Degree. The master's degree requires a minimum of 30 semester credit hours with six semester credit hours for research and thesis. Each student prepares a thesis which is defended in a final oral examination.

The plan of study is individually planned with an adviser who is designated after entry into the program. An advisory committee gives final approval of the plan.

The Doctor of Philosophy Degree. The Ph.D. degree is an interdisciplinary degree program. To be admitted, applicants will be expected to provide evidence of academic ability and preparation, and will be reviewed by a departmental graduate faculty committee. An emphasis in human nutrition or in food systems administration and management or in food science is available depending on the student's interests and qualifications. To acquire the competencies required, the candidate will need to study in the areas of research, nutrition, food service management, education and selected areas within the College of Home Economics and in other departments outside the College.

More detailed information on graduate study in the Department of Food, Nutrition and Institution Administration can be obtained by writing the head of the department.

School of Hotel and Restaurant Administration

Teaching Associate and Interim Director Jim L. Anderson, M.S.

The OSU School of Hotel and Restaurant Administration responds to the needs identified by the hospitality industry by educating motivated, management personnel who will grow with the industry. The school has a reputation for providing qualified and skillful innkeepers, food and beverage service managers and nutrition and management systems researchers. A new educational facility of more than 22,500 square feet houses laboratories, classrooms, exhibit areas and faculty offices. Specific accommodations include: quality food preparation areas with state-of-the-art commercial equipment and diverse methods of meal preparation; dining room management and table service laboratory; two fast-food service laboratories, to prepare graduates for multi-unit fast-food operations; laboratory for computer management information systems; basic food preparation laboratory for display evaluation, instruction and research equipment; facilities design laboratory; classroom and demonstration area; front office procedures laboratory; and resource center.

Career opportunities range from a wide range of specializations in tourism, sales, personnel administration, labor relations, public relations and promotion, auditing, front office and general management positions. Positions as regional managers or directors for hotel, motel, restaurant, industrial, and fast food management chains are additional possibilities. Airline catering, food processing, convenience food processing, vending and individual restaurant entrepreneurship are excellent career areas.

To meet the needs of the industry and to provide sound academic training at the undergraduate level, the curriculum emphasizes professional and general education. The professional area includes courses in accounting,
law, finance, communications, insurance, marketing and personnel management. Courses in food preparation, food and beverage purchasing and control, layout and design, interior design, sales and promotion, front office management, tourism, and advanced hotel and restaurant management are also included in the specialized area. General requirements are met through courses in English and the natural and social sciences, humanities, political science, history and government, mathematics and computer application. The B.S. degree in Hotel and Restaurant Administration may be earned by completing a minimum of 124 semester hours and maintaining a 2.50 grade-point average in the major area.

Special facilities for learning experiences include the Union Club and the catering and engineering areas of the Student Union, dining and food facility areas in the residence halls, and hotels across the state, and country clubs.

A well-balanced academic high school program is recommended for students interested in hotel or restaurant management as a career. Mathematics, accounting, typing, English and speech are excellent background courses.
As health care grows more complicated, primary care physicians will be needed more than ever. The College of Osteopathic Medicine is helping to fulfill a critical need by training physicians who are able to treat every member of the family and can simplify the health care process by applying his or her knowledge to treat the whole person.

Many graduates of COM-OSU practice in the primary care fields—general medicine, pediatrics, internal medicine, emergency medicine, surgery, and obstetrics-gynecology. Others continue their training in specialties and subspecialties—anesthesiology, neurology, psychiatry, radiology, dermatology, and oncology, to name a few.

The College was founded in 1972 in response to a physician shortage in the state. The College opened its doors in 1974 and graduated its first class in 1977. In 1988, the College was merged with Oklahoma State University and continues to prepare students to be primary care physicians with emphasis in rural medicine. Although still addressing the needs of Oklahoma, the College has broadened its service region to include the states surrounding Oklahoma and those states with no medical school.

The main campus is located on 16 acres along the west bank of the Arkansas River and includes a three-building complex. On the south campus, a half mile away, is a new office building and the College Clinic. This clinical teaching facility, opened in 1981, sees approximately 1,800 patients a month, and is both a teaching clinic for medical students and a health care resource for residents of the west Tulsa area. The Clinic provides comprehensive health care and is staffed by licensed osteopathic physicians who supervise students in the care of patients.

The annual application deadline is November 1.

**College Curriculum**

Divided into Basic Sciences and General Medicine, the curriculum at the College emphasizes general practice. The four-year program uses a coordinated, spiraling systems approach in which subject matter is continuously re-introduced in greater depth and complexity.

At the time of entry, the applicant must have completed:
1. At least three years (90 hours) and not less than 75 percent of the courses required for the baccalaureate degree at a regionally-accredited college or university;
2. A full academic year sequence (generally eight to ten hours) with no grade below a "C" (2.00 on 4.00 scale) in each of the following subjects: English, biology, general chemistry, organic chemistry, and physics; (laboratories must be taken with the required science courses);
3. Applicants must have taken at least one of the following undergraduate courses: biochemistry, comparative anatomy or cellular biology, embryology, microbiology or molecular biology, histology. Applicants must take the Medical College Admissions Test (MCAT). They are encouraged to take the examination in the spring prior to applying.

All applicants from Oklahoma and the College’s service area (states surrounding Oklahoma and states with no medical school) who have fulfilled these requirements will be invited to an on-campus interview. Select applicants from outside the region will be invited to an interview as well. Applicants must participate in the interview to qualify for further consideration. Interview results and other data submitted will be considered when determining which applicants have demonstrated appropriate levels of scholarship, aptitude, and motivation for admission to the program. Class size is limited to 88 students.

The first year of study concentrates on the basic sciences and preliminary clinical concepts. Preparation of the student for early patient contact requires selective background in anatomy, physiology, behavioral science, techniques of physical examination, diagnosis and patient interview, and recognition of normal and abnormal patterns of physical conditions and disease. The next three semesters emphasize the interdisciplinary study of the structure and function of body systems. In addition, students are introduced to specialized clinical care and medical procedures related to each body system.

The final 18 months of the program are devoted exclusively to clinical rotations, where students work with patients under physician-faculty supervision. The student rotates through basic hospital services, including general medicine, surgery, obstetrics/gynecology, pediatrics, internal medicine, and emergency room, and spends a few weeks at a small rural hospital, major urban hospital, primary care clinic, psychiatric facility, community health facility, office of a private physician, and one elective location.

Students graduate from the four-year program with the Doctor of Osteopathy (D.O.) degree. Following graduation, students are required by state licensing boards to complete at least one a year rotating internship approved by the American Osteopathic Association. Those who wish to specialize enter a residency program following the internship. Graduates are eligible to be licensed to practice as soon as they complete the internship.

Detailed information on the College of Osteopathic Medicine can be found in the College’s academic catalog, available from the College:

**College of Osteopathic Medicine of Oklahoma State University**

1111 West 17th Street, Tulsa, Oklahoma 74107-1898
(918) 582-1972 Toll-free in Oklahoma, 1-800-256-1972
Affiliated Institutions

Students gain clinical training beginning in their second year at COM-OSU, working under physician supervision in small community hospitals, with private practitioners, in major hospitals, at the College Clinic, and in Indian Health Service hospitals. To demonstrate the diversity of clinical experience students receive, listed below are some of the College's affiliated institutions:

- Tulsa Regional Medical Center, 533 beds
- Dallas-Fort Worth Medical Center, 377 beds
- Charles Still Hospital (Jefferson City, MO), 169 beds
- Coffeyville Regional Medical Center, 150 beds
- Hillcrest Health Center (Oklahoma City, OK), 148 beds
- Enid Regional Hospital, 101 beds
- Riverside Hospital (Wichita, KS), 125 beds
- Pauls Valley General Hospital, 70 beds
- Tahlequah City Hospital, 91 beds

Physician Placement

The College maintains close contact with its graduates and can offer assistance in setting up a practice following the graduate’s internship and residency training. The physician placement officer helps to assess the physician need in a community, estimates costs of establishing and operating a practice, and matches physicians to communities where both the community and the physician will benefit.

Selection Factors

The College considers applications for admission from all qualified candidates without regard to age, sex, creed, race, or national origin. Strong preference is given to Oklahoma residents and residents from states surrounding Oklahoma and states with no medical school. Those who have experienced unequal educational opportunities for social, cultural or racial reasons are particularly urged to apply. Applicants must be U.S. citizens or have obtained permanent resident status to be considered.

Accreditation

The College is accredited by the Oklahoma State Regents for Higher Education and the Bureau of Professional Education of the American Osteopathic Association, the recognized accrediting agency for institutions that educate osteopathic physicians.

Financial Aid

The college employs a full-time financial aid officer who works to ensure that students are not prevented from attending the College because of finances. The primary purpose of the College’s aid program is to provide financial assistance to students who would otherwise be unable to afford tuition.

Although the principal responsibility for financing an education remains with the student and his or her family, the College will work to offer campus-based aid to supplement that contribution.

Because the number of applicants and their total requests each year exceed the resources available, a selection process is necessary to see that the most deserving and best qualified students have first claim on available resources. Financial aid options include loans, scholarships, and grants, as well as work/study programs and return service agreements.

A Family Financial Statement and other required applications are available at the College.

Honor and Service Organizations

- American College of General Practitioners-Undergraduate Chapter
- Atlas Fraternity (social)
- Christian Medical Society
- Delta Omega (national osteopathic sorority)
- Geriatric Medicine Club
- Inter-Club Council
- Osteopathic Sports Medicine Society
- Pinnacle Yearbook
- Sigma Sigma Phi (honor society)
- Society for the Advancement of Osteopathic Medicine
- Student Associate Auxiliary
- Student National Medical Association
- Student Osteopathic Medical Association
- Undergraduate American Academy of Osteopathy
The primary objective of the College of Veterinary Medicine is to educate veterinarians for private practice. However, the professional curriculum provides an excellent basic medical education in addition to training in diagnosis, disease prevention, medical treatment, and surgery. Graduates are qualified to pursue careers in many facets of veterinary medicine and health-related professions.

Accreditation

The College has full academic accreditation status approved by the Council on Education of the American Veterinary Medical Association. Accreditation is based on an assessment of ten essential factors, namely, the college's organization, its finances, physical facilities and equipment, clinical resources, library and learning resources, enrollment, admissions, faculty, curriculum, and continuing and post-graduate education.

Preparatory Requirements

Attainment of the degree of Doctor of Veterinary Medicine requires a minimum, six academic years of collegiate training. In preparation for the professional training the student must complete both prescribed and elective collegiate courses. The minimum prescribed preparatory studies, totaling 60 semester hours of course work, can be completed in two calendar years. Most of the entering veterinary medical students in recent years have had three years of preparatory training or a bachelor's degree. It is recommended that the student undertake an appropriate regular bachelor's degree program in the sciences, in the course of which he or she will complete the prerequisites for entry into the College of Veterinary Medicine by the end of at least the third year of preparatory training.

Admission Requirements

Collegiate course requirements for entry into veterinary medical college may be completed at any accredited university or college. Special pre-veterinary curricula are available at Oklahoma State University through the College of Agriculture and the College of Arts and Sciences. Both colleges offer programs of study in pre-veterinary medical sciences which provide for the award of a bachelor's degree after the first or second year of veterinary medical studies to those persons who gain early entry into a veterinary medical college.

Requests for information on pre-veterinary medical study programs and applications for admission to such programs should be addressed to the dean of either the College of Agriculture or the College of Arts and Sciences.

Listed below are the minimum course prerequisites for consideration for admission to the College of Veterinary Medicine.

- English composition and technical/professional report writing-eight semester credit hours.
- Mathematics-three semester credit hours. Mathematics courses must include the fundamental operations of algebra, exponents and radicals, simple equations, graphs, simultaneous equations, quadratic equations and logarithms.
- Biological science-15 semester credit hours. Courses in zoology, botany, microbiology and genetics are required. These courses must include laboratory work. Comprehensive courses in biology will be considered but must be evaluated before credit is accepted.
- Chemistry-17 semester credit hours including five semester credit hours of organic chemistry designed for pre-veterinary, premedical and pre-dental students which must include both the aliphatic and aromatic series of organic compounds. Additionally four semester credit hours of biochemistry (three hours lecture and one hour laboratory) are required.
- Physics-eight semester credit hours. Physics courses must include laboratory work and the following topics: mechanics, heat, sound, electricity, magnetism, light and modern physics.

Scholarships

The College has several scholarships which are available to veterinary medicine students, based on academic achievement and financial need. Special scholarships and awards are available for black students enrolled in veterinary medicine or in the pre-veterinary medicine program.

Veterinary Medical Studies

Enrollment in veterinary medicine is restricted. Applications for admission must be submitted by December 15, and a new class enters the College each year at the beginning of the fall semester.

Applicants who are legal residents of Oklahoma will be given first priority. However, up to ten percent of the first-year students may be selected from a pool of nonresident applicants. Questions about residency should be directed to the Office of Admissions, Oklahoma State University. Requests for application materials should be directed to the coordinator, Veterinary Medicine Admissions, College of Veterinary Medicine.

Students are admitted as candidates for the Doctor of Veterinary Medicine degree on the basis of records of academic performance in preparatory studies, standard achievement tests, and personal interviews and references to determine personal characteristics and career motivation.

The veterinary curriculum extends over four calendar years. The first two academic years conform to the normal semester system of the University. The last two academic years are continuous, the fourth starting shortly after the third, and organized into two-week periods, with sectioning of the classes to provide for lower faculty-student ratio and for more efficient utilization of clinical facilities.

Departmental Clubs and Honor Societies

American Veterinary Medical Association, Student Chapter
Society of Phi Zeta Nu Chapter (academics and research)

Physiological Science

Regents Professor and Head
Charlotte L Ownby, Ph.D.

Graduate Programs

The Department of Physiological Science offers programs of study leading to the degrees of Master of Science and Doctor of Philosophy in physiological science. The programs are designed to prepare students for teaching and research positions in universities or colleges; research positions in governmental laboratories, foundations or industry and related positions. Areas of concentration offered are anatomy, pharmacology, physiology and toxicology.

Application Procedure. Applications are accepted at any time; however, to be considered for assistantships, applications for enrollment in the summer session or fall semester should be received by February 15, and applications for enrollment in the spring semester should be received by September 15.
Review and formal acceptance or rejection of applications for admission to the graduate program in physiological science is delegated to the departmental Graduate Education Committee. For admission to the graduate program, the candidate must possess a bachelor's degree or higher in a science-related field with course work in mathematics, chemistry and physics.

Criteria for recommending admission are:

1. For candidates whose highest earned degree is the baccalaureate, the sum of verbal and quantitative scores on the Graduate Record Examination will be multiplied by the grade-point average on a four point scale, for the last 60 hours of undergraduate course work. The product score must be 3000 or greater for M.S. degree candidates or 3150 or greater for Ph.D. degree candidates for admission without qualification. Students who fail to meet these criteria may be considered for admission on a provisional basis.

2. For candidates with advanced degrees, medical degrees or degrees earned outside the United States, admission status will be evaluated on an individual basis.

Applicants are encouraged to select a major professor prior to admission to the departmental program. When this is not possible, two temporary advisers will be assigned by the Graduate Education Committee. A permanent adviser should be chosen as soon as possible. When the student's graduate adviser is determined, the department head, in consultation with the adviser and the Graduate Education Committee, will appoint a graduate advisory committee. Two of the committee members must be members of the graduate faculty of the Department of Physiological Science. This committee will consist of not fewer than three graduate faculty members for students pursuing the master's degree. For students pursuing the doctoral degree, a graduate advisory committee of not less than four graduate faculty members, one of whom must be from outside the departmental graduate faculty, will be appointed by the dean of the Graduate College upon recommendation of the Graduate Education Committee. Functions of the advisory committee are described in the "Graduate College" section.

The Master of Science Degree. This degree may be earned in one of two ways: (1) completion of a total of 30 semester credit hours including six credit hours related to a thesis; the thesis must be formally submitted to the Graduate College for partial fulfillment of the requirements for the degree; (2) completion of a total of 32 semester credit hours including two credit hours in research and thesis. A report must be submitted to the Graduate College in partial fulfillment of the requirements for the degree. The student must present the thesis or report in a seminar to the Department and pass a final oral examination at that time. The courses forming the student's program are determined by the student's graduate advisory committee in conference with the student.

The Doctor of Philosophy Degree. Students may enter the doctoral program without first acquiring a master's degree. The course requirement for the Ph.D. is 90 semester credit hours including a minimum of 30 credits for research and dissertation. The courses required are determined by the graduate advisory committee in conference with the student. The 90 semester credit hours may include all or a part of the work completed for a master's degree. The student must pass written and oral qualifying examinations. A doctoral dissertation based on original research must be accepted by the graduate advisory committee and submitted to the Graduate College. The student must present the dissertation in a seminar to the Department and pass a final oral examination at that time.

Minor in Physiological Science. A graduate student working toward a Ph.D. who wishes to declare a minor in physiological science is expected to have a member of the Department on his or her graduate advisory committee, must meet the Graduate College requirements for a minor, and have a minimum of 14 credit hours in physiological science, including six credit hours of mammalian physiology (4000 level or higher).
of biochemistry acceptable for graduate credit, and a course in statistical methods. The student must also pass a final oral examination covering the thesis or report and related course work.

The Doctor of Philosophy Degree.
The Ph.D. requires a total of 90 credit hours beyond the B.S. degree. All Ph.D. students must enroll in "Current Topics in Veterinary and Biomedical Science" (VPARA 5111) for one hour of graduate credit and in "Seminar" (VPARA 6110) for two hours of graduate credit and, if not already complete, must fulfill the requirements for biochemistry and statistical methods detailed above under "Master of Science Degree."

A written and oral qualifying examination is required. Students must prepare a research proposal and complete a dissertation based on original research. The final examination is oral and is based primarily on the dissertation problem, although not limited to this subject.

Veterinary Pathology

Professor and Head Anthony W. Confer, D.V.M., Ph.D.

Graduate and Residency Programs

The Department of Veterinary Pathology offers graduate programs with options of basic research in pathobiology or veterinary pathology. Pathobiology is available to persons with a minimum of a bachelor's degree in a science-related field and is designed to prepare individuals for careers in teaching and research. The research program in the Department of Veterinary Pathology is focused on elucidation of mechanisms of disease, utilizing the disciplines of microbiology, immunology, toxicology, histology, immunocytochemistry, electron microscopy and molecular biology. Persons who undertake an area in veterinary pathology must have a professional degree in veterinary medicine. It is designed to prepare individuals for careers in teaching, research and service pathology as required to fulfill the requirements of academics, animal diagnostic facilities, and industries.

The Master of Science Degree. The M.S. may be earned by 30 credit hours beyond a bachelor's degree including not more than six credit hours for the thesis. The plan of study will be designed to meet the student's needs and interests. Requirements include one credit of seminar, one course in biochemistry and one course in statistics. The student must also pass a final oral examination covering the thesis and related course work.

The Doctor of Philosophy Degree.
The Ph.D. degree requires a total of 90 credits beyond the bachelor's degree. The plan of study will be designed to meet the student's needs and interests. Requirements include courses in biochemistry, biochemistry techniques, statistics and two credits of seminar. A written and oral qualifying examination is required. Students must prepare a research proposal and complete a dissertation based on original research. The final examination is oral and is based primarily on the dissertation problem.

Application Procedure. Applications are accepted at any time. Applicants should submit college transcripts and
FACULTY

College of Agricultural Sciences and Natural Resources

AGRICULTURAL COMMUNICATIONS
Associate Professor and Head
Kevin G. Hayes, Ph.D.
(See “Journalism and Broadcasting” in the “College of Arts and Sciences” for staff.)

AGRICULTURAL ECONOMICS
Professor and Head
James E. Osborn, Ph.D.

Regents Professor and Pat and Jean Neustadt Distinguished Professor
Harry P. Mapp, Ph.D.

Regents Professor
Gerald A. Doeksen, Ph.D.

Professors

Associate Professors

Assistant Professors
Brian Adam, Ph.D.; Michael R Dicks, Ph.D.; Shida R Henneberry, Ph.D.; Phil Kinkel, Ph.D.; Stephen R Koontz, Ph.D.; Patricia Norris, Ph.D.; Derrell S. Peel, Ph.D.; David A. Pyles, Ph.D.

Agricultural Resources
Instructor
Charles Cox, M.S.

Assistant Professors

Instructors
Charles Cox, M.S.; Michael Klump, M.S.

Agricultural Engineering
Professor and Head
David R Thompson, Ph.D.

Regents Professor and Sarkeys Distinguished Professor
C.T. Haan, Ph.D., P.E.

Professors

Associate Professors
Sam L. Harp, M.S., P.E.; Michael B. Smolen, Ph.D.; John B. Soltie, Ph.D., P.E.; Marvin S. Stone, Ph.D.; Darrel E. Temple, M.S. (adjunct); Bruce Wilson, Ph.D.

Assistant Professors
Glenn O. Brown, Ph.D.; Thomas A. Esch, Ph.D.; Harry L. Field, Ed.D.; Gregory Hanson, Ph.D. (adjunct); Michael A. Kizer, Ph.D.; Terry Robinson, M.S. (adjunct); Daniel E. Storm, Ph.D.

Agriculture (General)
Associate Professor and Assistant Dean
C. Wesley Holley, Ed.D.

Agronomy
Professor and Head
Robert L. Westerman, Ph.D.

Regents Service Professor
Paul W. Santelmann, Ph.D.

Regents Professor
Edward L. Smith, Ph.D.

Professors

Associate Professors
Brian J. Carter, Ph.D.; Brett F. Carver, Ph.D.; Robert L. Gillen, Ph.D.; Darold L. Ketring, Ph.D.; Eugene G. Krenzer, Ph.D.; Bjorn C. Martin, Ph.D.; J. Ron Sholar, Ph.D.

Assistant Professors
Earl R Allen, Ph.D.; Michael P. Anderson, Ph.D.; Terrence G. Bidwell, Ph.D.; Arron C. Guenzi, Ph.D.

Animal Science
Regents Professor and Head
Donald G. Wagner, Ph.D.

Professor and President
John R Campbell, Ph.D.

Professor, Dean and Director, Division of Agriculture
Charles B. Browning, Ph.D.

Regents Professors
Don R Gill, Ph.D.; Stanley E. Gilliland, Ph.D.; William G. Luce, Ph.D.; Fredric N. Owens, Ph.D.; Robert P. Wettman, Ph.D.

Professors

Associate Professors
W. Stephen Damron, Ph.D.; H. Glen Dolezal, Ph.D.; David W. Freeman, Ph.D.; Rodney D. Geisert, Ph.D.; Charles A. Hibberd, Ph.D.; Foris T. McCollum, III, Ph.D.; Glenn E. Selk, Ph.D.; Donald R Tophoff, Ph.D.

Professor and Assistant Professor
W. Stephen Damron, Ph.D.; H. Glen Dolezal, Ph.D.; David W. Freeman, Ph.D.; Rodney D. Geisert, Ph.D.; Charles A. Hibberd, Ph.D.; Foris T. McCollum, III, Ph.D.; Glenn E. Selk, Ph.D.; Donald R Tophoff, Ph.D.

Assistant Professors
Jarold E. Callahan, M.S.; Archie C. Edelson, Ph.D.; W. Scott Fargo, Ph.D.; Jonathon V. Edelson, Ph.D.; W. Scott Fargo, Ph.D.

Associate Professors
Robert W. Barker, Ph.D.; Gerrit W. Cuperus, Ph.D.; Jonathon V. Edelson, Ph.D.; W. Scott Fargo, Ph.D.

Assistant Professors
Robert W. Barker, Ph.D.; Gerrit W. Cuperus, Ph.D.; Jonathon V. Edelson, Ph.D.; W. Scott Fargo, Ph.D.

Professor and Endowed Chair
Stephen K. Wilke, Ph.D.

Professors
Richard C. Berberet, Ph.D.; Robert L. Burton, Ph.D.; Stanley Coppock, Ph.D.; J. Alexander Hair, Ph.D.; S. Dean Kindler, Ph.D.; Donald C. Peters, Ph.D.; Kenneth N. Pinkston, Ph.D.; David K Reed, Ph.D.; James A. Webster, Ph.D.; Russell E. Wright, Ph.D.

Associate Professors
Robert W. Barker, Ph.D.; Gerrit W. Cuperus, Ph.D.; Jonathon V. Edelson, Ph.D.; W. Scott Fargo, Ph.D.

Associate Professors

Forestry
Professor and Head
Edwin L. Miller, Ph.D.

Professors
Thomas C. Hennessey, Ph.D.; Charles G. Tauer, Ph.D.

Instructor
Glenden D. Adams, M.S.

Biochemistry
Professor and Head
James B. Blair, Ph.D.

Professors
Margaret K. Eisenberg, Ph.D.; Richard C. Eisenberg, Ph.D.; Robert K Ghosh, Ph.D., Franklin R Leach, Ph.D.; Ulrich K. Melcher, Ph.D.; Earl D. Mitchell, Ph.D.; Andrew J. Mort, Ph.D.; George V. Odell Ph.D.; H. Olin Spivey, Ph.D.; Linda Yu, Ph.D.

Associate Professor
Robert L. Mats, Ph.D.

Assistant Research Professors
S. Kay Nida, Ph.D.; Margaret Pierce, Ph.D.

Instructor
Judy A. Hall, M.S.

Entomology
Professor and Head
Daniel P. Bartell, Ph.D.

Professors
Raymond D. Eikenberry, Ph.D.; John R Sauer, Ph.D.

Professor and Endowed Chair
Stephen K. Wilke, Ph.D.

Professors
Richard C. Berberet, Ph.D.; Robert L. Burton, Ph.D.; Stanley Coppock, Ph.D.; J. Alexander Hair, Ph.D.; S. Dean Kindler, Ph.D.; Donald C. Peters, Ph.D.; Kenneth N. Pinkston, Ph.D.; David K Reed, Ph.D.; James A. Webster, Ph.D.; Russell E. Wright, Ph.D.

Associate Professors
Robert W. Barker, Ph.D.; Gerrit W. Cuperus, Ph.D.; Jonathon V. Edelson, Ph.D.; W. Scott Fargo, Ph.D.

Assistant Professors

Professor and Head
Edwin L. Miller, Ph.D.

Professors
Thomas C. Hennessey, Ph.D.; Charles G. Tauer, Ph.D.
Associate Professors
Stephen W. Hallgren, Ph.D.; David K. Lewis, D.Phil.; Thomas B. Lynch, Ph.D.; Robert F. Wittwer, Ph.D.

Assistant Professors
Steven Anderson, Ph.D.; Donald J. Turton, Ph.D.

Instructor
Thomas Kuzmic, M.S.

HORTICULTURE AND LANDSCAPE ARCHITECTURE

Professor and Head
Dale M. Maronek, Ph.D.

Professors
Paul J. Mitchell, M.S.; James E. Motes, Ph.D.; Michael W. Smith, Ph.D.; Glenn G. Taylor, Ph.D.

Associate Professors
Joel F. Barber, Ph.D.; Brian A. Kahn, Ph.D.; Charles A. Leider, M.C.P.; B. Dean McCraw, Ph.D.; Doug C. Needham, Ph.D.; B. Warren Roberts, Ph.D.; Michael A. Schnelle, Ph.D.

Assistant Professors
Jeffrey A. Anderson, Ph.D.; John M. Dole, Ph.D.; Janet C. Henderson, Ph.D.; Paul Hsu, M.L.A; Niels Maness, Ph.D.; Dennis Martin, Ph.D.; Tun Schmoll, M.L.A; Julia Whitworth, Ph.D.

Instructors
Amy Bartell, B.LA; Steven Dobbs, K Darrell Berlin, Ph.D.; Lionel M. Ph.D.;Martin Wallen, Ph.D.; Samuel Ph.D.; Joseph A. Stout, Ph.D.

Jeffrey A. Anderson, Ph.D.; John M. Dole, Ph.D.; Janet C. Henderson, Ph.D.; Paul Hsu, M.L.A; Niels Maness, Ph.D.; Dennis Martin, Ph.D.; Tun Schmoll, M.L.A; Julia Whitworth, Ph.D.

Instructors
Amy Bartell, B.LA; Steven Dobbs, K Darrell Berlin, Ph.D.; Lionel M. Ph.D.;Martin Wallen, Ph.D.; Samuel Ph.D.; Joseph A. Stout, Ph.D.

PLANT PATHOLOGY

Professor and Head
Horatio A. Mottola, Ph.D.

Regents Professors
K Darrell Berlin, Ph.D.; Lionel M. Raff, Ph.D.

Professors

Associate Professors
Richard A. Bunce, Ph.D.; John I. Gelder, Ph.D.

Assistant Professors
Christopher M. Adams, Ph.D.; Corrina Czekaj, Ph.D.; Paul W. Geno, Ph.D.; Edward Knobbe, Ph.D.; Ziad El Rassi, Ph.D.

Instructor
S. Daryl Larson, Ph.D. (adjunct)

COMPUTER SCIENCE

Professor and Head
George E. Hedrick, Ph.D.

Professor
Rector L. Page, Ph.D. (adjunct)

Associate Professors
John P. Chandler, Ph.D.; K M. George, Ph.D.; Leslie Gilliam, M.S. (adjunct); Stephen Hill, Ph.D. (adjunct); Jacques La France, Ph.D. (adjunct)

Assistant Professors
Joseph G. Cochran, Ph.D. (adjunct); Hauzi Lu, Ph.D.; Blayne E. Mayfield, Ph.D.; William D. Miller, M.S.; Donald Mitchell, Ph.D. (adjunct); Mansur H. Samadzadeh, Ph.D.; Glenn Thompson, Ph.D. (adjunct)

Instructors

BOTANY

Professor and Head
Glenn W. Todd, Ph.D.

Professors
Becky B. Johnson, Ph.D.; James K McPherson, Ph.D.; James D. Ownby, Ph.D.; Paul E. Richardson, Ph.D.; Ronald J. Tyril, Ph.D.

Associate Professors
Anne Ewing, Ph.D. (adjunct); David W. Meinke, Ph.D.; Susan Studlar, Ph.D. (adjunct)

Assistant Professors
Michael W. Palmer, Ph.D.; Arnon Rikin, Ph.D.

CHEMISTRY

Professor and Head
Horatio A. Mottola, Ph.D.

Regents Professors
K Darrell Berlin, Ph.D.; Lionel M. Raff, Ph.D.

Professors

Associate Professors
Richard A. Bunce, Ph.D.; John I. Gelder, Ph.D.

Assistant Professors
Christopher M. Adams, Ph.D.; Corrina Czekaj, Ph.D.; Paul W. Geno, Ph.D.; Edward Knobbe, Ph.D.; Ziad El Rassi, Ph.D.

Instructor
S. Daryl Larson, Ph.D. (adjunct)

ASSOCIATE DEAN, College of Arts and Sciences

ART

Associate Professor and Interim Head
Nancy B. Wilkinson, Ph.D.

Professors
Larry C. Avrett, M.F.A; Richard A. Bivins, M.F.A.

Assistant Professors
Dean P. Bloodgood, M.F.A; Nicholas W. Bomorman, M.F.A; Robert E. Parks, M.F.A; BJ. Smith, M.F.A

Assistant Professors
Deborah H. Cibelli, MA; Carey A. Hissey, M.F.A; Christopher T. Ramsay, M.F.A; David M. Roberts, M.F.A.; Mark D. Sisson, M.F.A; Jack D. Titus, M.F.A

Assistant Professors
Joseph G. Cochran, Ph.D. (adjunct); Hauzi Lu, Ph.D.; Blayne E. Mayfield, Ph.D.; William D. Miller, M.S.; Donald Mitchell, Ph.D. (adjunct); Mansur H. Samadzadeh, Ph.D.; Glenn Thompson, Ph.D. (adjunct)

Instructors

ENGLISH

Professor and Head
Guy Bailey, Ph.D.

Professors
Peter C. Rollins, Ph.D.; Thomas L. Warren, Ph.D.; Gordon Weaver, Ph.D.

Associate Professors
Linda Austin, Ph.D.; Richard Batteiger, Ph.D.; Robert Brown, Ph.D.; Leonard Leff, Ph.D.; William Pixton, Ph.D.; Ravi Sheorey, Ph.D.; Jeffrey Walker, Ph.D.; Edward P. Walkiewicz, Ph.D.

Assistant Professors
Randy Eldevik, Ph.D.; Elizabeth Grubgeld, Ph.D.; Edward Jones, Ph.D.; Linda Leavell, Ph.D.; Carol Modor, Ph.D.; Michael O'Neill, Ph.D.; Martin Wallen, Ph.D.; Samuel Whitsitt, Ph.D.

FOREIGN LANGUAGES AND LITERATURES

Associate Professor and Head
Kenneth J. Dohlaride, Ph.D.

Professors
Santiago Garcia, Ph.D.; Harry S. Woollen, Ph.D.

Associate Professors
Cida S. Chase, Ph.D.; John J. Deveny, Jr., Ph.D.; Perry J. Getherer, Ph.D.; John W. Howland, Ph.D.; David A. Patterson, Ph.D.; Dorothy Schrader, Ph.D.; James Wills, MA

Assistant Professors
Victor Dimitriev, Ph.D.; Paul D. Epstein, Ph.D.; Nadine Olson, Ph.D.; Frederique Van De Poel, Ph.D.

Instructors
Dora M. Deveny, M.S.Ed.; Hildegund Wohler, MA

Counselor
Catherine Ware, M.S.

GEOGRAPHY

Professor and Head
Olen Paul Matthews, J.D., Ph.D.

Regents Professor
John F. Rooney, Ph.D.

Regents Service Professor
Richard D. Hecock, Ph.D.

Professor
George O. Carney, Ph.D.

Assistant Professors
James Curtis, Ph.D.; Louis Seig, Ph.D.; Stephen J. Staider, Ph.D.; Stephen W. Tweedie, Ph.D.

Assistant Professors
Stephan R Higley, Ph.D.; Thomas A. Wilde, Ph.D.

Instructor
M. Richard Hackett, MA

SCHOOL OF GEOLOGY

Sun Chair, Regents Professor, and Head
Wayne A. Pettyjohn, Ph.D.

Professors
Zahair Al-Shaieb, Ph.D.; Arthur Hounsloew, Ph.D.; Douglas C. Kent, Ph.D.; Gary F. Stewart, Ph.D.; John D. Vitek, Ph.D.

Associate Professors
Ibrahim Cemen, Ph.D.; Arthur Cleaves, Ph.D.; Vernon Scott, Ph.D.

Assistant Professor
Scott M. Ritter, Ph.D.

HISTORY

Associate Professor and Interim Head
Richard C. Rohrs, Ph.D.

Professors
Joseph F. Byrnes, Ph.D.; George F. Jewsbury, Ph.D.; L. George Moses, Ph.D.; Joseph A. Stout, Ph.D.

Associate Professors

Assistant Professors
John P. Bischoff, Ph.D.; William S. Bryans, Ph.D.; James F. Cooper, Jr., Ph.D.; Lionel M. Jensen, MA; Etta L. Perkins, Ph.D.; Bryant T. Ragan, Ph.D.; Elizabeth A. Williams, Ph.D.

Assistant Professors
John P. Bischoff, Ph.D.; William S. Bryans, Ph.D.; James F. Cooper, Jr., Ph.D.; Lionel M. Jensen, MA; Etta L. Perkins, Ph.D.; Bryant T. Ragan, Ph.D.; Elizabeth A. Williams, Ph.D.

SCHOOL OF JOURNALISM AND BROADCASTING

Professor and Director
Marian D. Nelson, Ed.D.

Associate Professors

Assistant Professors
John Catsis, M.S.J.; Donald Forbes, M.S.; Elisabeth John, M.Ed.; Maureen Nemecek, Ph.D.; Charles Overstreet, M.S.; Donald Reed, BA; Gregory Stefaniak, Ph.D.; Keith Swezy, M.S.; Susan Tomlinson, M.S.; Fritz Wirt, M.S.

Visiting Assistant Professor
Deborah Bendier, Ph.D.

117
MATHEMATICS
Associate Professor and Interim Head
Joel K. Haack, Ph.D.
Professor and Associate Head
Dennis Bertholf, Ph.D.
Regents Professor
Dale E. Alsopch, Ph.D.
Professors
Associate Professors
James Cogdell, Ph.D.; J. Brian Conrey, Ph.D.; Bruce C. Crauder, Ph.D.; Amit Ghosh, Ph.D.; Sheldon Katz, Ph.D.; J. Robert Myers, Ph.D.; Alan Noell, Ph.D.; Carsten Schutt, Ph.D.; David J. Ullrich, Ph.D.; John E. Wolfe, Ph.D.; David J. Wright, Ph.D.
Assistant Professors
Birne Binegar, Ph.D.; Jin-Tshe Chang, Ph.D.; Lisa A. Mantini, Ph.D.; Mark McConnell, Ph.D.; Akhiko Yukie, Ph.D.; Roger Zierau, Ph.D.

MICROBIOLOGY
Professor and Head
Robert V. Miller, Ph.D.
Professors
Norman N. Durham, Ph.D.; H. James Harmon, Ph.D.; Mark R Sanborn, Ph.D.; Helen Vishniac, Ph.D.
Assistant Professors
Kim Burham, Ph.D.; Alan R. Harker, Ph.D.; Moses Vijayakumar, Ph.D.

DEPARTMENTS OF MILITARY STUDIES
Coordinator
Smith L. Holt, Ph.D.

AEROSPACE STUDIES
Professor of Aerospace Studies and Head
Col Byron W. Scott, M.S.
Assistant Professors
Cpt Randolph J. Harvey, M.S.; Cpt Steven L. Mitchell, M.S.
Staff
SSgt Jean A Rawles

MILITARY SCIENCE
Professor of Military Science and Head
LTC Michael C. Milam, M.B.A.
Assistant Professors
Cpt Eric F. Lasher, B.S.; Cpt Charles W. Marshall, B.S.

Staff
MSG John D. Harrell; MSG Noble E. Rodgers, Sr.; SSG Derwin Ravenall

MUSIC
Professor and Head
Gerald D. Frank, D.M.A.
Professor
Gwen Powell, M.F.A.
Associate Professors
Assistant Professors
Instructor
Thora duBois, M.M.

PHILOSOPHY
Professor and Interim Head
Neil R Luebke, Ph.D.
Professors
Richard W. Egerman, Ph.D.; Edward G. Lawry, Ph.D.
Associate Professors
Robert T. Radford, Ph.D.; Walter G. Scott, Ph.D.; Michael R Taylor, Ph.D.
Assistant Professors
Doreen A Recker, Ph.D.; Mui-Hwa (May) Sim, Ph.D.

PHYSICS
Professor and Head
H. Larry Scott, Ph.D.
Regents Professors
James N. Lange, Ph.D.; Richard C. Powell, Ph.D.
Professors
Bruce J. Ackerson, Ph.D.; George S. Dixon, Ph.D.; Joel J. Martin, Ph.D.; Stephen W. S. McKeever, Ph.D.; Mark A Samuel, Ph.D.; Jin-Joo Song, Ph.D.; Paul A Westhaus, Ph.D.; Timothy M. Wilson, Ph.D.
Associate Professors
Satya Nandi, Ph.D.; Jacques Perk, Ph.D.; Peter O. Shull, Ph.D.; James P. Wicksted, Ph.D.
Assistant Professors
Donna K Randy, Ph.D.; Robert Havenstein, Ph.D.; Fenger Tong, Ph.D.

POLITICAL SCIENCE
Professor and Head
Robert E. England, Ph.D.
Professors
Robert Darcy, Ph.D.; Bertil L. Hanson, Ph.D.; James L. Lawler, Ph.D., J.D.; Robert L. Spurner, Jr., Ph.D.; Donley T. Studlar, Ph.D.
Assistant Professors

PSYCHOLOGY
Associate Professor and Head
Vicki Green, Ph.D.
Professors
Assistant Professors
Bob Helm, Ph.D.; Larry Hochhaus, Ph.D.; Daniel W. McNeil, Ph.D.; James Price, Ph.D.; Bill C. Scott, Ph.D.; David Thomas, Ph.D.

RELIGIOUS STUDIES
Professor and Head
Marvin S. Keener, Ph.D.
Phoebe Young Professor
Robert L. Cate, Ph.D.
Associate Professor
James S. Thayer, Ph.D.

SPEECH COMMUNICATION
Associate Professor and Head
Paul D. Harper, Ph.D.
Professor
James Hughey, Ph.D.
Associate Professor
Mike Stano, Ph.D.
Assistant Professors
Sena Harper, Ed.D.; William Morphis, MA; Jeffrey McQuillen, Ph.D.
Instructor
Mary Mandeville, Ed.D.

SPEECH AND LANGUAGE PATHOLOGY AND AUDIOLOGY
Professor and Head
Cheryl Scott, Ph.D.
Associate Professors
Nancy Monroe, Ph.D.; Arthur L. Pentz, Ph.D.
Assistant Professors
Gary J. Beeby, MA; Martha Moose, Ph.D.
Instructors
Ann Davidson, MA; Carol Headrick, M.C.D.; Jan Marks, M.S.

STATISTICS
Professor and Head
J. Leroy Folks, Ph.D.
Professors
P. Larry Claypool, Ph.D.; Richard Dodder, Ph.D.; Ignacy I. Kotlarski, Ph.D.; William D. Warde, Ph.D.; David L. Weeks, Ph.D.
Associate Professor
Barry K Moser, Ph.D.
Assistant Professors
Brenda J. Masters, M.S.; Sahadeb Sarker, Ph.D.

THEATER
Professor and Head
Kenneth Cox, Ph.D.
Professor
Jerry L. Davis, Ph.D.
Associate Professor
Peter Westerhoff, M.F.A.
Assistant Professors
Tracy Callahan, M.F.A; Heidi Hoffer, M.F.A.

ZOOLOGY
Professor and Head
Jerry Willhn, Ph.D.
Professors
John A Bantle, Ph.D.; L. Herbert Bruneau, Ph.D.; Sterling Burks, Ph.D.; Anthony Echelle, Ph.D.; James Shaw, Ph.D.; John Thornton, Ph.D.; Dale Toetz, Ph.D.
College of Business Administration

SCHOOL OF ACCOUNTING

Professor and Head
Lanny G. Chasteen, Ph.D., CPA

Professors
Patrick B. Dorr, Ph.D., CPA; Lawrence H. Hammer, D.B.A., CPA; Don I. Hansen, Ph.D., CPA; Amy H. Lau, Ph.D., CPA; Gary K. Meek, Ph.D., CPA; Dennis H. Patz, Ph.D., CPA; John W. Wilguess, Ph.D., CPA

Associate Professors
Janet I. Kimbrell, Ph.D., CPA; M.E. Lacy, Ph.D., CPA; Maryanne M. Mowen, Ph.D., CMA; Kevin E. Murphy, Ph.D., CPA; Charles It Ransom, Ph.D., CPA; Charlotte J. Wright, Ph.D., CPA

Assistant Professors
David S. Murphy, Ph.D., CPA; Thomas S. Wetzel, Ph.D.

ADMINISTRATIVE SERVICES

Professor and Head
Joe W. Fowler, J.D.

Professors
John T. Bale, Jr., Ed.D.; Dennis L Mott, Ed.D.; Zane K. Quible, Ph.D.

Associate Professors

Assistant Professors
Tipton F. McCubbins, J.D.; Andrew L. Urich, J.D.

BUSINESS ADMINISTRATION

M.B.A. Program Director
Cynthia S. Gray, M.B.A

ECONOMICS

Professor and Head
Ronald L. Moomaw, Ph.D.

Regents Professors
Frank G. Steindl, Ph.D.; Larkin B. Warner, Ph.D.

Regents Distinguished Service Professor
Richard W. Poole, Ph.D.

Professor
Orley M. Amos, Jr., Ph.D.; Michael R. Edgman, Ph.D.; Joseph M. Jadlow, Jr., Ph.D.; Gerald M. Lage, Ph.D.; Kent W. Olson, Ph.D.; Robert L. Sandmeyer, Ph.D.; Joseph Shamaan, Ph.D.

Associate Professors
Michael J. Applegate, Ph.D.; Pauline W. Kopecky, Ph.D.; Edward O. Price, III, Ph.D.; Keith D. Willett, Ph.D.

Assistant Professors
Lee C. Adkins, Ph.D.; Kevin M. Currier, Ph.D.; James F. Fain, Ph.D.; Mary N. Gade, Ph.D.; Andreas Savvides, Ph.D.

FINANCE

Associate Professor and Head
Janice W. Jadlow, Ph.D.

Professor
W. Gary Simpson, Ph.D.

Associate Professors
James F. Jackson, Jr., Ph.D.; Ronald K Miller, Ph.D.; John Polonchek, Ph.D.; John R. Wingender, Ph.D.

Assistant Professors
Anne E. Gleason, Ph.D.; Timothy L Krehbiel, Ph.D.

MANAGEMENT

Professor and Head
Wayne A Meinhart, Ph.D.

Regents Professor
Hon-Shiang Lau, Ph.D.

Professors
Richard A Aukerman, Ph.D.; G. Daryl Nord, Ph.D.; Ramesh Shards, Ph.D.; Thomas H. Stone, Ph.D.; J. Scott Turner, Ph.D.

Associate Professors
Steven H. Barr, Ph.D.; David C. Ho, Ph.D.; Tim C. Ireland, Ph.D.; Marilyn G. Kleke, Ph.D.; Chalmer E. Labig, Jr., Ph.D.; Debra L Nelson, Ph.D.; Jeretta A. Nord, Ed.D.

Assistant Professors
Nikunj P. Dalai, Ph.D.; Kenneth K Eastman, M.S.; Vance H. Fried, J.D.; Jayaram Ramanathan, Ph.D.; Faye L Smith, Ph.D.; Margaret White, Ph.D.; Charles It Williams, Ph.D.; Rick L. Wilson, Ph.D.

MARKETING

Professor and Head
Stephen J. Miller, Ph.D.

Professors

Associate Professors
James Hromas, Ph.D.; Ruth H. Krieger, Ph.D.; Joshua L Wiener, Ph.D.

Assistant Professors
Gary L. Frankwick, Ph.D.; Richard Germain, Ph.D.; Jerry It Goosby, Ph.D.; Ajay Sukhdial, Ph.D.

College of Education

APPLIED BEHAVIORAL SCIENCES

Professor and Head
Dale It Fuqua, Ph.D.

Professors
Kay S. Bull, Ph.D.; N. Jo Campbell, Ed.D.; Judith E. Dobson, Ph.D.; Rondal It Gamble, Ph.D.; James M. Seals, Ph.D.; Paul G. Warden, Ph.D.

Associate Professors

Assistant Professors
Laura B. Barnes, Ph.D.; Marcia M. Dickman, Ph.D.; David E. McIntosh, Ph.D.; Diane M. Montgomery, Ph.D.; John S.C. Romans, Ph.D.; Janice E. Williams, Ph.D.

Adjunct Assistant Professors

AVIATION AND SPACE EDUCATION

Professor and Head
Kenneth E. Wiggins, Ed.D.

Assistant Professors

CURRICULUM AND INSTRUCTION

Regents Professor and Head
Douglas B. Aichele, Ed.D.

Professors

Associate Professors

Assistant Professors
Sally Carter, Ed.D.; H. Jon Jones, Ed.D.; Nadine Olson, Ph.D.; Margaret Scott, Ph.D.

Visiting Assistant Professor
Gerald Burns, Ed.D.

Adjunct Assistant Professors

EDUCATIONAL ADMINISTRATION AND HIGHER EDUCATION

Professor and Head
Joseph W. Licata, Ph.D.

Professors

Associate Professors

Assistant Professors
Ed Harris, Ph.D.; Adrienne Hyle, Ph.D.; Stephen Katsinas, Ph.D.

SCHOOL OF HEALTH, PHYSICAL EDUCATION AND LEISURE

Professor and Director
George H. Oberle, P.E.D.

Professor and Director, Wellness Center
James H. Rogers, Ph.D.

Professor and Coordinator, Physical Education
John G. Bayless, Ed.D.

Associate Professor and Coordinator, Health
Betty M. Edgley, Ed.D.

Associate Professor and Coordinator, Leisure
Lowell Caneday, Ph.D.

Assistant Professor and Coordinator, Graduate Studies
Bert H. Jacobson, Ed.D.

Assistant Professors

Assistant Professors

Instructor
Margaret Rebenar, B.S.

Academic Counselor
Dorothea Rogers, M.S.
SCHOOL OF OCCUPATIONAL AND ADULT EDUCATION
Professor and Director
Melvin D. Miller, Ed.D.

Associate Professor
Francis Tuttle, Ed.D.

Assistant Professors

Adjunct Associate Professors

Assistant Instructors
Gary Oakley Ph.D.; Ray Sanders, Ed.D.; Robert Winklein, Ed.D.

Instructors
Mike Daugherty, M.S.; Carol Duckworth, M.S.

Teaching Associates
Charley Davis, M.S.; Trellys Morris, M.S.

College of Engineering, Architecture and Technology

AGRICULTURAL ENGINEERING
Professor and Head
David R Thompson, Ph.D.

Regents Professor and Sarkeys Distinguished Professor
C.T. Haan, Ph.D., P.E.

Professors
Gerald H. Brusewitz, Ph.D., P.E.; Bobby L. Clary, Ph.D., P.E.; H. Willard Downs, Ph.D.; Ronald L. Elliott, Ph.D., P.E.; Raymond L. Huhnek, Ph.D., P.E.; Glenn A. Kranzler, Ph.D.; A Pat Lewis, M.S.; Ronald T. Noyes, M.S., P.E.; Charles E. Rice, Ph.D., P.E. (adjunct); Richard W. Whitney, Ph.D., P.E.

Associate Professors
Sam L. Harp, M.S., P.E.; Michael B. Smolen, Ph.D.; John B. Solie, Ph.D.; Marvin L. Stone, Ph.D.; Darrel E. Temple, M.S. (adjunct); Bruce Wilson, Ph.D.

Assistant Professors
Glenn O. Brown, Ph.D.; Thomas A Esch, Ph.D.; Harry L. Field, Ed.D.; Gregory Hanson, Ph.D. (adjunct); Michael A Kizer, Ph.D.; Kerry Robinson, M.S. (adjunct); Daniel E. Storm, Ph.D.

SCHOOL OF ARCHITECTURE
Professor and Head
James F. Knight, M.Arch., AIA

Professors

Associate Professors
Eric N. Angevine, M.S. Arch., M.S.Engr., P.E.; David A Hanser, M.Arch.; Richard E. Seedorf, M.Arch., AIA; Jeffrey K Williams, M.Arch., AIA

Assistant Professors
Nigel R Jones, M.Arch., RIBA; Steve E. O'Hara, M.Arch.Engr., P.E.; J. Randall Seitsinger, M.Arch.

CHEMICAL ENGINEERING
AMOCO Chair and Head
Robert L. Robinson, Jr., Ph.D., P.E.

Regents Professor
Kenneth J. Bell, Ph.D., P.E.

Professors
Gary L. Fouch, Ph.D., P.E.; AH. Johannes, Ph.D., P.E.; Mayis Seapan, Ph.D.; Jan Wagner, Ph.D., P.E.

Associate Professors
Ruth C. Ebar, Ph.D.; William E. Payne, B.S. (adjunct)

Assistant Professors
Khaled A.H. Gasem, Ph.D.; David A Tree, Ph.D.

CIVIL ENGINEERING
Professor and Head
Robert K Hughes, Ph.D., P.E.

Professors
William P. Dawkins, Ph.D., P.E.; Allen E. Kelly, Ph.D., P.E.; John P. Lloyd, Ph.D., P.E.; William F. McTernan, Ph.D., P.E.; Garold D. Oberlender, Ph.D., P.E.; Mete Oner, Ph.D., P.E.; Donald R Sthenet, Ph.D., P.E.

Associate Professors

Assistant Professors
Michael Ayers, Ph.D., P.E.; Tim Hogue, Ph.D., P.E.

ELECTRICAL AND COMPUTER ENGINEERING
Professor and Head
James Baker, Ph.D., P.E.

Regents Professor
K Rao Yarlagadda, Ph.D., P.E.

Professors
H. Jack Allison, Ph.D., P.E.; Charles M. Bacon, Ph.D., P.E.; J. Bee Bednar, Ph.D., P.E. (adjunct); Stephen S. Bell, Ph.D., P.E. (adjunct); Hans R Bilger, Ph.D.; Jerzy S. Krasinski, Ph.D.; Ramachandra G. Ramakumar, Ph.D., P.E.; Ronald F. Rhoten, Ph.D., P.E.

Associate Professors
William J. Cochran, Ph.D. (adjunct); Richard L. Cummins, Ph.D., P.E.; Martin T. Hagan, Ph.D., P.E.; Chriswell G. Hutchens, Ph.D., P.E.; Louis G. Johnson, Sc.D., Carl D. Latino, Ph.D.; Joe Owen, M.S. (adjunct); Keith A Teague, Ph.D., P.E.

Assistant Professors
John W. Cartinhour, Ph.D., E.I.; Jong J. Lee, Ph.D.; George Scheets, Ph.D.; James C. West, Ph.D., E.I.; Raymond Zanoni, Ph.D.

GENERAL ENGINEERING
Professor and Head
Bennett L. Basore, Sc.D., P.E. (emeritus)

Associate Professor
Gary B. Ferrell, Ph.D.

INDUSTRIAL ENGINEERING AND MANAGEMENT
Professor and Head
Carl B. Estes, Ph.D., P.E.

Regents Professors
Kenneth E. Case, Ph.D., P.E.; Joe H. Mize, Ph.D., P.E.; Wayne C. Turner, Ph.D., P.E.

Professors
Allen C. Schuermann, Ph.D., P.E.; James E. Shamblin, Ph.D., P.E.; M. Palmer Terrell, Ph.D., P.E.

Associate Professors
Michael H. Branson, Ph.D.; David E. Mandeville, Ph.D.; John W. Nazemetz, Ph.D.

Assistant Professor
Manjunath Kamath, Ph.D.

MECHANICAL AND AEROSPACE ENGINEERING
Professor and Head
Lawrence L. Hobrock, Ph.D., P.E.

Most Professor
Ranga Komanduri, Ph.D.

Professors
David G. Lilley, Ph.D., P.E.; Richard L. Lowery, Ph.D., P.E.; Peter M. Moretti, Ph.D., P.E.; C. Eric Price, Ph.D., P.E.; Karl N. Reid, Sc.D., P.E.; Robert L. Swaim, Ph.D., P.E.; Merlin L. Millett, Jr., Ph.D. (adjunct); Merlin L. Zirkle, Ph.D., P.E.

Associate Professors
David G. Lilley, Ph.D., P.E.; Richard L. Lowery, Ph.D., P.E.; Peter M. Moretti, Ph.D., P.E.; C. Eric Price, Ph.D., P.E.; Karl N. Reid, Sc.D., P.E.; Robert L. Swaim, Ph.D., P.E.; Merlin L. Millett, Jr., Ph.D. (adjunct); Merlin L. Zirkle, Ph.D., P.E.

Electronics and Computer Technology
Professor and Head
James E. Bose, Ph.D., P.E.

CONSTRUCTION MANAGEMENT TECHNOLOGY
Professor and Director
Joseph R. Bradley, M.S., P.E.

Associate Professors
Clarence J. Martin, M.Arch., AIA, P.E.; Charles A. Rich, M.S., P.E.

ELECTRONICS AND COMPUTER TECHNOLOGY
Associate Professor and Head
Thomas G. Bertenshaw, M.S., M.Ed.

ASSOCIATE PROFESSORS

Instructor
Jimmy Bryson, B.S.

LECTURER
Ellis Buckles, B.S.

FIRE PROTECTION AND SAFETY TECHNOLOGY
Professor and Interim Head
Ronald D. Smith, Ph.D., P.E.

Associate Professors
Larry Borlt, M.S., C.S.P., P.E.; Pat D. Brock, M.S., P.E.

ASSOCIATE PROFESSOR
Jim L. Hansot, M.S., C.S.P.

GENERAL TECHNOLOGY
Professor and Head
James E. Bose, Ph.D., P.E.

MANUFACTURING TECHNOLOGY
Associate Professor and Head
Gerald R. McClain, M.S., CMfgT.

Professor
Gary G. Hansen, Ph.D., CMfgT.

Assistant Professors
Mike Magill, M.S.; John C. Scheiling, B.S.
MECHANICAL DESIGN TECHNOLOGY
Associate Professor and Head
Gerald R. McClain, M.S., CMfgT.

Professors
Gary G. Hansen, Ph.D., CMfgT.; Raymond F. Neathery, Ph.D., P.E.

Assistant Professor
D. Jack Bayles, Ph.D., P.E.

Professor and Chair
James F. Routsong, D.O.

Assistant Professors
Mike Magill, M.S.; John C. Scheiinger, B.S.; Larry D. Simmons, M.S.; G. Richard Thomas, BA

Teaching Associate
Arlin Harris, A.S.

MECHANICAL POWER TECHNOLOGY AND PETROLEUM TECHNOLOGY
Professor and Head
Marvin D. Smith, PhD., P.E.

Professors
Don Adams, Ph.D.; Eugene K. Buchholz, Ph.D., P.E.; Bill L. Cooper, Ed.D.

Associate Professors
Franklin F. Eckhart, M.S., P.E.; Frederick D. Norvelle, M.S., P.E.

College of Home Economics

DESIGN, HOUSING AND MERCHANDISING
Professor and Head
Grovalynn Sisler, Ed.D.

Professors
Donna Branson, Ph.D.; Margaret J. Weber, Ph.D.

Associate Professors
Marilyn Burns, Ph.D.; Laura Jolly, Ph.D.; M. Lynne Richards, Ph.D.

Assistant Professors
Bill Beitz, M.S.; Sarah Drummond, M.S.; Asha Hegde-Neizgoda, M.S.; Jan Park, Ph.D.; Tana Stufflebean, Ph.D.

Instructors
Carol Bornman, M.S. (visiting); Louise Schroeder, M.S.

Lecturers
Rick Bartholomew, M.S.; Gwen Brewer, Ph.D.

FAMILY RELATIONS AND CHILD DEVELOPMENT
Professor and Head
Rex E. Culp, Ph.D., J.D.

Professors
Dorothy Goss, Ph.D.; Lynda Harriman, Ph.D.; Beulah M. Hirschlein, Ph.D.; Elaine Jorgenson, Ed.D.; Patricia K. Knaub, Ph.D.

Associate Professors
Margaret Callsen, Ph.D.; Glennis Couchman, Ph.D.; David G. Fournier, Ph.D.; Bettye Gaffney, Ed.D.; Patricia Self, Ph.D.; Joseph Weber, Ph.D.; Sue Williams, Ph.D.

Assistant Professors
Donna Cadwalader, Ph.D.; Donna Coughenour, Ph.D.; Renee Daugherty, Ph.D.; JoAnn Farver, Ph.D.; Shelia Forbes, Ph.D.; Arlene Fulton, Ph.D.; Charles Hendrix, Ph.D.; Carolyn Henry, Ph.D.; Gong Soog Hong, Ph.D.; Diane Jackman, Ph.D.; Mona Lane, Ph.D.; Wayne Matthews, Ph.D.; Ann Mills, M.S.; Kay Murphy, Ph.D.; Linda Robinson, Ph.D.; John Rusco, D.Min. (visiting); Ruth Tomes, Ph.D.; Elaine Wilson, Ph.D.

Instructors
Billie Chambers, M.S.; Barbara Heiser, M.S.; Faye Ann Presnal, M.S.; Patricia Wellen, M.S. (visiting)

Lecturer
Valerie Shangreux, M.S.

FOOD, NUTRITION AND INSTITUTION ADMINISTRATION
Professor and Head
E.C. Nelson, Ph.D.

Professors
Lea L. Ebro, Ph.D.; Barbara J. Stoelcker, Ph.D.

Associate Professors
Janice Hermann, Ph.D.; N. Sue Knight, Ph.D.; Bernice Kopel, Ed.D.; June Wolgemuth, Ph.D.

Assistant Professors
Andrea Arquitt, Ph.D.; Barbara Brown, Ph.D.; Christa Hanson, Ph.D.; Carolyn Brown-Ukupa, Ph.D.; Ibrahim Wahem, Ph.D.

Assistant Extension Specialists
Donna Jean Hunt, M.S.; Julie Marzuola, M.S.; Glenna Williams, M.S.

SCHOOL OF HOTEL AND RESTAURANT ADMINISTRATION
Teaching Associate and Interim Director
Jim L. Anderson, M.S.

Professor
G. Baker Bokomey, Ed.D.

Instructor
Donald Rose, M.S.

College of Osteopathic Medicine

GENERAL MEDICINE
Professor and Associate Dean
Larry D. Cherry, D.O.

Medicine
Clinical Professor and Chair (part-time appointment)
Richard C. Staab, D.O.

Clinical Professors (part-time appointment)

Clinical Associate Professors (part-time appointment)
David F. Hitzeman, D.O.; David S. James, D.O.; Glenn B. Robbins, Jr., D.O.

Clinical Assistant Professors (part-time appointment)
Christian S. Hanson, D.O.; Richard A. Hastings, D.O.; Kenneth R. Trinidad, D.O.

GENERAL PRACTICE
Associate Professor and Chair
Thomas R. Pickard, D.O.

Professors
Larry D. Cherry, D.O.; Tom E. Denton, D.O.; Jack R Wolfe, D.O.

Associate Professors
Janice Hermann, Ph.D.; N. Sue Knight, Ph.D.; Bernice Kopel, Ed.D.; June Wolgemuth, Ph.D.

Assistant Professors
Andrea Arquitt, Ph.D.; Barbara Brown, Ph.D.; Christa Hanson, Ph.D.; Carolyn Brown-Ukupa, Ph.D.; Ibrahim Wahem, Ph.D.

Assistant Extension Specialists
Donna Jean Hunt, M.S.; Julie Marzuola, M.S.; Glenna Williams, M.S.

SCHOOL OF HOTEL AND RESTAURANT ADMINISTRATION
Teaching Associate and Interim Director
Jim L. Anderson, M.S.

Professor
G. Baker Bokomey, Ed.D.

Instructor
Donald Rose, M.S.

COLLEGE OF HOME ECONOMICS

DEPARTMENT OF ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS

ECONOMICS
College of Veterinary Medicine

PHYSIOLOGICAL SCIENCE

Regents Professor and Head
Charlotte L. Owby, Ph.D.

Professors
James E. Breazile, D.V.M., Ph.D.;
*George E. Burrows, D.V.M., Ph.D.;
Everett C. Short, Jr., D.V.M., Ph.D.

Associate Professors
*William C. Edwards, D.V.M., M.S.
(adjunct); Subbiah Sangiah, D.V.M.,
Ph.D.; Larry E. Stein, Ph.D.; Alastair
G. Watson, B.V.Sc., Ph.D.

Assistant Professors
Cyril R. Clarke, B.V.Sc., Ph.D.;
Bruce A. Lessley, Ph.D.; Joseph P.
McCann, Ph.D.

Teaching Associates
Joseph Roder, D.V.M.; Virginia
Schultz, D.V.M.

VETERINARY MEDICINE AND SURGERY

Professor and Head
*Grant H. Turnwald, B.V.Sc., M.S.

Professors
*Joseph W. Alexander, D.V.M., M.S.;
*Michael A. Collier, D.V.M.;
*William C. Edwards, D.V.M., M.S.;
Dan E. Goodwin, D.V.M., Ph.D.;
Thomas Monin, D.V.M.; J. Mack
Oyler, D.V.M., Ph.D.; *Art J. Quinn,
D.V.M.; *Lawrence E. Rice, D.V.M.,
M.S.; *Richard V. Shawley, D.V.M.,
M.S.; Thomas R. Thedford, D.V.M.

Associate Professors
*Robert J. Bahr, D.V.M.; Charles A.
Baldwin, D.V.M., Ph.D.; Kenneth E.
Bartels, D.V.M., M.S.; *David M.
Clark, D.V.M.; *John P. Hoover,
D.V.M., M.S.; *Henry W. Jann,
D.V.M., M.S.; *Marilyn Kostolich,
D.V.M.; *Charles G. MacAllister,
D.V.M.; *Gregor L. Morgan,
M.V.Sc., Ph.D.; *Steven H. Slusher,
D.V.M., M.S.; *Robert A Smith,
D.V.M., M.S.; *Ronald W. Welsh,
D.V.M.

VETERINARY PARASITOLOGY,
MICROBIOLOGY AND PUBLIC
HEALTH

Professor and Head
*Robert W. Fulton, D.V.M., Ph.D.

Professors
Sidney A. Ewing, D.V.M., Ph.D.;
Helen E. Jordan, D.V.M., Ph.D.; A.
Alan Kocan, M.S.P.H., Ph.D.

Associate Professors
J. Carl Fox, Ph.D.; John T. Homer,
Ph.D.

Assistant Professors
*Jean M. d’Offay, D.V.M., Ph.D.;
Richard W. Eberle, Ph.D.; *Rebecca
J. Morton, D.V.M., M.S.; John H.
Wyckoff III, Ph.D.

VETERINARY PATHOLOGY

Professor and Head
Anthony W. Confer, D.V.M., Ph.D.

Professors
Roger J. Panciera, D.V.M., Ph.D.;
Charles W. Qualls, Jr., D.V.M.,
Ph.D.; Jeffie F. Roszel, V.M.D.,
Delbert L. Whiteneack, D.V.M., Ph.D.

Associate Professors
Kenneth Climenkeard, D.V.M.,
Ph.D.; Rick L. Cowell, D.V.M., M.S.;
Ray Ely, D.V.M., Ph.D. (adjunct);
Katherine M. Kocan, M.S.P.H.,
Ph.D.

Assistant Professors
Gregory A. Campbell, D.V.M., Ph.D.;
George L. Murphy, Ph.D.; Renee C.
Pearson, D.V.M., M.S.

Residents
Patricia Ewing, D.V.M.; Natan Mor,
D.V.M., Ph.D.

Research Associates
Edmour Blouin, Ph.D.; Barbara
Wauryniak, D.V.M.

Visiting Instructor
Chandikumar Elangham, M.V.Sc.,
Ph.D.

OKLAHOMA ANIMAL DISEASE
DIAGNOSTIC LABORATORY

Interim Director
Lloyd C. Faulkner, D.V.M., Ph.D.

Assistant Director and Chief Pathologist
*E.L. Stair, D.V.M., Ph.D.

Bacteriologist
*Ronald D. Welsh, D.V.M., M.S.

Pathologists
*Delbert L. Whiteneack, D.V.M.,
Ph.D.

*Board Certification in Specialty Area
### Graduate College Calendar

**First Semester-1991-92, Fall**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 26, Monday</td>
<td>Class work begins</td>
</tr>
<tr>
<td>September 6, Friday</td>
<td>Last day to file a diploma application</td>
</tr>
<tr>
<td>September 7, Friday</td>
<td>Applications for graduate credit for graduating seniors due</td>
</tr>
<tr>
<td>November 8, Friday</td>
<td>FINAL DRAFT copy of dissertations, theses and reports due</td>
</tr>
<tr>
<td>November 8, Friday</td>
<td>Application for admission to spring candidacy due for doctoral and Ed.S. candidates</td>
</tr>
<tr>
<td>November 22, Monday</td>
<td>RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due</td>
</tr>
<tr>
<td>December 6, Friday</td>
<td>FINAL COPIES of dissertations, theses and reports due by fall candidates</td>
</tr>
<tr>
<td>December 15, Sunday</td>
<td>Convocation</td>
</tr>
<tr>
<td>December 20, Friday</td>
<td>Class work ends</td>
</tr>
</tbody>
</table>

**Second Semester-1991-92, Spring**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 13, Monday</td>
<td>Class work begins</td>
</tr>
<tr>
<td>January 24, Friday</td>
<td>Last day to file a diploma application</td>
</tr>
<tr>
<td>February 14, Friday</td>
<td>Applications for graduate credit for graduating seniors due</td>
</tr>
<tr>
<td>March 27, Friday</td>
<td>FINAL DRAFT copy of dissertations, theses and reports due</td>
</tr>
</tbody>
</table>

**Summer 1992 Regular 8-Week Summer Session**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1, Monday</td>
<td>Class work begins</td>
</tr>
<tr>
<td>June 5, Friday</td>
<td>Last day to file a diploma application</td>
</tr>
<tr>
<td>June 5, Friday</td>
<td>FINAL DRAFT copy of dissertations, theses and reports due</td>
</tr>
<tr>
<td>June 12, Friday</td>
<td>Applications for graduate credit for graduating seniors due</td>
</tr>
<tr>
<td>June 19, Friday</td>
<td>RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due</td>
</tr>
<tr>
<td>July 2, Thursday</td>
<td>FINAL COPIES of dissertations, theses and reports due by summer candidates</td>
</tr>
<tr>
<td>July 24, Friday</td>
<td>Convocation</td>
</tr>
<tr>
<td>July 27, Monday</td>
<td>Class work ends (makeup exams)</td>
</tr>
</tbody>
</table>

**Second Semester-1992-93, Spring**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 11, Monday</td>
<td>Class work begins</td>
</tr>
<tr>
<td>January 22, Friday</td>
<td>Last day to file a diploma application</td>
</tr>
<tr>
<td>February 12, Friday</td>
<td>Applications for graduate credit for graduating seniors due</td>
</tr>
<tr>
<td>March 26, Friday</td>
<td>FINAL DRAFT copy of dissertations, theses and reports due</td>
</tr>
<tr>
<td>April 9, Friday</td>
<td>RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due</td>
</tr>
<tr>
<td>April 23, Friday</td>
<td>FINAL COPIES of dissertations, theses and reports due by spring candidates</td>
</tr>
<tr>
<td>April 23, Friday</td>
<td>Application for admission to fall candidacy due for doctoral and Ed.S. candidates</td>
</tr>
<tr>
<td>May 7, Friday</td>
<td>Class work ends</td>
</tr>
<tr>
<td>May 7, Friday</td>
<td>Convocation</td>
</tr>
<tr>
<td>May 8, Saturday</td>
<td>University Commencement</td>
</tr>
</tbody>
</table>

**First Semester-1992-93, Fall**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 24, Monday</td>
<td>Class work begins</td>
</tr>
<tr>
<td>September 4, Friday</td>
<td>Last day to file a diploma application</td>
</tr>
<tr>
<td>September 25, Friday</td>
<td>Applications for graduate credit for graduating seniors due</td>
</tr>
<tr>
<td>November 6, Friday</td>
<td>FINAL DRAFT copy of dissertations, theses and reports due</td>
</tr>
<tr>
<td>November 6, Friday</td>
<td>Application for admission to spring candidacy due for doctoral and Ed.S. candidates</td>
</tr>
<tr>
<td>November 20, Friday</td>
<td>RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATION due</td>
</tr>
<tr>
<td>December 4, Friday</td>
<td>FINAL COPIES of dissertations, theses and reports due by fall candidates</td>
</tr>
<tr>
<td>December 13, Sunday</td>
<td>Convocation</td>
</tr>
<tr>
<td>December 18, Friday</td>
<td>Class work ends</td>
</tr>
</tbody>
</table>

**Summer 1993 Regular 8-Week Summer Session**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 7, Monday</td>
<td>Class work begins</td>
</tr>
<tr>
<td>June 11, Friday</td>
<td>Last day to file a diploma application</td>
</tr>
<tr>
<td>June 11, Friday</td>
<td>FINAL DRAFT copy of dissertations, theses and reports due</td>
</tr>
<tr>
<td>June 18, Friday</td>
<td>Applications for graduate credit for graduating seniors due</td>
</tr>
<tr>
<td>June 25, Friday</td>
<td>RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due</td>
</tr>
<tr>
<td>July 9, Friday</td>
<td>FINAL COPIES of dissertations, theses and reports due by summer candidates</td>
</tr>
<tr>
<td>July 30, Friday</td>
<td>Convocation</td>
</tr>
<tr>
<td>August 2, Monday</td>
<td>Class work ends (makeup exams)</td>
</tr>
</tbody>
</table>

---

**Graduate College**

The Graduate College is the hub of advanced study, research and creativity at Oklahoma State University. Faculty and students share an obligation to achieve greater knowledge and to present it to the scholarly community. Research is best done in an atmosphere where common goals exist. An esprit de corps exists in the OSU academic community where the goals are to maintain regional and national recognition, to provide an exciting research environment where students and faculty can make significant contributions to the store of knowledge, and to encourage each individual to reach his or her potential.

---

**Thomas C. Collins, Ph.D., Dean**

**John D. Vitek, Ph.D., Associate Dean**

**Carol V. Olson, Ed.D., Director of Student Academic Services**
Organization of the Graduate College

The Graduate College administers regulations and standards specified and established by the Graduate Faculty. The Graduate Council is elected by the Graduate Faculty to work with the dean of the Graduate College in development and administration of policy. The Graduate Council is the executive committee of the Graduate Faculty. It formulates and reviews policies concerned with the conduct of graduate study at OSU. All new policies are referred to the Graduate Faculty for approval.

All departmental requests for permission to offer advanced degrees are referred to the Graduate Council and then to the Graduate Faculty with the Graduate Council's recommendations. All requests for waiver or any rules or regulations as listed in the Catalog must be in the form of petitions to the Graduate Council. A supporting letter from the major adviser is also required.

Graduate Council Members

Thomas C. Collins, Chairman
Elaine Jorgenson, Vice-Chairman (1990)

Group I-Biological Sciences
1991-Laval Verhalen
1993-Robert Wetttemann
1991-David Buchanan

Group II-Humanities
1992-Art Pentz
1994-Linda Leavell
1992-William Pixton

Group III-Physical Sciences and Technology
1991-Wayne Powell
1993-Peter Moretti
1991-Robert Gholson

Group IV-Social Sciences
1992-Daniel Tilley
1994-George Carney
1992-Robert Darcy

Group V-Teacher Education
1991-Zane Quible
1993-Judith Dobson
1991-Garry Bice

Research at Oklahoma State University

Research, a critical dimension of the mission of the University, is vital to the growth, health and progress of the state, the region and the nation. Over the last several years, national attention has turned to economic development. This renewed emphasis on economic development and high technology has been spurred by the advances made by the Asian and European economic communities.

OSU is deeply involved in meeting this challenge. In recent years, significant strides have been taken in developing programs at the cutting edge of technology and basic research. The progress made by the establishment of the Noble Research Center for Agriculture and Renewable Natural Resources, the International Trade Development Center, and the ongoing activities of the Laser Materials Center, the robotics and automated manufacturing laboratories, and the biotechnology programs underscore the University's commitment to find solutions to pressing problems.

The University Center for Water Research (UCWR) coordinates programs associated with the Oklahoma Water Resources Research Institute, the Water Research Center and the National Center for Ground Water Research. The UCWR assists researchers in staying on the frontiers of water research by providing critical support and services.

The University Center for Energy Research facilitates and promotes multidisciplinary activities addressing the complex problems in the energy field. It provides funding to initiate and encourage energy-related research. Areas emphasized include fossil fuels, policy and other energy research.

The Telecommunications Center has established the University as a world leader in telecommunications technology and has enhanced OSU's ability to disseminate research results. Major research affiliations exist with the National Center for Groundwater Research, Oak Ridge Associated Universities and National Laboratories, and the Oklahoma Medical Research Foundation. Research facilities exist within each of the academic colleges. Well-equipped laboratories, teaching and diagnostic facilities, and various resource centers provide an excellent environment for creative scholarly research.

University Research Council. The University Research Council operates to assure proper consideration of research projects that are multidisciplinary in nature and to provide a mechanism for consideration of administrative problems and policies. The Council serves as an advisory group on all research matters for the president of the University. This Council is composed of the vice-president for research and dean of the Graduate College, the director of University Extension, a representative from Sigma Xi, the director of Grants and Contracts Administration, and the research directors of the various colleges. The Research Council meets quarterly.

Accreditation

Oklahoma State University is accredited by the North Central Association of Colleges and Schools. Programs within the colleges are also accredited by other agencies.

In the College of Agriculture, the mechanized agriculture program receives approval from the American Society of Agriculture Engineers and the forestry program is accredited by the Society of American Forestry.

In the College of Arts and Sciences, the medical technology program is accredited by the National Accrediting Association of Clinical Laboratory Science; the chemistry program is accredited by the American Chemical Society; the Ph.D. program in history is accredited by the American Historical Association; the School of Journalism and Broadcasting as well as the curriculum in advertising, news editorial, and public relations are accredited by the Accrediting Council on Education for Journalism and Mass Communications; the music program is accredited by the National Association of Schools of Music; and the public administration program in the Department of Political Science is accredited by the National Association of Schools of Public Administration. In the Department of Psychology, the doctoral program in clinical psychology is accredited by the American Psychological Association. The speech pathology program is accredited by the American Speech-Language-Hearing Association and the Oklahoma Speech-Hearing Association.

All programs in the College of Business Administration are fully accredited by the American Assembly of Collegiate Schools of Business, which is the only nationally-recognized accrediting body for programs in business and management. The School of Accounting has separate accreditation by this body.

In the College of Education all teacher education programs are fully accredited by the National Council for Accreditation of Teacher Education (NCATE); Health, Physical Education, and Leisure is accredited by the National Recreation and Park Association as well as the American Alliance for Health, Physical Education, Recreation and Dance; and the vocational rehabilitation counseling master’s program is accredited by the American Council on Vocational Rehabilitation.

In the College of Engineering, Architecture and Technology, the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology has accredited the bachelor’s programs in civil engineering, electrical engineering, industrial engineering and management, mechanical and aerospace engineering, agricultural engineering, chemical engineering, general engineering and architectural engineering. The Technology Accreditation Commission of the Accreditation Board for Engineering and Technology has accredited the bachelor’s programs in electronics technology, fire protection and safety technology, mechanical power technology, petroleum technology, construction management technology, manufacturing technology, and mechanical design technology. The National Architecture Accrediting Board has accredited both the bachelor’s and master’s programs in architecture.

The College of Home Economics has full accreditation for all its programs from the Council for Professional Development, American Home Economics Association. In addition, the College’s program of home economics education and community services is accredited by the National Council for Accreditation of Teacher Education, the Oklahoma State Department of Education, and the Oklahoma State Department of Vocational-Technical Education. The Foundation of Interior Design Education Research has accredited the undergraduate interior design program. Also, the National Council for Accreditation of Teacher Education and the Oklahoma State Department of Education has accredited the programs in family relations and child development. The Child Development Laboratory has received accreditation by the National Academy of Early Childhood Programs. The Council on Accreditation of the American Dietetic Association has accredited the administrative dietetic internship program at the graduate level.

The College of Veterinary Medicine is fully accredited by the American Veterinary Medical Association. The Oklahoma Animal Disease Diagnostic Laboratory is accredited by the American Association of Veterinary Laboratory Diagnosticians and the Boren Veterinary Medical Teaching Hospital has been accredited by the American Animal Hospital Association.
Library

The Oklahoma State University Edmon Low Library contains over 1,500,000 volumes, 2,100,000 microform units and over 165,000 maps. The open-stack arrangement of books and periodicals and the computer-assisted literature search and retrieval system support the on-going academic and research programs. The library contains a complete set of U.S. patents and is a regional depository of the federal government. Graduate students are entitled to a 30 day check-out period for books, and can utilize the interlibrary loan facilities.

Computer Center

The University Computer Center (UCC) provides computing services to all areas of the University including research, instruction, extension and administration. The Center operates three host computers: an IBM 3090-200S with a Vector Facility, operating MVS/XA under VM/XA; a DEC VAX VMS cluster including an 11/780, a 6320, and several VAX station 3100S; and a VAX Ultrix cluster including an 8350 and VAX station 3100S. These computers are accessible via a number of public terminal clusters which are connected to the Asynchronous Communications Network. This network also allows access using microcomputers on or off campus. A large number of computers maintained by various academic departments are also accessible using this network.

The UCC offers a number of computer-related services to the University community. Non-credit short courses are offered each semester. Topics include various mainframe and microcomputer subjects. Registration is required. There is a small charge for some microcomputer courses. Mainframe and microcomputer diagnostic services staff will provide quick answers to computer-related questions.

The Computer Center offers discounts on computer purchases, provides consultation for software and hardware, and has a computer demonstration lab in which the latest products can be observed.

Programming service, systems analysis, design and development are also available. There is a charge for these services.

Research Centers

Agriculture Experiment Station
Agronomy Research Station
Caddo Research Station
Eastern Research Station
Irrigation Research Station
Kiamichi Field Station
North Central Research Station
Pecan Research Station
Sandyland Research Station
Southeast Center
South Central Research Station
Southwest Agronomy Research Station
Noble Research Center for Agriculture and Renewable Natural Resources
Vegetable Research Station
Center for Aerospace Education Services Project
Center for Applications and Remote Sensing
Center for Automated Design and Manufacturing
Center for Consumer Services
Center for Economic Education
Center for Economic Education
Center for Economic Education
Center for Economic Education
Center for Economic Education
Center for International Trade Development
Center for Local Government Technology
Center for Systems Science
Community Education Center
Electronics Laboratory
Engineering Energy Laboratory
Family Study Center
Fluid Power Research Center
Human Nutrition Center
Human Resources Development Center
Institutional Materials Center
Laser Spectroscopy Facility
Materials Synthesis and Characterization Laboratory
Natural Resources and Environmental Education Center
Oklahoma Industrial Energy Management Program
Physical Properties Laboratory
Plant Disease Diagnostic Laboratory
Statistical Laboratory
University Center for Energy Research
University Center for Water Research
Veterinary Medical Research Program
Veterinary Research Station
Water Quality Research Laboratory

OKLAHOMA STATE UNIVERSITY
UCC is part of the BITNET network. Users should contact the UCC to get a BITNET number. For more information, contact the University Computer Center, located in Math Science 115.

Living Accommodations
From high-rise residence halls to single-dwelling apartments, OSU has housing in all types to meet many preferences. The Iba Graduate House is the residence hall designated for single graduate students. This five story air-conditioned building offers single and double year-round occupancy, and an optional meal plan in neighboring cafeterias. Vending machines and microwave ovens are conveniently placed for limited food preparation. Other amenities include an open visitation policy, extensive study space with computer terminals and printers, and parking adjacent to the hall.

Family housing is available on a limited basis. The apartment complex features two-bedroom units. To be eligible, one spouse must be a full-time student (nine credit hours per semester) or be enrolled in six credit hours and be employed by the University 50 percent of the time.

To apply for either housing service, an application and deposit must be filed with the appropriate office. For further information, contact the Office of Residential Life or University Apartments. Early application is suggested.

Health Care
Every student enrolled at OSU is eligible for health care at the University Health Center. Four agencies serve the University who are unique because of their social, economic, cultural or academic background. The program is designed to coordinate and provide services which will assist students so that they may reach their full potential.

Graduate Student Council
The goal of the Graduate Student Council is to improve all aspects of graduate education and graduate student life at OSU. The Council is composed of representatives from each department offering a graduate degree program. Members are nominated by the department heads with membership conferred by the dean of the Graduate College. Each representative is appointed for a term of one year if the student is in good academic standing and is enrolled in at least two credit hours.

Financial Aid
The Student Union offers a host of programs and services. The facilities include a complete food service, a theater, hotel, game rooms, lounges and meeting rooms, bookstores, diverse specialty shops, banking facilities and a travel agency.

Special Services
The Special Services program, a program of the University Counseling Center, provides assistance to the students enrolled in Oklahoma State University who are unique because of their social, economic, cultural or academic background. The program is designed to coordinate and provide services which will assist students so that they may reach their full potential.

Oklahoma Tuition Waiver Scholarships
Eligibility: Oklahoma resident; regular admission to a graduate degree program; cumulative grade-point average greater than 3.00.
Application: Successful completion of ACT Family Financial Statement annually (packet available in Office of Student Financial Aid, 110 Hanner Hall); apply directly to academic departments.
Award: Varies; awards granted by semester.
Deadline: Contact department for deadline.

OSU Foundation Graduate Fellowships
Eligibility: Grade-point average greater than 3.50; acceptance into a graduate degree program; no prior work completed on the particular degree being sought.
Application: Nominations are made by the student's department head.
Award: Variable.
Deadline: Variable.

Oklahoma Tuition Aid Grant (Need Based)
Eligibility: Oklahoma resident; enrolled in a graduate degree program; making satisfactory progress toward a degree.
Application: Successful completion of ACT Family Financial Statement. Grants administered and awarded by Oklahoma State Regents for Higher Education.
Award: Varies according to need.
Deadline: Priority deadline is February 1 for consideration for the subsequent fall semester.

Minority Doctoral Study Grant Program
The Oklahoma State Regents have set aside special funds to underwrite assistance programs for minority graduate students who are studying in public higher education institutions in Oklahoma with college teaching as a career objective. The Doctoral Study Grant Program is for students pursuing the doctoral degree with a commitment to teach in Oklahoma colleges and universities. For further information, contact the Oklahoma State Regents for Higher Education, P.O. Box 54009, Oklahoma City, OK 74154-2054.

Minority Tuition Waivers
As part of a social justice policy enacted by the Oklahoma State Regents for Higher Education, minority nonresident graduate students are eligible for a waiver of their out-of-state tuition whether or not they hold departmental assistantships. Eligible applicants should contact the associate dean or director of students academic services in the Graduate College prior to the beginning of each semester.

Water Resources Presidential Fellowships
The University Center for Water Research accepts applications for Presidential Fellowships in Water Resources. These awards are offered for advanced study and research toward solving pressing water problems in Oklahoma, the region and the nation. Focus areas include water quality and quantity management and protection; efficiency of use, reuse and conservation of the resource; and legal, economic, social and institutional aspects of water resources management. Currently the recipients receive stipends of $1,000 per month, beginning in July. Fellowships are renewable each July 1, and may be continued up to three years, provided satisfactory progress is demonstrated.

To receive additional information concerning the fellowship program including application guidelines, contact the director of the University Center for Water Research, 003 Life Science East, Oklahoma State University, Stillwater, OK 74078.

Student Employment
The Office of University Personnel Services provides assistance to OSU students seeking part-time employment. Students are informed of job opportunities on campus and in the Stillwater community. Applications are available in 407 Whitehurst. Jobs on campus usually offer 12 to 20 hours of work per week in clerical, technical, food service, or general labor positions. Rate of pay and work schedules vary.

Miscellaneous Sources of Financial Aid
1. University and public libraries have information on federal, state and private sources of aid. Factors other than financial need are often taken into account.
2. Many companies and labor unions have programs to help defray the cost of advanced education for their employees or members of their families.

3. Students should check foundations, religious organizations, fraternities or sororities, town or city clubs, community and civic organizations such as the American Legion, YMCA, 4-H Clubs, Kiwanis, Jaycees, Chamber of Commerce, and the Masonic Lodge.

4. Organizations connected with a student’s field of interest often provide scholarships. These organizations may be listed in the U.S. Department of Labor’s Occupational Outlook Handbook, or a student can often find out more about these by contacting faculty members in the major field.

Special Programs

Certification Programs

Oklahoma State University offers State Department of Education-approved post-bachelor’s certification programs for school counselors, psychometrists, reading specialists, and library media specialists. Certification is also offered in speech and language pathology and audiology and in special education (emotionally disturbed and learning disabilities).

Master’s degrees are available in most of these programs and doctorates are available in many.

Post-master’s level certification programs are available in: elementary school principal; school superintendent; secondary school principal; school psychologist; and school counselor.

Inquiries concerning any aspect of the Teacher Education program should be addressed to the Office of Teacher Education or the head of the department offering the program.

National Fellowships

1. Fulbright-Contact Office for Global Studies, 208 Life Science East, 405-744-5663.
2. National Science Foundation-Contact Graduate College, 202 Whitehurst, 405-744-6368.

Oklahoma State University Loans

OSU provides opportunities for students who need financial assistance. These funds are available to students who meet the eligibility requirements of the various programs and are making satisfactory progress in their college work. The Short-term Loan program provides up to a maximum of $200 per semester for the purpose of meeting educationally-related expenses.

Additional information is available in the Office of Student Financial Aid in a data base program called FINDS. Additionally, the Graduate College often has information on miscellaneous forms of financial aid. There is no centralized location for graduate student financial aid; therefore, the student should also contact the reference section of the library for information.

OFF-CAMPUS PROGRAMS

University Center at Tulsa

Oklahoma State University offers graduate courses at the University Center at Tulsa (UCT). All courses offered by OSU faculty are considered resident credit for degrees granted by Oklahoma State University. Courses offered by the other universities participating in UCT can be applied to OSU degree requirements as transfer credit.

The graduate and certification programs approved by the Oklahoma State Regents for Higher Education for Oklahoma State University to offer through the University Center at Tulsa are:

- M.S. in Computer Science
- MA in English
- Teaching English as a Second Language
- Master of Business Administration
- M.S. in Applied Behavioral Studies
- Community Counseling
- Emotionally Disturbed
- Gifted and Talented
- Learning Disabilities

Certification Program in School Psychology
- M.S. in Curriculum and Instruction
- Elementary Education
- Information and Communication Technology
- Reading
- M.S. in Health, Physical Education and Leisure
- Applied Health Sciences
- M.S. in Higher Education
- Certification Program in Educational Administration (Standard Certification for School Superintendent)
- M.S. in Occupational and Adult Education
- Adult and Continuing Education
- Human Resources Development
- M.S. in Trade and Industrial Education
- M.S. in Chemical Engineering
- M.S. in Civil Engineering
- Construction Engineering and Management
- Environmental and Water Resource Engineering
- Geotechnical Engineering
- Transportation Engineering
- M.S. in Electrical Engineering
- M.S. in Environmental Engineering
- M.S. in Industrial Engineering and Management
- M.S. Mechanical Engineering
- M.S. in Family Relations and Child Development
- M.S. in Home Economics Education and Community Services

At present, OSU does not offer any doctoral programs at UCT. Courses offered by OSU at UCT may apply as residence credit to doctoral degree programs that are available in Stillwater. Prior to enrollment in UCT courses, students should secure approval from their advisers concerning the appropriateness of any courses relative to the degree objective. Students should also be aware that substantial portions of doctoral degree programs require attendance in courses and participation in departmental programs in Stillwater.

Graduate Centers

Students may take one-half of the requirements for the master’s degree at a Graduate Center provided they comply with the following conditions:

1. Each student working for a degree must comply with requirements for admission given in the Catalog.
2. At least 22 semester credit hours must be completed after the degree plan has been approved by the student’s advisory committee and the dean of the Graduate College, and filed in the Graduate College. A minimum of 16 semester credit hours must be taken in residence on the Stillwater campus.

3. The thesis or report must be supervised and approved by resident members of the faculty teaching on the Stillwater campus.

4. Final examinations covering the entire graduate program are to be given by a committee selected by the major department and the dean of the Graduate College.

5. The last eight semester credit hours for the degree must be taken on the Stillwater campus unless a written request by the student to take the work at some other place is approved by the head of the major department and the dean of the Graduate College.

Off campus Program in Engineering

A master’s degree in engineering may be obtained with all course requirements being met at off-campus centers of Oklahoma State University, the University of Tulsa, and the University of Oklahoma. At least one-half of the hours needed must consist of courses taught by Graduate Faculty members of Oklahoma State University. The remainder of the hours may be made up of transfer credits from the University of Oklahoma earned on campus or at its off-campus centers and/or the University of Tulsa, and a maximum of eight hours of transfer credits from other institutions with approved graduate programs. All other requirements of the regular master’s degree, as outlined in the Catalog, must be met.

Such a master’s degree has the same designations as the one earned on-campus, except that the transcript will show the wording “Off-campus.”

Extension Credit

Any student registering in a graduate course to be taken by extension must make application for admission to the Graduate College.

Correspondence Credit

Oklahoma State University does not offer graduate courses by correspondence and does not accept credit taken by correspondence toward an advanced degree.
Environmental Science

Program Coordinator
John D. Vitek, Ph.D.

The environmental science program at Oklahoma State University emphasizes that an understanding of, and solution to, many environmental problems involves the application of skills and knowledge of more than one of the traditional disciplines. Graduate Faculty members from the agricultural, biological, social, and physical sciences and from engineering and education join for the purpose of offering graduate programs at the master's and doctor's levels.

The University has had nine decades of experience and development in the application of scientific knowledge to society's problems. Important resources for graduate students are campus research and learning institutes and laboratories, cooperative programs with public and private agencies, and off campus research and teaching facilities. Many of these are staffed by personnel drawn from more than one discipline, and many serve to address problems which are multidisciplinary or interdisciplinary in scope and solution. The environmental science degree programs at the University are designed to utilize these resources and serve students whose interests transcend the traditional demarcations of knowledge and whose goals include the broad understandings and skills obtained by crossing disciplinary lines in the classroom and laboratory.

Graduates from the environmental science program are expected to have skills and knowledge that are applicable to a wide range of research, management, and planning vocations. Government, industry, and private consulting firms offer employment opportunities for environmental science graduates.

Programs of Study.

The breadth of offerings at Oklahoma State University affords flexibility to the student interested in any aspect of the environment. In some cases, the student may choose to integrate work from another discipline with work in a discipline for which all degree requirements are met. In other cases, the student may select course work and research supervision from several disciplines in order to focus on an environmental problem or subject not normally addressed by a single discipline.

The Master of Science Degree.

To obtain the M.S. degree in environmental science, a student must complete the following 36-hour program: 10 hours of core courses, a three-hour seminar in environmental problem analysis, a minimum of 17 hours of courses taken in a thrust area, and a six-hour thesis. The thesis must deal with an environmental problem. Four thrust areas have been identified: energy, environmental education, renewable natural resources, and water. Specific requirements for the master's degree can be obtained from the program coordinator.

The Doctor of Philosophy Degree.

To obtain the Ph.D. degree in environmental science, a student must propose and undertake a minimum of a 60-hour plan of study. The plan of study must include a minimum of 36 credit hours of course work that provides the student with expertise in understanding or solving a problem which is not normally addressed by a single discipline. The plan of study will reflect an emphasis in one of four thrust areas: energy, environmental education, renewable natural resources, and water. Students must write a dissertation dealing with an environmental problem. A maximum of 24 credit hours can be earned for the dissertation. (Minimum credit allowed is 15 credit hours.) Specific requirements for the doctoral degree can be obtained from the program coordinator.

The M.S. with Environmental Science Emphasis.

To obtain the M.S. degree with an environmental science emphasis, the student must satisfy minimum degree requirements as specified by one of the cooperating departments (see list below). In addition the student will be required to take ENVIR 5103 and two courses outside the major department which provide breadth to the degree program.

The Ph.D. with Environmental Science Emphasis.

To obtain a Ph.D. degree with an environmental science emphasis, the student must satisfy minimum degree requirements as specified by one of the cooperating Ph.D.-granting departments (see list below). In addition, the student will be required to take ENVIR 5103, a seminar in environmental problem analysis, and two additional courses outside the major department which provide breadth to the degree program.

Admission.

To participate in environmental science programs at OSU a student must apply to the Graduate College for admission. Application for the environmental science master's or doctoral degree must include a statement of educational and vocational goals and three letters of recommendation. International students must score 575 or above on the TOEFL.

Anyone interested in the environmental science emphasis should apply directly to the department in which they wish to earn a degree. The emphasis is completed by satisfying departmental and program requirements.

All applications to environmental science programs should be submitted at least 60 days before the opening of the semester for which enrollment is first intended. International students should supply all application materials by March 1st for fall enrollment, and July 1st or spring enrollment. The Graduate College will provide the necessary forms.

Financial Assistance. Fee-waiver scholarships are available through the Graduate College for environmental science students. Such scholarships are available for those who can qualify as Oklahoma residents. Priority is given to minority students, and those who can demonstrate financial need. To be considered, an ACT Family Financial Statement must be completed.

Graduate research assistantships are occasionally available through faculty members participating in the environmental science program or through one of the several research institutions or centers on campus. The initial application should specify an interest in an assistantship.

Cooperating Departments

Agricultural Economics
Agricultural Engineering
Agronomy
Animal Science
Biochemistry
Botany
Chemistry
Civil Engineering
Curriculum and Instruction
Design, Housing and Merchandising
Economics
Forestry (M.S. only)
Geography (M.S. only)
Geology (M.S. only)
Political Science (MA only)
Psychology
Sociology
Wildlife and Fisheries Ecology
Zoology

Admission Requirements. Admission to either the Master of Science or Doctor of Philosophy degree programs requires an undergraduate major in animal science, dairy science, poultry science, food science, biochemistry, microbiology or human nutrition. Students majoring in other curricula may qualify by remedying specific undergraduate deficiencies recognized by the student's graduate committee. A student enrolling in a degree program must have been accepted by an adviser prior to official admission.

Steering Committee

Sterling L. Burks, Zoology
Douglas C. Kent, Geology
James J. Lawler, Political Science
Edwin L. Miller, Forestry
Terence J. Mills, Curriculum and Instruction
Patricia E. Norris, Agricultural Economics
Kent W. Olson, Economics
John N. Veenstra, Civil Engineering
John D. Vitek, Program Coordinator, Geology
Sue E. Williams, Design, Housing and Merchandising

(Specific requirements for degree programs can be obtained from the program coordinator in the Graduate College.)

Food Science

Animal Science

Professor and Head Donald G. Wagner, Ph.D.

Biochemistry

Professor and Head James B. Blair, Ph.D.

Microbiology

Professor and Head Robert V. Miller, Ph.D.

Food, Nutrition and Institution Administration

Professor and Head E.C. Nelson, Ph.D.

Food science is an interdisciplinary graduate program designed to provide an opportunity for students to acquire basic knowledge of food industry encompassing the biological and physical sciences. The increasing complexity of the problems involved in the production, processing, and utilization of food demands increased fundamental knowledge to solve these problems. There is a great demand for personnel with advanced training in the broad area of food science to staff research and quality assurance facilities of industry, universities and the federal government.

Admission Requirements. Admission to either the Master of Science or Doctor of Philosophy degree programs requires an undergraduate major in animal science, dairy science, poultry science, food science, biochemistry, microbiology or human nutrition. Students majoring in other curricula may qualify by remedying specific undergraduate deficiencies recognized by the student's graduate committee. A student enrolling in a degree program must have been accepted by an adviser prior to official admission.
Graduate Admission Requirements

Requirements are subject to departmental revision. 1 = Test is required, 2 = Test is recommended, 3 = GRE or Miller may be interchanged, with departmental consent, 4 = GRE or GMAT may be interchanged.

<table>
<thead>
<tr>
<th>MAJOR</th>
<th>DEGREE</th>
<th>GRE</th>
<th>GMAT ANALOGY (MAT)</th>
<th>ADDITIONAL REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRICULTURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Economics</td>
<td>MS, PhD</td>
<td></td>
<td></td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Agricultural Education</td>
<td>MS, EdD EdD</td>
<td></td>
<td></td>
<td>GRE or Miller.</td>
</tr>
<tr>
<td>Agriculture (Agricultural Economics, Agricultural Education, Agronomy, Animal Science, Entomology, Forest Resources, Horticulture &amp; Landscape Architecture, &amp; Plant Pathology)</td>
<td>MAg</td>
<td></td>
<td></td>
<td>See specific departmental section.</td>
</tr>
<tr>
<td>Agronomy</td>
<td>MS</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Crop Science</td>
<td>PhD</td>
<td>2</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Soil Science</td>
<td>PhD</td>
<td>2</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Animal Science</td>
<td>MS</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Animal Breeding</td>
<td>PhD</td>
<td>2</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Animal Nutrition</td>
<td>PhD</td>
<td>2</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Dairy Science</td>
<td>MS</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Poultry Science</td>
<td>MS</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>MS, PhD</td>
<td>2</td>
<td>2</td>
<td>American Chemical Society exams in chemistry.</td>
</tr>
<tr>
<td>Entomology</td>
<td>MS, PhD</td>
<td>2</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Forest Resources</td>
<td>MS</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Horticulture</td>
<td>MS</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Plant Pathology</td>
<td>MS, PhD</td>
<td>1</td>
<td>2</td>
<td>No minimum score.</td>
</tr>
<tr>
<td>ARTS AND SCIENCES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botany</td>
<td>MS, PhD</td>
<td>1</td>
<td>2</td>
<td>No minimum score.</td>
</tr>
<tr>
<td>Chemistry</td>
<td>MS, PhD</td>
<td>2</td>
<td>2</td>
<td>Entrance exams.</td>
</tr>
<tr>
<td>Computer Science</td>
<td>MS</td>
<td>1</td>
<td>2</td>
<td>MS: 75 percentile minimum mathematical aptitude. PhD: 75 percentile minimum mathematical aptitude; 50 percent minimum advanced.</td>
</tr>
<tr>
<td>English</td>
<td>MA, PhD</td>
<td>1</td>
<td>1</td>
<td>MA 3.00 GPA; BA in English or equivalent for TESL or Technical Writing. PhD: 3.50 GPA; MA in English.</td>
</tr>
<tr>
<td>Geography</td>
<td>MS</td>
<td>2</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Geology</td>
<td>MS</td>
<td>1</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>History</td>
<td>MA</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td></td>
<td>Ph</td>
<td>1</td>
<td>1</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Mass Communications</td>
<td>MS</td>
<td>1</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MS, PhD</td>
<td>1</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Applied Mathematics</td>
<td>MS</td>
<td>1</td>
<td>2</td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Microbiology</td>
<td>MS, PhD</td>
<td>1</td>
<td>2</td>
<td>No minimum score.</td>
</tr>
<tr>
<td>Philosophy</td>
<td>MA</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
Advisory Committees

Natural Sciences
Herbert Bruneau, Zoology
Margaret Ewing, Zoology
Andrea Arquitt, Food, Nutrition and Institution Administration

Aviation and Space Sciences
Jo Campbell, Applied Behavioral Studies
Kenneth Wiggins, Aviation and Space Education
Cecil Dugger, Aviation and Space Education
Paul Harper, Speech Communication
Robert England, Applied Behavioral Studies

Gerontology
Ed Arquitt, Sociology
Joe Weber, Family Relations and Child Development
Gladeen Alfred, Applied Behavioral Studies
Robert Nolan, Occupational and Adult Education

Interdisciplinary Sciences
Larry Perkins, Sociology
Kent Olson, Economics
Russell Dobson, Curriculum and Instruction
Elizabeth John, Journalism and Broadcasting

Plan of Study. The minimum number of hours required to earn the master's degree in natural and applied sciences varies by the area selected and varies from 30 to 36 credit hours. The format for each is delineated below. At least 21 credit hours must be at the graduate level (courses numbered 5000 or above). Up to nine graduate credit hours can be transferred from a regionally-accredited graduate program with consent of the advisory committee.

Time limit. Students are expected to complete the requirements for the degree within four years after filing the plan of study (i.e., the semester in which the 17th hour of the program is completed).

Research Component. For the thesis plan, the student must present a proposal to the advisory committee for approval prior to completing 22 hours in the program. The thesis should be investigative research. The written proposal should contain an introduction, literature review, and the methodology and research questions or hypotheses proposed to develop the thesis. A copy of the approved thesis proposal must be filed with the program director. A grade of "B" or better must be earned in thesis hours.

In the areas allowing a creative component, the topic must be approved by the advisory committee. Students must earn a grade of "B" or above in the course designated as the creative component.

<table>
<thead>
<tr>
<th>MAJOR</th>
<th>DEGREE</th>
<th>GRE GEN SUB</th>
<th>GMAT</th>
<th>MILLER ANALOGY (MAT)</th>
<th>ADDITIONAL REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics</td>
<td>MS, PhD</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Science</td>
<td>MA</td>
<td>1</td>
<td></td>
<td></td>
<td>See department admission requirements.</td>
</tr>
<tr>
<td>Psychology</td>
<td>PhD</td>
<td>1</td>
<td></td>
<td></td>
<td>No minimum score. Need departmental application &amp; 3 letters of recommendation.</td>
</tr>
<tr>
<td>Sociology</td>
<td>MS, PhD</td>
<td>2</td>
<td></td>
<td></td>
<td>GRE required if GPA less than 3.00.</td>
</tr>
<tr>
<td>Speech</td>
<td>MA</td>
<td>2</td>
<td></td>
<td></td>
<td>3.00 GPA minimum &amp; 3 letters of recommendation. (English is second language, TSE: 220 minimum; TOEFL: 550 minimum.)</td>
</tr>
<tr>
<td>Speech</td>
<td>(Speech Communication)</td>
<td>1</td>
<td></td>
<td></td>
<td>English is second language, TSE: 220 minimum; TOEFL: 550 minimum.)</td>
</tr>
<tr>
<td>Statistics</td>
<td>MS, PhD</td>
<td>1</td>
<td></td>
<td></td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Wildlife and Fisheries Ecology</td>
<td>MS, PhD</td>
<td>1</td>
<td>1</td>
<td></td>
<td>Aptitude: MS-1000, PhD-1150. Advanced: MS-600, PhD-650.</td>
</tr>
<tr>
<td>Zoology</td>
<td>MS, PhD</td>
<td>1</td>
<td>1</td>
<td></td>
<td>Same as Wildlife and Fisheries Ecology.</td>
</tr>
</tbody>
</table>

BUSINESS ADMINISTRATION

<table>
<thead>
<tr>
<th>Area</th>
<th>Degree</th>
<th>GRE GEN SUB</th>
<th>GMAT</th>
<th>MILLER ANALOGY (MAT)</th>
<th>Additional Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>MS</td>
<td>1</td>
<td></td>
<td></td>
<td>GPA 3.25 or higher and GMAT score of minimum 525.</td>
</tr>
<tr>
<td>Business Administration</td>
<td>MBA</td>
<td>1</td>
<td></td>
<td></td>
<td>3 letters of recommendation and an essay.</td>
</tr>
<tr>
<td>Business Administration</td>
<td>PhD</td>
<td>1</td>
<td></td>
<td></td>
<td>GMAT required, high GPA, &amp; 3 letters of recommendation.</td>
</tr>
<tr>
<td>Business Administration</td>
<td>(Accounting)</td>
<td>1</td>
<td></td>
<td></td>
<td>3 letters of recommendation.</td>
</tr>
<tr>
<td>Business Administration</td>
<td>(Finance)</td>
<td>1</td>
<td></td>
<td></td>
<td>3 letters of recommendation.</td>
</tr>
<tr>
<td>Business Administration</td>
<td>(Management)</td>
<td>1</td>
<td></td>
<td></td>
<td>3 letters of recommendation.</td>
</tr>
<tr>
<td>Business Administration</td>
<td>(Marketing)</td>
<td>1</td>
<td></td>
<td></td>
<td>3 letters of recommendation.</td>
</tr>
<tr>
<td>Economics</td>
<td>MS, PhD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EDUCATION

<table>
<thead>
<tr>
<th>Area</th>
<th>Degree</th>
<th>GRE GEN SUB</th>
<th>GMAT</th>
<th>MILLER ANALOGY (MAT)</th>
<th>Additional Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Behavioral Studies</td>
<td>MS, PhD, EdD</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counseling and Student Personnel</td>
<td>MS, EdD, EdS</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum and Instruction</td>
<td>MS, EdD, EdS</td>
<td>1</td>
<td></td>
<td></td>
<td>No entrance exam.</td>
</tr>
<tr>
<td>Educational Administration</td>
<td>MS, EdD, EdS</td>
<td>3</td>
<td>3</td>
<td></td>
<td>GRE: 950, MAT: 47.</td>
</tr>
<tr>
<td>Health, Physical Education and Leisure</td>
<td>MS</td>
<td>1</td>
<td>1</td>
<td></td>
<td>No minimum score.</td>
</tr>
<tr>
<td>Higher Education</td>
<td>MS, EdD, EdS</td>
<td>3</td>
<td>3</td>
<td></td>
<td>GRE: 950, MAT: 47.</td>
</tr>
<tr>
<td>Occupational and Adult Education</td>
<td>MS, EdD, EdS</td>
<td>3</td>
<td>3</td>
<td></td>
<td>MS: no entrance exam. EdD &amp; EdD: MAT or GRE.</td>
</tr>
<tr>
<td>Marketing Education</td>
<td>MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Education</td>
<td>MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology Education</td>
<td>MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade &amp; Industrial Education</td>
<td>MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MAJOR | DEGREE | GRE GEN SUB | GMAT ANALOGY (MAT) | ADDITIONAL REQUIREMENTS
--- | --- | --- | --- | ---
ENGINEERING | | | |
Agricultural Engineering | MAgeE, MS, PhD | | | No entrance exam.
Architecture | MArch | | | See specific school admission requirements.
Architectural Engineering | MArchE | | | 
Chemical Engineering | MChemE, MS, PhD | 2 | | 
Civil Engineering | MCivi, MS, PhD | | | No entrance exam.
Environmental Engineering | MEEnviE, MS | | | No entrance exam.
Electrical Engineering | MElecE, MS, PhD | | | No entrance exam.
General Engineering | MGenE, MS, PhD | 2 | | 
Industrial Engineering and Management | MIE&Mgmt, MS, PhD | | | No entrance exam.
Mechanical Engineering | MMechE, MS, PhD | 2 | | 

HOME ECONOMICS | | | |
Design, Housing and Merchandising | MS | | | 
Family Relations and Child Development | MS | 1 (for FRCD emphasis) | 3 | No entrance exam for other areas.
Food, Nutrition and Institution Administration | MS | | | 
Home Economics (Design, Housing and Merchandising; Family Relations and Child Development; Food, Nutrition, and Institution Administration) | PhD | 1 (for FRCD emphasis) | 3 | No entrance exam for other areas.
Home Economics Education and Community Services | MS, EdD | | | No entrance exam.

INTERDISCIPLINARY | | | |
Environmental Science | MS, PhD | | | No entrance exam; 575 TOEFL.
Food Science | MS, PhD | | | No entrance exam.
Manufacturing Systems Engineering | MMSE | | | 
Natural and Applied Sciences | MS | 3 | | Gerontology only; GRE: 900; MAT: 35.

VETERINARY MEDICINE | | | |
Physiological Science | MS, PhD | 1 | 1 | GPA last 60 hrs. B.S. X GRE must equal 3000 or above for MS or 3150 or above for PhD.
Veterinary Parasitology | MS, PhD | 1 | 1 | GPA last 60 hrs. x General score on GRE must equal 3000 or above for unqualified admission.
Veterinary Pathology | MS, PhD | 1 | | No minimum score.

In the areas allowing a report, students are expected to apply the theory and research methodology that they have acquired in the program to a topic approved by the advisory committee. In most cases, this topic will relate to the individual's professional interests. Students do not enroll in report hours until a topic is approved. A student must earn a grade of "B" or better for the report.

Core Courses. There are no specific core courses for the degree in natural and applied sciences. Courses required or recommended are listed in the bulletin for the program.

Programs of Study. Natural Sciences. This program is for science teachers and other individuals who desire a broader program than that offered in departmental programs. The goal of the program is to provide the student with a breadth of training in science and related areas.

To enter the program, the student should have a minimum of 30 credit hours of science, with biological, physical, and earth sciences represented. An undergraduate grade-point average of 3.00 is required for unqualified admission. Students with a grade-point average below 3.00, but 2.50 or better, may be admitted on a probationary basis.

Three degree plans are available in this program. The student must complete either a 30-credit-hour plan with a six-credit-hour research thesis, a 32-credit-hour plan with a two-credit-hour report, or a 36-semester-credit-hour plan with a creative component. Particular courses are not specified for the degree, the student's advisory committee assists the student in selecting appropriate courses. However, not more than two-thirds of the courses for the degree may be taken in any one of the areas of biological, physical, or earth sciences.

Aviation and Space Sciences. Students will take a minimum of 11 credit hours of core courses from research, organizational theory, and administration and management. The remaining courses, to total a minimum of 32 credit hours, will come from the multidisciplinary course list or additional courses from the core list. Other courses may substitute upon approval from the advisory committee. Students may select the research component-thesis, report, or creative component-with approval of the advisory committee. Six credit hours are allowed for the thesis option and two credit hours are allowed for the research report. Credit hours allowed for the creative component varies.
Manufacturing Systems Engineering

This interdisciplinary master's degree is designed to address the needs of manufacturing managers, particularly those in small- to medium-size firms, in all aspects of manufacturing systems, including management as well as the hardware aspects of manufacturing.

This program, jointly sponsored by the Schools of Electrical and Computer Engineering, Industrial Engineering and Management, and Mechanical and Aerospace Engineering, produces graduates capable of direct contributions in the design, selection, and implementation of up-to-date computerized manufacturing systems.

To pursue this degree a student enrolls in one of the three schools listed above and is advised by a faculty member in that school. The student's advisory committee is composed of members from each of the three schools. For more information students should contact the program coordinator in the School of Industrial Engineering.

Agriculture

The Master of Agriculture degree is designed for students interested in graduate professional training with a strongly applied research orientation. The degree is offered in the following areas of emphasis: agricultural education, agronomy, animal science, entomology, forestry, horticulture and landscape architecture, and plant pathology.

The purpose of this degree is to provide a program which will give additional specialization in technical fields as well as increased breadth of training. Students who are interested in working toward the Ph.D. degree should follow the regular Master of Science degree program. This program will provide a greater breadth of study than the Master of Science program. Emphasis will be given to practical application of the technical aspects of the discipline as well as discipline interrelationships. The principal focus, however, is on an applied research concept and a broader program than is normally available with the specialized research degree.

A baccalaureate degree in agriculture or a related field is required for admission. The candidate must meet requirements for acceptance into the Graduate College and be recommended by the departmental graduate committee responsible for the program.

General Regulations

RESPONSIBILITIES

All graduate students are expected to read and to comply with the written regulations. The regulations presented in the Catalog may be supplemented by written departmental or program requirements available at departmental offices.

General regulations in the following sections relate to requirements for admission, enrollment, and academic standing. Succeeding sections outline requirements for the following degrees: master's, Doctor of Philosophy, Doctor of Education, and Specialist in Education. Particular attention should be given to timing and substantive requirements for matriculation, especially admission, the plan of study, residence, language proficiency, research and thesis or report, and graduation. The regulations are prescribed by the Graduate Faculty with the intent of assuring the quality graduate programs and effective interaction of Graduate Faculty members and graduate students.

A request for waiver of any regulation must be made in writing to the dean of the Graduate College for presentation to the Graduate Council for action. Such a request must be approved by the major adviser. The student and the major adviser should present sufficient information to allow the Graduate Council to evaluate reasons for requesting a waiver and to make a decision concerning departure from normal Graduate College regulations.

ADMISSION TO THE GRADUATE COLLEGE

Qualified graduates of colleges and universities of recognized standing are eligible to seek admission to the Graduate College. Applicants must submit the completed application form to the Graduate College, with official transcripts of all academic work and degrees received.

1. The student should request all institutions previously attended to send two copies of the official transcript to the Graduate College, Oklahoma State University.

2. To be official, the transcript must show the complete scholastic record, bear the official seal of the institution, and be signed by the issuing officer.

To assure adequate time, application forms and transcripts should be received by the Graduate College at least 30 days prior to expected enrollment. Transcripts and other credentials become the property of the University and must remain on file in the Office of the Registrar.

Standardized Test Scores

Many departments require standardized test scores, such as the Graduate Record Examination. Applicants must contact the appropriate department head for information regarding departmental requirements for these tests. (Refer to the Table "Graduate Admission Requirements.")

International Student Admission

International applicants are expected to submit applications, financial affidavits, transcripts, and results of the Test of English as a Foreign Language (TOEFL) examination by March 1 for fall enrollment and by July 1 for spring enrollment. TOEFL. As a condition of admission to regular graduate study at OSU, all persons for whom English is a second language are required to present a score of 550 or above on the TOEFL regardless of the number of semesters or terms completed in other institutions of higher education, including OSU, or prior enrollment in English language programs. Some departments require a score above 550. Students should contact the department for specific TOEFL requirements. Persons who present a TOEFL score of 500 or above and who demonstrate unusual academic promise may be admitted to graduate study on probationary status, but the number of such persons will not exceed two percent of the regularly enrolled graduate student population of the previous fall semester.

Submission of the TOEFL score with the application is never waived.

English Proficiency Test for International Students. Before international students who have no prior course work from a U.S. university can complete their first enrollment at Oklahoma State University, they are
required to take the Test of English Language Proficiency (TELP) administered by the University Testing and Evaluation Service. This test, scheduled on campus before each semester and summer session, is required in addition to the TOEFL. Should a student’s composite score on the TELP indicate a need for further work in English, the student is required to enroll in a non-credit English course until the deficiency is removed. This enrollment is concurrent with courses enrolled in for the advanced degree.

Spoken English Proficiency for Employment. OSU policy requires all persons for whom English is a second language to demonstrate an acceptable level of spoken English before being employed as a member of the faculty, as a teaching assistant or teaching associate, or for other instructionally related assignments. Employment requires a score of 220 or above on the Test of Spoken English (TSE). This test may be taken on campus or at any of the many testing sites provided by the Educational Testing Service. This test score is used as a condition of employment, not a condition for admission to the Graduate College.

Types of Admission

Oklahoma State University uses the 4.00 scale to calculate grade-point averages; that is, an “A” yields four points per credit hour, a “B” yields three points, a “C” yields two points, a “D” yields one point, and an “F” yields zero points. If an applicant’s prior college or university uses a different scale, the grade-point average must be converted to the 4.00 scale to determine whether the applicant meets Oklahoma State University grade-point admission requirements for one of the types of admission. Therefore, all references to grade-point averages are based on a 4.00 scale. References to credit hours are to semester credit hours.

When the applicant’s file is complete, the faculty in the department or program of the student’s area of interest is asked to review the material and recommend an admission status to the dean of the Graduate College. The final decision for admission to the Graduate College is determined by the dean on the basis of the department’s recommendations, prior academic performance of the applicant, and availability of space, facilities, and faculty advisers in the program. The decision is conveyed to the applicant by means of a letter. Admission to the Graduate College means only that the student will be permitted to enroll in courses through the Graduate College. It does not necessarily imply that the student has been or will be admitted to a program leading to an advanced degree or that the student will be able to obtain a graduate degree. Opportunities for receiving graduate credit and graduate degrees are dependent on the admission status granted to the student.

Unqualified Admission. Students planning to work toward a graduate degree in a recognized graduate program may be admitted without qualification provided they meet all Graduate College and departmental requirements.

1. Admission to full graduate status in a degree program is contingent on the presentation of an undergraduate degree from an accredited college or university, an acceptable academic record and the recommendation of the major department and the dean of the Graduate College.

2. If a student fails to provide proof of the receipt of an undergraduate degree or fails to remain in good standing academically, academic participation may be terminated or the status may be changed to probationary or unclassified.

Special Student Status. An applicant may be admitted to the Graduate College as a special student if he or she does not have immediate plans to become a graduate student, but wants to take graduate courses, prerequisites or other courses. International students with an F-1 visa may not enroll as special students.

1. A special student must meet all of the academic requirements described for unqualified admission except that he or she need not be admitted or recommended for admission by a department or program.

2. The student is responsible for filing a new application for admission to the Graduate College should he or she wish to become a degree candidate. The application will be evaluated by faculty of the department or program and the dean of the Graduate College to ascertain admissibility to the degree program.

3. The work must be recommended by the faculty with the rank of associate professor or above or equivalent rank at the time of completing the requirements for a degree.

Graduate Student Professional. Students with a bachelor’s degree or equivalent level of academic attainment who wish to improve their professional competence by participating in post-baccalaureate study in a professional degree program maybe admitted in the status of Graduate Student-Professional.

1. Students admitted in this status, but desiring admission to a graduate degree program, must submit a new application.

2. The student should be aware that only selected courses taken in this category, as recommended by the major adviser and approved by the Graduate College, may be used to meet requirements for advanced degrees such as the Master of Science, Doctor of Education, or Doctor of Philosophy. Not all courses used to meet requirements for a professional degree can be used to meet requirements for graduate degrees.

Unclassified Graduate Student Status. Students with bachelor’s degrees from accredited colleges or universities may be admitted as “unclassified students” in the Graduate College on the basis of educational services, other than degrees, that can be extended to them in meeting their individual needs.

1. The category of unclassified graduate students may include individuals working on teacher certification and post-baccalaureate objectives other than a graduate degree.

2. No credit earned under this classification can be used toward a graduate degree at Oklahoma State University.

Probation or Provisional Status. Applicants who are graduates of accredited colleges and universities who have attained less than an acceptable grade-point average in all undergraduate work may be admitted provisionally or on probation on recommendation of the major department at Oklahoma State University and concurrence by the dean of the Graduate College. Alternatively, a student who has been in full graduate standing or special student status may be placed on probation or continued provisionally if academic performance in courses taken in a graduate status at Oklahoma State University falls below a “B” average. Students with acceptable academic records but without the background necessary for a particular degree program may also be admitted provisionally. Students admitted provisionally or on a probationary basis may be granted full graduate standing after performing at an acceptable academic level. Failure to meet required academic levels while in a probationary status will result in dismissal from the Graduate College. International students holding F-1 visas are not eligible for provisional admission.

Transfer of Graduate Credits

Transfer of graduate credits to the Graduate College is possible only when the student was formally admitted to the graduate college at another accredited institution and the course(s) is certified as graduate credit by that institution.

The work must be recommended by the adviser as a part of an approved plan of study. The acceptance of transferred work requires the recommendation of the student’s advisory committee and approved by the dean of the Graduate College at the time a program of study is planned. A maximum of nine credit hours with a grade of “B” or better in each course can be accepted as transfer credits toward a master's degree.

Departmental or Program Requirements

Departmental or program requirements are in addition to the general requirements. The decision is made within the department or major field regarding the substitution for OSU requirements of similar work taken at another institution.

A student who desires further information about departmental and admission and curricular requirements should write to the department in which he or she desires to major.

Readmission to the Graduate College

A prospective student must enroll for courses at OSU within a year after his or her admission date to retain active status. A graduate or prospective student who does not enroll within one year must re-apply for admission and will then be subject to the regulations in effect at the time of readmission.

Faculty Members. No member of the faculty with the rank of associate professor or above or equivalent rank at the time of completing the requirements may be granted a degree from this institution. This regulation applies to faculty members in the Schools of Engineering holding the rank of assistant professors or above.
AUDIT

A student who does not wish to receive credit in a course may, with the approval of the student's adviser and the instructor of the course concerned, attend the class strictly as a visitor. A student who applies to audit a course promises that he or she will not use the audit to avoid the rule against excessive hours, and that he or she will not petition or ask in any way for the privilege of taking an examination to obtain credit after he or she has audited the course. (Laboratory courses, private music lessons and art courses are not open for audit)

A student who has established a permanent record at OSU may have the audited course recorded on his or her transcript with the word "audit" appearing in place of the grade. Not later than one week after the close of that semester, the student must present to the Office of the Registrar the instructor's copy of the audit form with a signed statement from the instructor, on the reverse side, that it is appropriate for the course to be recorded on the student's transcript. Any individual 65 years or older may audit a class at no charge.

TUITION REGULATIONS

Tuition and Fees
Refer to the section on "Costs."

Tuition Waiver Policy for Graduate Assistants and Spouses

The University will waive the nonresident tuition for graduate assistants who are employed at least one-fourth time in instruction, research or extension.

The nonresident tuition for summer will be waived even if the student is not employed as a graduate assistant for that period if the student held an assistantship for the preceding spring semester.

A spouse of a nonresident student employed as a graduate assistant for at least one-quarter time is also eligible for a nonresident tuition waiver.

ENROLLMENT

Students with a bachelor's degree are expected to register in the Graduate College unless they want to obtain another bachelor's degree. If they register as an undergraduate, the courses taken cannot be given graduate credit at a later date.

Students in the Graduate College may enroll in a course which does not carry graduate credit or audit courses if such courses are recommended by an adviser and approved by the dean of the Graduate College.

Students who desire to enroll concurrently in another institution or by extension at OSU must secure approval in advance from the dean of the Graduate College. Forms are available in the Graduate College.

An advance fee payment is required of all new and readmitted students.

Students will be permitted to enroll (late fee will be charged) or to add a course through the first week of a regular semester or third day of a summer session. For short courses, students will not be permitted to enroll after the first day of the course.

Enrollment Procedure
1. Enrollment forms (trial schedules) are available in the Graduate College.
2. Advanced degree candidates have their trial schedule forms approved and signed by their departmental advisers and take them to the Graduate College prior to enrolling. Special and unclassified students have their trial schedule forms approved in the Graduate College prior to enrolling.
3. After having the trial schedule forms approved in the Graduate College, graduate students complete the enrollment process in the Sectioning Room located on the fourth floor of the Student Union.

Phone-in Enrollment
Individuals residing outside Stillwater may use the phone-in enrollment procedure. Graduate students may enroll by phone if they have been accepted into the Graduate College, are continuing students, or have taken courses at OSU. Students must have no academic or financial holds on their enrollment and must have the required advance fee payment on file in the Office of the Bursar.

Oklahoma residents may use the toll-free number: 1-800-522-6809; others may use 405-744-6368.

Minimum and Maximum Hours of Enrollment

Any graduate student using the facilities and faculty resources of the University must be enrolled. Every graduate student is expected to satisfactorily complete no fewer than six semester credit hours during the academic year (fall, spring, and summer) until the degree is awarded. Students may satisfy this requirement by enrolling for the required hours during any one term or by continuous enrollment during the three terms. The total registration shall not exceed 18 credit hours for a semester or nine credit hours for a summer session. Regardless of the number of hours taken, a student may not count more than 16 credit hours taken in the fall or spring semester nor more than nine semester credit hours earned in a summer session toward a degree. For short-course sessions less than eight weeks in length, enrollment shall not exceed one credit hour for each week. Students in the Graduate College who are not taking any courses for graduate credit may register for the number of credit hours recommended by their advisers and approved by the dean of the Graduate College.

Enrollment Regulations for Graduate Assistants and Fellows.
Graduate students employed by the University part time may register only for the amount of credit recommended by the head of the major department and approved by the dean of the Graduate College. In general, students employed 22 hours per week may not register for more than 10 semester credit hours of course work for a semester and five hours during a summer session. Other employment will permit registration for an appropriate number of hours. Graduate students whose employment is such that results will be used for a thesis, however, may register for additional thesis credit as recommended by the research adviser and approved by the dean of the Graduate College.

Enrollment for Graduate Assistants and Fellows.
Graduate students employed by the University part time may register only for the amount of credit recommended by the head of the major department and approved by the dean of the Graduate College. In general, students employed 22 hours per week may not register for more than 10 semester credit hours of course work for a semester and five hours during a summer session. Other employment will permit registration for an appropriate number of hours. Graduate students whose employment is such that results will be used for a thesis, however, may register for additional thesis credit as recommended by the research adviser and approved by the dean of the Graduate College.

Enrollment During the Research Phase

Because enrollment reflects the involvement of University faculty members, the graduate student must maintain continuous enrollment in thesis and/or problems courses for credit during the entire research phase of the program. Such enrollment is not limited by the maximum number of credit hours of thesis which may apply toward a degree.

Employment Enrollment

<table>
<thead>
<tr>
<th>Full/Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% or full time</td>
<td>more than 4 hours</td>
</tr>
<tr>
<td>75% or 3/4 time</td>
<td>more than 7 hours</td>
</tr>
<tr>
<td>60% or more than 8 hours</td>
<td></td>
</tr>
<tr>
<td>50% or more than 10 hours</td>
<td></td>
</tr>
<tr>
<td>30-40% more than 12 hours</td>
<td></td>
</tr>
<tr>
<td>25% or more than 13 hours</td>
<td></td>
</tr>
</tbody>
</table>

Full-time or Half-time Status. Full-time or half-time status of graduate students is:

Regular Semester
- Full-time: 9 or more hrs.
- Half-time: 4-8 hrs.

Summer Session
- Full-time: 4 or more hrs.
- Half-time: 2-3 hrs.

The Office of the Registrar considers employment as a teaching or research assistant when determining enrollment status. A student holding a 0.50 FIE graduate assistant appointment, and enrolled in a minimum of six hours during the fall or spring semester, and three hours during the summer semester will be certified as a full-time graduate student.

Enrollment and Financial Assistance. For the purpose of receiving monetary assistance through the Office of Student Financial Aid, the amount of the award is related only to the total number of credit hours in which enrolled. Certifiable enrollment status, based upon a combination of enrollment and employment, only assists with the deferral of loan repayments, never qualification for aid, which is based solely on enrollment.
All students who plan to complete the requirements for a degree must be enrolled in not fewer than two hours of thesis credit (or course work credit for master’s candidates only) for the semester or summer session in which the examination is scheduled, or other requirements are met.

**Academic Regulations**

Refer also to the sections on “Adding Courses,” “Dropping Courses,” and “Withdrawing from the University.”

**Graduate-credit Courses**

Courses numbered 5000 and above are primarily for graduate students, and only graduate students and seniors who have obtained prior approval may enroll. The majority of courses on the master’s and doctoral plans of study will be 5000 level and above.

Courses numbered 3000 and 4000 that are identified by an asterisk in the "Course Listings" of the Catalog can be taken by graduate students. Graduate students enrolled in these courses will be considered as taking the courses for graduate credit and expected to fulfill all academic requirements as proposed by the professor.

Courses numbered 3000 and 4000 may be used to meet requirements for a graduate degree on the plan of study if approved by the student’s advisory committee and the dean of the Graduate College. Courses that are not identified by an asterisk may not be used to fulfill requirements for a graduate degree.

**Academic Standing**

**Minimum Grade Requirements.** A grade-point average of "B" (3.00) is required to (1) maintain good standing as a graduate student and (2) meet requirements for a degree. In determining whether a student has met minimum requirements for a degree, grades for courses on the plan of study are averaged separately from other courses not on the plan of study. A student must have a "B" grade average in all courses on the plan of study; and also, a "B" grade average in thesis, report, and problem courses. After a student has completed a course, it cannot be dropped from the plan because of a low grade, unless the change in the plan of study is first approved in writing by the student’s adviser, and then by the dean of the Graduate College.

A course with a grade below "C" cannot be used as part of the minimum number of semester credit hours required for the degree.

Some departments have more stringent requirements. The major department should be consulted concerning minimum grade requirements.

**Academic Warning and Strict Academic Probation.** If any student in good academic standing earns a grade-point average for a semester less than 3.00, a "warning" letter is sent as a reminder that the Graduate College requires a minimum grade-point average of 3.00. The semester grade-point average is based upon total enrollment, regardless of course level or whether the courses were taken as prerequisites or for personal interest.

If the grade-point average falls below 3.00 again in the next semester, the student is placed on "strict academic probation." On "strict academic probation," a minimum grade of "B" must be earned in every class. Failure to earn a "B" in each class results in dismissal from the University.

When a student on "strict academic probation" violates the conditions of probation, (not earning a minimum of a "B" grade in every class), the departmental adviser is informed that the student cannot enroll any further without the consent of the department. At this point, the Graduate College accepts a departmental recommendation which permits the student to continue or accepts their agreement that the student should no longer continue. If the student continues, he or she remains on strict academic probation.

A second violation of strict academic probation generally results in the student being informed by the Graduate College that he or she can no longer continue in degree program. Departments have requested continuance for unusual circumstances (i.e. a death in the family or illness).

Students are notified by letter each semester in which grades indicate a lack of satisfactory progress toward a degree.

**Dismissal.** Any student who is dismissed from the Graduate College for academic reasons, will have the notation "Academic Suspension" printed on the official OSU transcript. Graded for Thesis (5000) and Dissertation (6000). The grade of "R," indicating research progress, may be assigned to thesis (5000) and dissertation (6000) courses until the research is finished. Advisers also have the option of assigning a letter grade each semester. By assigning the grade of "R," the adviser acknowledges that the student has made progress on thesis or dissertation research. Upon completion of the thesis or dissertation, the adviser submits a Change of Grade form to have the final grade entered for the thesis or dissertation.

Pass-No Pass Grading System. The "P" or "NP" grade refers only to the final grade in the course as recorded by the Office of the Registrar. Homework will be assigned and evaluated, and tests and examinations will be given. Students taking the course on a "P" or "NP" basis are expected to satisfy these course requirements. "P" indicates a grade equivalent to an "A," "B," or "C" while "NP" indicates a grade equivalent to "D," "F" or "WF."

Graduate students may take a course utilizing the "Pass-No Pass" grading system with the consent of their major advisers and the dean of the Graduate College, but courses taken under this system cannot be used on a plan of study to meet graduate degree requirements unless the following requirements are met:

A graduate student wishing to use a course taken on a "Pass-No Pass" basis on his or her plan of study to meet degree requirements must submit a letter along with the Trial Schedule form at the time of enrollment to the major adviser. The major adviser will consider the request and if approved, the letter and Trial Schedule form will be submitted to the dean of the Graduate College for approval. A student who chooses the Pass-No Pass grading system may change to the usual grading system with the consent of his or her major adviser and the dean of the Graduate College any time prior to the last date on which a course may be added. Once the deadline has passed, a student will not be permitted to change his or her choice of grading system.

Grade Appeals. A student may appeal a grade given by an instructor in a case in which he or she believes the grade awarded is inconsistent with announced grading policy. The student should consult the Student Rights and Responsibilities pamphlet or contact the Office of the Vice-President for Academic Affairs and Research for information regarding initiating the appeals process.

**Grades for Thesis (5000) and Dissertation (6000).** The grade of "R," indicating research progress, may be assigned to thesis (5000) and dissertation (6000) courses until the research is finished. Advisers also have the option of assigning a letter grade each semester. By assigning the grade of "R," the adviser acknowledges that the student has made progress on thesis or dissertation research. Upon completion of the thesis or dissertation, the adviser submits a Change of Grade form to have the final grade entered for the thesis or dissertation.

Pass-No Pass Grading System. The "P" or "NP" grade refers only to the final grade in the course as recorded by the Office of the Registrar. Homework will be assigned and evaluated, and tests and examinations will be given. Students taking the course on a "P" or "NP" basis are expected to satisfy these course requirements. "P" indicates a grade equivalent to an "A," "B," or "C" while "NP" indicates a grade equivalent to "D," "F" or "WF."

Graduate students may take a course utilizing the "Pass-No Pass" grading system with the consent of their major advisers and the dean of the Graduate College, but courses taken under this system cannot be used on a plan of study to meet graduate degree requirements unless the following requirements are met:

A graduate student wishing to use a course taken on a "Pass-No Pass" basis on his or her plan of study to meet degree requirements must submit a letter along with the Trial Schedule form at the time of enrollment to the major adviser. The major adviser will consider the request and if approved, the letter and Trial Schedule form will be submitted to the dean of the Graduate College for approval. A student who chooses the Pass-No Pass grading system may change to the usual grading system with the consent of his or her major adviser and the dean of the Graduate College any time prior to the last date on which a course may be added. Once the deadline has passed, a student will not be permitted to change his or her choice of grading system.

Grade Appeals. A student may appeal a grade given by an instructor in a case in which he or she believes the grade awarded is inconsistent with announced grading policy. The student should consult the Student Rights and Responsibilities pamphlet or contact the Office of the Vice-President for Academic Affairs and Research for information regarding initiating the appeals process.

**Application for Diploma-Graduation**

At the time of enrollment for the last semester or summer session of work toward a degree, the student completes an Application for Diploma card. Completion of that card initiates clearance procedure toward graduation by the Graduate College and the Office of the Registrar. The student is billed for the graduation fee along with tuition. If all requirements for the degree are not met according to deadlines specified in the Graduate College Calendar, the student must complete a new Application for Diploma at the time of re-enrollment. Applications for degrees will not be accepted after the first two weeks of a regular semester or the first week of a summer session.

**Records and Transcripts**

All permanent records are stored in the Office of the Registrar in Whitehurst Hall. Requests for grades, transcripts and diplomas should be made to that Office.

A graduate student who does not complete the requirements in time to receive the degree at the end of the semester may secure a statement from the Office of the Registrar when all requirements for the degree have been satisfied. Such a statement will not be issued until all grades for the semester have been recorded.

**MASTER’S DEGREE PROGRAMS**

Accounting, MS
Agricultural Economics, MS
Agricultural Education, MS
Agricultural Engineering, MAgE, MS
Agricultural, MAg (Agricultural Economics, Agricultural Education, Agronomy, Animal Science, Entomology, Forest Resources, Horticulture and Landscape Architecture, and Plant Pathology)
Agronomy, MS
Animal Science, MS
Applied Behavioral Studies, MS
Applied Mathematics, MS
Architectural Engineering, MArchE
Architecture, MArch
Biochemistry, MS
Botany, MS

OKLAHOMA STATE UNIVERSITY 135
# SUMMARY OF PROCEDURE FOR MASTER'S DEGREE

Dean-Dean of Graduate College; GCO-Graduate College Office; DH-Department Head; TA-Temporary Adviser, Adviser-Person designated by department head to advise; Comm-Committee

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>INITIATE THROUGH</th>
<th>APPROVED BY</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Apply for admission. (Follow instruction Sheet carefully. If relevant, see &quot;Requirements for Admission to Teacher Education&quot; in the “College of Education.”)</td>
<td>Dean</td>
<td>Dean</td>
<td>Complete 30 days prior enrollment. (60 days prior for international students.)</td>
</tr>
<tr>
<td>2. Read &quot;General Regulations&quot; and &quot;Master's Degree&quot; sections, then secure registration materials in the Graduate College.</td>
<td>GCO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Secure assignment of a temporary adviser from department head of major department and enroll for the first semester.</td>
<td>DH &amp; TA</td>
<td>Dean</td>
<td></td>
</tr>
<tr>
<td>4. Plan program with advice of department head or designated Graduate Faculty member and submit plan of study.</td>
<td>Adviser</td>
<td>Dean</td>
<td>Prior to enrolling for the 17th credit for resident students and prior to enrolling for the 9th credit hour for extension students.</td>
</tr>
<tr>
<td>5. Proceed with course work and research assignment.</td>
<td>Adviser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Complete the Application for Diploma card at the time of enrollment; make any corrections needed on plan of study.</td>
<td>GCO</td>
<td></td>
<td>At the time of enrollment for the semester or term in which the degree is to be conferred. (Application good for stated degree date only. File new application if conferring of degree is delayed.)</td>
</tr>
<tr>
<td>7. Take comprehensive written examinations as required by major department.</td>
<td>Adviser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Complete research, prepare final draft copy of thesis or report and submit it at least one week prior to the final examination, along with a copy of the abstract, to each member of the examining committee and to the Graduate College. The final draft must be complete and legible. Ordinary proofreading marks and minor handwritten additions, changes, etc. are permitted, but the copy should be in such condition that it can be read easily and understood clearly. The format must follow the Graduate College Style Manual recommendations, unless a waiver is requested by the adviser. Any requests for waivers should be submitted along with the thesis or report final draft copy. The thesis title must be correct and cannot be changed since it will appear in the Commencement Program. The adviser's signature must be on the copy submitted to the Graduate College.</td>
<td>Dean</td>
<td>Adviser</td>
<td>Deadlines published yearly.</td>
</tr>
</tbody>
</table>
9. Examining committee members formally acknowledge receipt of the thesis or report and concur in request to administer final examination to candidate (Form T-1).

   INITIATE THROUGH APPROVED BY TIME

   Procedure 1. Pay binding fee in the Bursar's Office and return to the Graduate College after the Application for Diploma card has been processed.

   INITIATE THROUGH APPROVED BY TIME

   Procedure 10. Committee chairperson notifies Graduate College of the examination results immediately following conclusion of the examination (Form T-2).

   Procedure 11. Candidate makes changes in thesis or report as required by examining committee and by the Graduate College. Advisory committee members sign final copies of thesis or report. The Graduate College makes the final decision on acceptance of the thesis or report Candidate submits at least three approved copies of thesis and six approved copies of the abstract, along with clearance check (Form T-3) signed by the student and the adviser. Adviser certifies that all requirements have been met for non-thesis or report student. Forms for scheduling the final examination and notification of the completion of departmental requirements can be obtained from the Graduate College after the Application for Diploma card has been processed.

   Procedure 12. Pay binding fee in the Bursar's Office and return form to the Graduate College.

   Procedure 13. Arrange for cap, gown and hood at Student Union Bookstore and attend Commencement.

Abbreviations:

Veterinary Parasitology, MS
Veterinary Pathology, MS
Wildlife and Fisheries Ecology, MS
Zoology, MS

MA Master of Arts
MAG E Master of Agricultural Engineering
MA Master of Agriculture
MArch Master of Architecture
MArchE Master of Architectural Engineering
MBA Master of Business Administration
MChemE Master of Chemical Engineering
MCivilE Master of Civil Engineering
MEECE Master of Electrical Engineering
MEnvirE Master of Environmental Engineering
MGenE Master of General Engineering
MIE&Mgmt Master of Industrial Engineering & Management
MMSE Master of Manufacturing Systems Engineering
M MechE Master of Mechanical Engineering
MS Master of Science

MEnvirE Master of Environmental Engineering
MMEC Master of Mechanical Engineering
MMSW Master of Manufacturing Systems Engineering
MIE&Mgmt Master of Industrial Engineering & Management
MGenE Master of General Engineering

Oklahoma State University

9. Examining committee members formally acknowledge receipt of the thesis or report and concur in request to administer final examination to candidate (Form T-1).

   INITIATE THROUGH APPROVED BY TIME

   Procedure 10. Committee chairperson notifies Graduate College of the examination results immediately following conclusion of the examination (Form T-2).

   Procedure 11. Candidate makes changes in thesis or report as required by examining committee and by the Graduate College. Advisory committee members sign final copies of thesis or report. The Graduate College makes the final decision on acceptance of the thesis or report Candidate submits at least three approved copies of thesis and six approved copies of the abstract, along with clearance check (Form T-3) signed by the student and the adviser. Adviser certifies that all requirements have been met for non-thesis or report student. Forms for scheduling the final examination and notification of the completion of departmental requirements can be obtained from the Graduate College after the Application for Diploma card has been processed.

   Procedure 12. Pay binding fee in the Bursar's Office and return form to the Graduate College.

   Procedure 13. Arrange for cap, gown and hood at Student Union Bookstore and attend Commencement.

Abbreviations:

Veterinary Parasitology, MS
Veterinary Pathology, MS
Wildlife and Fisheries Ecology, MS
Zoology, MS

MA Master of Arts
MAG E Master of Agricultural Engineering
MA Master of Agriculture
MArch Master of Architecture
MArchE Master of Architectural Engineering
MBA Master of Business Administration
MChemE Master of Chemical Engineering
MCivilE Master of Civil Engineering
MEECE Master of Electrical Engineering
MEnvirE Master of Environmental Engineering
MGenE Master of General Engineering
MIE&Mgmt Master of Industrial Engineering & Management
MMSE Master of Manufacturing Systems Engineering
M MechE Master of Mechanical Engineering
MS Master of Science

MEnvirE Master of Environmental Engineering
MMEC Master of Mechanical Engineering
MMSW Master of Manufacturing Systems Engineering
MIE&Mgmt Master of Industrial Engineering & Management
MGenE Master of General Engineering

Oklahoma State University

9. Examining committee members formally acknowledge receipt of the thesis or report and concur in request to administer final examination to candidate (Form T-1).

   INITIATE THROUGH APPROVED BY TIME

   Procedure 10. Committee chairperson notifies Graduate College of the examination results immediately following conclusion of the examination (Form T-2).

   Procedure 11. Candidate makes changes in thesis or report as required by examining committee and by the Graduate College. Advisory committee members sign final copies of thesis or report. The Graduate College makes the final decision on acceptance of the thesis or report Candidate submits at least three approved copies of thesis and six approved copies of the abstract, along with clearance check (Form T-3) signed by the student and the adviser. Adviser certifies that all requirements have been met for non-thesis or report student. Forms for scheduling the final examination and notification of the completion of departmental requirements can be obtained from the Graduate College after the Application for Diploma card has been processed.

   Procedure 12. Pay binding fee in the Bursar's Office and return form to the Graduate College.

   Procedure 13. Arrange for cap, gown and hood at Student Union Bookstore and attend Commencement.

Abbreviations:

Veterinary Parasitology, MS
Veterinary Pathology, MS
Wildlife and Fisheries Ecology, MS
Zoology, MS

MA Master of Arts
MAG E Master of Agricultural Engineering
MA Master of Agriculture
MArch Master of Architecture
MArchE Master of Architectural Engineering
MBA Master of Business Administration
MChemE Master of Chemical Engineering
MCivilE Master of Civil Engineering
MEECE Master of Electrical Engineering
MEnvirE Master of Environmental Engineering
MGenE Master of General Engineering
MIE&Mgmt Master of Industrial Engineering & Management
MMSE Master of Manufacturing Systems Engineering
M MechE Master of Mechanical Engineering
MS Master of Science

MEnvirE Master of Environmental Engineering
MMEC Master of Mechanical Engineering
MMSW Master of Manufacturing Systems Engineering
MIE&Mgmt Master of Industrial Engineering & Management
MGenE Master of General Engineering

Oklahoma State University
Plan of Study. The preliminary plan of study for the degree must be filed in the Graduate College prior to enrollment for the 17th graduate credit hour for students working for a master's degree in residence, or prior to enrollment for the ninth graduate credit hour for students pursuing graduate study at Graduate Centers. The student should secure the plan of study forms from the Graduate College, develop the plan with the adviser, and file three copies in the Graduate College. All copies must be signed by the adviser and by two other members of the graduate faculty in the major department, and approved by the dean of the Graduate College.

Students seeking a master's degree in Teacher Education must be admitted to the master's curriculum in Teacher Education before submitting a plan of study.

The plan of study is subject to modification as the student progresses, but all changes must have the approval of the adviser. A final, accurate plan of study must be filed in the Graduate College by the end of the second week of the semester or session in which the degree is to be conferred.

Graduate credit used to obtain one master's degree cannot be counted toward another master's degree.

Major Subject or Field. A major field of study may cross departmental lines subject to the decision of the major department. Graduate students must enroll in no fewer than 21 semester credit hours of 5000- and 6000-level courses through Oklahoma State University as presented on the plan of study to meet requirements for the master's degree.

Before receiving a master's degree, the student must have completed in the major department or field a minimum of 16 semester credit hours above the prerequisites required for graduate work in that subject or field. A student who lacks 10 semester credit hours or fewer of the prerequisites required by the major department or field may count these credits as part of the requirements of the degree if the courses are on a complete study plan approved by the head of the department before it is presented to the dean of the Graduate College.

Minor Subject or Field. To minor in a subject or field, a student must complete, as a minimum, enough semester credit hours as a graduate student to satisfy, with undergraduate credits, the requirements for an undergraduate major in that department. The minor may vary from six to 15 semester credit hours.

A student may minor in two departments if the requirements are met for each and the major department and both minor departments approve.

Language Requirements. A candidate for the master's degree may be required to demonstrate a reading knowledge of a modern foreign language. Any such requirement of the department is included on the plan of study and is to be filled out at the time the preliminary plan is approved by the student's adviser.

If a foreign language is required, the head of the major department must certify that it has been met before a final examination can be scheduled.

A foreign language requirement for a master's degree may be met either by examination or by college credit, according to individual department requirement.

Written Examinations. Some departments require a written examination covering the major and minor fields. It is usually taken before the thesis or report has been completed. Arrangements for taking the examination should be made with the department at least three weeks in advance. The written examination must be passed before a final examination is scheduled.

A student who fails all or part of the written examination should consult the chairman of the examination committee to find out what must be done before taking another examination.

If a student does not complete requirements for the master's degree within two years after passing the written examination, a new plan of study must be submitted and another written examination passed.

Thesis or Report. Any student working on a thesis or report should purchase a copy of the Graduate College Style Manual, published by and available from the Graduate College. A thesis or report must conform to the specifications set forth in this manual. Variations may be made from the specifications only if requested by the head of the department and approved by the dean of the Graduate College.

After completing the research, the student prepares a final draft copy (complete and legible final draft) of the proposed thesis or report, and submits a copy, along with the abstract, to each member of the examining committee and to the Graduate College. When the final draft copy is submitted, the title must be final, and any request for waiver of the Graduate College Style Manual recommendations must be made. The proof copy must be signed by the adviser and be submitted to the Graduate College no later than the stated deadline date (see "Graduate College Calendar").

Permission to administer the final examination is requested from the dean of the Graduate College on Form T-1 which must contain the signature of each member of the examining committee, indicating that each has received the thesis or report and concurs in the request to administer the final examination. The adviser uses Form T-1 to propose a specific time and place for the examination.

The final examination is primarily a defense of the thesis or report. If the defense is judged inadequate, a decision on whether to permit re-examination will be made by the examining committee. Examinations are open to all members of the Graduate Faculty, and may be attended by anyone else who obtains the permission of the committee.

The committee will notify the Graduate College immediately of results of the final examination on Form T-2. Following satisfactory completion of the final examination, the candidate will make changes in the thesis or report as required by the committee and by the Graduate College, and submit it in final form signed by the committee to the Graduate College.

Thesis. The student must submit to the Graduate College three copies of the thesis with six copies of the abstract no later than the stated deadline (see "Graduate College Calendar"). These final copies of the thesis are accompanied by Form T-3. The thesis copies become the property of the University. Two copies are filed in the library and one copy is kept by the major department. There is a binding fee, payable at the Office of the Bursar.

Report. The student must submit to the Graduate College one copy of a report, with six copies of the abstract. It must be bound in a pressboard cover as described in the Graduate College Style Manual. By paying the binding fee, the student may have extra copies of the report bound by the University. The final copy of the report, accompanied by Form T-3, must be submitted to the Graduate College no later than the stated deadline (see "Graduate College Calendar").

Final Examination. If the thesis or report option is used, the dean of the Graduate College arranges with the major department for the final examination after the draft copy of the thesis or report has been filed in the Graduate College and distributed as described in the preceding section. The final examination may be oral or written or both.

A student who fails to pass either a written or oral final examination should consult the chairman of the examining committee. Another examination cannot be given for two months after a failure, and a department may limit the number of times that the examination may be repeated.

If the non-thesis option is used, the department head or adviser must notify the dean of the Graduate College that the student has satisfactorily completed all departmental requirements. If the department requires a final oral and/or written examination, forms for arranging the examination can be obtained from the Graduate College. Both positive and negative results must be reported to the Graduate College.

Time limit. Students are expected to complete the requirements for the master's degree within four years after filing the plan of study (i.e., the semester in which the 17th hour of the program was completed).

To determine whether or not courses taken more than four years before the anticipated date of the degree can be counted toward the degree, the student should consult the departmental graduate adviser. Such courses cannot be accepted except on a complete plan of study which gives the date that the requirements for the degree are to be completed. They must be a part of a study plan and can be approved only for a specified time.

Continuous Enrollment. A graduate student must maintain continuous enrollment during the entire research phase of the program. Such enrollment is not limited by the maximum number of credit hours of thesis which may apply to the degree. Continuous enrollment can be met with six credit hours per year or two credit hours in each of the fall, spring and summer semesters.

Failure to maintain continuous enrollment requires submission of a new application for readmission to the graduate program. If readmitted, all requirements in effect at the time of readmission, must be completed.

Special Requirements for Selected Master’s Degrees. Requirements for the Master of Agriculture, Master of Architecture, Master of Architectural Engineering, Master of Business Administration, and Master of Engineering are described in detail elsewhere in the Catalog. Each degree has requirements that are program specific and exceed the minimal requirements specified by the Graduate College.
DOCTOR OF PHILOSOPHY DEGREE PROGRAMS (Ph.D.)

Agricultural Economics
Agricultural Engineering
Animal Breeding
Animal Nutrition
Applied Behavioral Studies
Biochemistry
Botany
Business Administration
Chemical Engineering
Chemistry
Civil Engineering
Computer Science
Crop Science
Economics
Electrical Engineering
English
Entomology
Environmental Science
Food Science
General Engineering
History
Home Economics (Design, Housing and Merchandising; Family Relations and Child Development; Food, Nutrition, and Institution Administration)
Industrial Engineering and Management
Mathematics
Mechanical Engineering
Microbiology
Physics
Physiological Science
Plant Pathology
Psychology
Sociology
Soil Science
Statistics
Veterinary Parasiotology
Veterinary Pathology
Wildlife and Fisheries Ecology
Zoology

The Doctor of Philosophy degree is granted in recognition of high achievement in scholarship and independent investigation. The candidate must prove his or her acceptability by (1) successfully completing a series of courses comprising a plan of study, (2) passing various examinations demonstrating academic competence; (3) carrying out a research program under supervision and preparing an acceptable dissertation, and (4) demonstrating initiative, creative intelligence, and ability to plan and carry out research in his or her chosen field.

Basic Requirements. The Doctor of Philosophy degree requires six semesters of full-time graduate study (a minimum of 90 semester credit hours) beyond the bachelor’s degree, or four semesters of full-time graduate study (a minimum of 60 semester credit hours) beyond the master’s degree. This includes a minimum of 15 credits for the dissertation (6000). Students may use 90 hours beyond the bachelor’s degree as a degree total only if admitted directly into the doctoral program from the bachelor’s degree.

Admission to a Program. A student who wishes to earn a Doctor of Philosophy degree may be required to take examinations based on a year of graduate study, or to produce other evidence of scholarly achievement consistent with expected academic competence in a field of specialization. Contact the head of the major department for the requirements for admission to the doctoral program.

The instructions for admission, registration, and other information given under “General Regulations” are also applicable to those who are working toward doctoral degrees.

Notice of Intention. Before taking additional courses after completing the requirements for a master’s degree, a student who expects to work toward the Doctor of Philosophy degree should file a Notice of Intention form to become a candidate for the degree. The Notice of Intention form may be obtained in the Graduate College office and is filed in that office.

The Notice of Intention must be filed prior to mid-semester of the first semester of graduate enrollment beyond the master’s degree or prior to the second summer of enrollment for those who enroll only during summer sessions. Unless the form is submitted to the Graduate College, the courses taken may possibly not be accepted for the degree.

Temporary Adviser. Upon receiving the Notice of Intention of a student to become a candidate for the Ph.D. degree, the dean of the Graduate College will designate a member of the Graduate Faculty to serve as temporary adviser to the student. The temporary adviser will arrange the collection of information about the student and assist him or her in the early selection of courses.

Advisory Committee. Upon recommendation of the head of the major department or of the graduate committee of the department, an advisory committee of not fewer than four members will be appointed by the dean of the Graduate College. The duties of the advisory committee consist of (1) advising the student, (2) assisting the student in preparing a plan of study, (3) preparing and administering the qualifying examination, (4) assisting in planning and conducting the research, (5) supervising the writing of and passing upon the thesis, and (6) conducting the final examination.

The chairperson of the advisory committee must be a member of the Graduate Faculty. Under special circumstances, the dean of the Graduate College may approve a substitute chairperson. Each doctoral committee must have at least one member of the Graduate Faculty from outside the student’s major department.

The student should consult the members of the advisory committee frequently and keep them informed on the progress of his or her work.

Preliminary Conference. As soon as the student is notified that an advisory committee has been appointed, the student should arrange with the chairperson for a conference with the committee. During the conference, the preparation and qualifications of the student for graduate work will be discussed and appropriate plans made for future study.

Plan of Study. After the preliminary conference, the student should complete the plan of study for the degree, have it approved by the advisory committee, file two copies in the Graduate College and two copies with the advisory committee, and retain one for the student’s personal file.

The plan must include all the acceptable graduate work that has been completed and all that will be taken for the doctoral degree. The plan should include approximately 75 percent of courses at the 5000-6000 level and at least 13 hours thesis credit. Forms for preparing the plan of study will be sent to the student by the Graduate College. The plan of study must include a minimum of 60 hours beyond the master’s degree. Courses from the master’s degree are not listed on the doctoral plan of study.

Because the acceptance of work which the student desires to use toward the degree rests with the advisory committee, it is important to plan a complete program and have it approved by the dean of the Graduate College as soon as possible.

The plan of study must be submitted prior to the pre-enrollment date during the second full semester of enrollment (beyond the master’s degree).

Changes in the plan can be made with the approval of the advisory committee and the dean of the Graduate College. A final, accurate, and approved plan must be filed at the beginning of the semester or summer session in which the degree is to be conferred.

Minor Subject or Field. As a means of giving depth and breadth to their doctoral programs, most departments require work in a minor field or at least a selection of extra-departmental courses. To minor in a subject or field, as a minimum, the graduate student must complete graduate level work beyond requirements for an undergraduate degree in the minor department. A department in which a student indicates a minor must certify to the dean of the Graduate College the satisfactory completion of requirements for a minor.

Character of Work The satisfactory completion of course work (see “General Regulations”) is only one requirement for receiving the degree. The student must also: (1) pass a qualifying examination, (2) prepare an acceptable dissertation, (3) demonstrate the ability to do independent study, (4) show qualities of leadership in the chosen field, (5) pass a final examination, and (6) comply with other requirements of the major department.

Residence Requirements. A minimum of 30 semester credit hours must be taken in residence at Oklahoma State University. All credit accepted toward the degree beyond the master’s degree must be on the student’s plan of study and be approved by the advisory committee.

One year of the last two years must be spent in continuous residence at this institution.

With prior approval by the advisory committee and the dean of the Graduate College, the student may do research for the degree in absentia. Research conducted while not in residence is under the supervision of the major adviser and the advisory committee.

Courses taken at the University Center at Tulsa (UCT) while registered through Oklahoma State University are considered residence credit. Courses taken from the other three cooperating universities are considered to be transfer credit.

Language Requirement. Foreign language or other proficiency requirements may be specified to meet the need for specific skills and areas of knowledge that facilitate research and contribute to wider understanding. Specific requirements are determined
**SUMMARY OF PROCEDURE FOR DOCTORAL DEGREE**

Dean-Dean of Graduate College; DH-Department Head; TA Temporary Adviser, Comm-Committee; Ch-Chair of Committee

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>INITIATE THROUGH APPROVED BY</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Apply for admission. (Follow instruction sheet carefully.)</td>
<td>Dean</td>
<td>Complete 30 days prior to enrollment (60 days prior for international students).</td>
</tr>
<tr>
<td>2. Secure assignment of temporary adviser from major department head and enroll.</td>
<td>DH &amp; TA, Dean</td>
<td>Prior to mid-semester of first semester of graduate enrollment or second summer enrollment.</td>
</tr>
<tr>
<td>3. File Notice of Intention to become a candidate for the degree. Obtain forms in Graduate College.</td>
<td>Desu</td>
<td></td>
</tr>
<tr>
<td>4. Provide temporary adviser with information as required to evaluate admissibility to program.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. On favorable action of appropriate Graduate Faculty group with respect to admission to program, request the appointment of advisory committee.</td>
<td>TA, Dean</td>
<td></td>
</tr>
<tr>
<td>6. Prepare plan of study with assistance of committee. Submit two approved copies to Graduate College and two to the advisory committee.</td>
<td>Comm, Dean</td>
<td>Prior to enrollment date (see &quot;University Calendar&quot;) during second full semester of enrollment beyond master’s degree.</td>
</tr>
<tr>
<td>7. Fulfill foreign language requirement or attain other required proficiencies.</td>
<td>Prior to qualifying examination.</td>
<td></td>
</tr>
<tr>
<td>8. Complete major portion of course work and plan thesis program with committee. Submit copy of approved thesis outline to Graduate College.</td>
<td>Ch, Dean</td>
<td>Prior to qualifying examination.</td>
</tr>
<tr>
<td>9. Apply for and take qualifying examination.</td>
<td>Ch, Dean</td>
<td>As early in the doctoral program as feasible.</td>
</tr>
<tr>
<td>10. Submit results of qualifying examination and/or application for admission to candidacy (Form G-4).</td>
<td>Comm, Dean</td>
<td>Not less than six months prior to Commencement in which degree will be conferred.</td>
</tr>
<tr>
<td>11. Verify accuracy of plan of study in Graduate College. Secure committee approval for any necessary changes. Check on six-year time limit for the degree.</td>
<td>Comm, Dean</td>
<td>At the beginning of the semester or summer session in which degree is to be conferred.</td>
</tr>
</tbody>
</table>

**Qualifying Examination.** The qualifying examination is comprehensive, covering the entire area of the student’s graduate study. The examination may be all written or part written and part oral. The examination must be passed not less than six months before the degree is granted (see "Admission to Candidacy"). The results of the examination are reported to the Graduate College on Form G-4.

Before taking the qualifying examination, the student must have an approved plan of study on file in the Graduate College, have the approval of the advisory committee, and the approval of the dean of the Graduate College.

In case of failure to pass any part of this examination, the student will be notified in writing of the conditions under which another examination can be taken. A second examination may not be given earlier than four months after a failure.

If the results of the second examination are unsatisfactory, no other examination may be given without the approval of the Graduate Council.

**Admission to Candidacy.** A student must be admitted to candidacy at least six months before the commencement in which the Doctor of Philosophy degree will be received.

Before being admitted to candidacy, the student must have passed the qualifying examination, and have an approved plan of study and thesis outline filed in the Graduate College.

**Dissertation.** A dissertation (doctoral thesis) is required of each doctoral candidate. The subject of the dissertation must be approved by the advisory committee and the dissertation is prepared under the direction of members of the committee or a special thesis committee approved by the advisory committee chairperson.

The dissertation must follow specifications in the *Graduate College Style Manual*, available from the Graduate College. All dissertation copies must have the necessary approval signatures before submission to the Graduate College.

After completing the research, the student prepares a final draft copy (complete and legible) of the proposed dissertation and submits a copy, along
<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>INITIATE THROUGH APPROVED BY</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Complete the Application for Diploma card at the time of enrollment.</td>
<td>Dean</td>
<td>At the time of enrollment for the semester or session in which degree is to be conferred. (Application is good for stated time only. File new application if conferring of degree is delayed.)</td>
</tr>
<tr>
<td>13. Complete research, prepare final draft copy of dissertation and submit it at least one week prior to the examination, along with a copy of the abstract, to each member of the committee and to the Graduate College. The final draft must be complete and legible. Ordinary proofreading marks and minor handwritten additions, changes, etc., are permitted, but the copy should be in such condition that it can be read easily and understood clearly. The format must follow the Graduate College Style Manual recommendations, unless a waiver is requested by the major adviser. Any request for waivers should be submitted along with the dissertation final draft copy. The dissertation title must be correct and cannot be changed since it will appear in the Commencement Program. The adviser must sign the copy submitted to the Graduate College.</td>
<td>Ch Comm Dean</td>
<td>Deadlines published yearly.</td>
</tr>
<tr>
<td>14. Advisory committee members formally acknowledge receipt of dissertation and concur in request to administer final examination to candidate (Form T-1).</td>
<td>Comm Dean</td>
<td></td>
</tr>
<tr>
<td>15. Committee chairperson notifies Graduate College of the examination results immediately following conclusion of the examination (Form T-2).</td>
<td>Ch Dean</td>
<td></td>
</tr>
<tr>
<td>16. Make any changes in dissertation required by examining committee and by the Graduate College. Advisory committee members sign final copies of dissertation. The dissertation is submitted to the Graduate College, which makes the final decision on acceptance of the dissertation. Candidate submits at least three approved copies of the dissertation and six approved copies of the abstract along with clearance check (Form T-3) signed by the student and the major adviser.</td>
<td>Ch Comm Dean</td>
<td>Deadlines published yearly.</td>
</tr>
<tr>
<td>17. Pay binding and microfilming fees in Bursar's Office; complete questionnaire and microfilming agreement form and return all forms to the Graduate College.</td>
<td></td>
<td>Form to be obtained from the Graduate College after dissertation has been formally accepted by that office.</td>
</tr>
<tr>
<td>18. Rent or buy cap, gown, and hood at Student Union Bookstore and attend Commencement.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*OKLAHOMA STATE UNIVERSITY* 141
Basic Requirements. The minimum time required for the doctor's degree is six semesters of full-time graduate study (a minimum of 90 semester credit hours) beyond the bachelor’s degree, or four semesters of full-time graduate study (a minimum of 60 semester credit hours) beyond the master’s degree. Courses at the 5000 and 6000 level should make up approximately 75 percent of the plan of study and must include 10 hours for the doctoral dissertation. The student must register for the dissertation in the same way he or she registers for other courses. Students may use 90 hours beyond the bachelor’s degree as a degree total only if admitted directly into the doctoral program from the bachelor’s degree.

Admission to a Program. The student can secure an application form from the Graduate College along with information concerning areas and programs of study offered. The application will be evaluated by the faculty of the appropriate department and by the Graduate College and qualified applicants will be admitted provisionally for study toward the Doctor of Education degree. The student planning to seek the Doctor of Education degree must complete a personnel folder which includes a vita, letters of recommendation as requested by the College of Education, transcripts, protocols of scholarly work and test scores. Test scores required are the Miller Analogies Test and/or the aptitude portion of the Graduate Record Examination. A student should contact his or her department head to determine which tests are required and to obtain materials concerning the personnel folder.

When the student’s personnel folder is complete, the graduate review committee will review the student’s records and recommend to the dean of the Graduate College whether or not the student should be admitted. The dean of the Graduate College will inform the student in writing of admission status.

Notice of Intention. Before taking additional courses after completing the requirements for a master’s degree, a student who expects to work for the Doctor of Education degree should file a Notice of Intention in the Graduate College to become a candidate for the degree. Unless the form is filed, courses taken may not count toward the degree. The Notice of Intention is to be filed prior to mid-semester of the first semester of enrollment beyond the master’s degree, or prior to enrollment beyond 30 credit hours of course work above the master’s degree.

Temporary Adviser. Upon receiving a Notice of Intention for a student to become a candidate for the Doctor of Education degree, the dean of the Graduate College will designate a member of the Graduate Faculty to serve as temporary adviser to the student. The temporary adviser will guide the student in the selection of courses for the first semester or summer session.

Advisory Committee. If the recommendation of the graduate review committee is favorable, the dean of the Graduate College will appoint an advisory committee of not fewer than four members. The duties of the advisory committee consist of (1) advising the student, (2) assisting the student in preparing a program of study, (3) preparing and administering the qualifying examination, (4) assisting in planning and conducting the research, (5) supervising the writing and subsequent approval of the dissertation, and (6) conducting the final examination.

Preliminary Conference. As soon as the student is notified that an advisory committee has been appointed, a conference should be arranged with the chairperson and committee. Before the conference the student must see that the chairperson has transcripts of previous work and other information that will be needed in the conference. During the conference the preparation of the student for graduate study will be discussed and plans made for future study.

Plan of Study. After the preliminary conference, the student should complete the plan of study for the degree, and have five copies approved and signed by the advisory committee. One copy will be retained by the student, two copies left with the major adviser, and two copies sent to the Graduate College.

The plan must include all the acceptable graduate work that has been completed and all that will be taken for the degree. The plan should include approximately 75 percent of courses at the 5000-6000 level and 10 hours thesis credit. Forms for preparing the plan of study will be sent to the student by the Graduate College. The plan of study must include a minimum of 60 hours beyond the master’s degree. Courses from the master’s degree are not listed on the doctoral plan of study.

Because the acceptance of work which the student desires to use toward the degree rests with the advisory committee, it is important to plan a complete program and have it approved by the dean of the Graduate College as soon as possible.
Failure to maintain continuous enrollment requires submission of a new application for readmission to the graduate program. If readmitted, all requirements of the Graduate College and the department in effect at the time of readmission, must be completed.

SPECIALIST IN EDUCATION DEGREE PROGRAMS (Ed.S.)

Counseling and Student Personnel
Curriculum and Instruction
Educational Administration
Higher Education
Occupational and Adult Education

The Specialist in Education degree is conferred as an appropriate recognition of achievement as evidenced by:

1. Successful professional performance in the area of the student's specialization.
2. Satisfactory completion of a program of graduate study of approximately two academic years.
3. Satisfactory performance on examinations designed to reveal the student's understanding of the field of specialization and its relation to other areas.
4. Preparation of a thesis dealing with some aspect of concern to the student's profession and its defense before a committee of the Graduate Faculty.

Programs leading to the Specialist in Education degree are offered at present only with the Teacher Education Group.

Admission. The student can secure application forms from the dean of the Graduate College along with information concerning areas and programs of study offered. The application will be evaluated by the faculty of the appropriate department and by the Graduate College, and qualified applicants will be admitted provisionally for study toward the Specialist in Education degree.

Admission to a Program. The student planning to seek the Specialist in Education degree must complete a personnel folder which includes a vita and letters of recommendation as requested by the College of Education, transcripts, protocols of scholarly work and test scores. Test scores required are the Miller Analogies Test and/or the aptitude portion of the Graduate Record Examination. A student should contact the department head to determine which tests are required and obtain materials concerning the personnel folder.

When the student's personnel folder is complete, the graduate review committee for Specialist in Education programs will review the student's records and recommend to the dean of the Graduate College whether or not the student should be admitted to the program. The dean of the Graduate College will inform the student by letter regarding admission.

Notice of Intention. Before taking additional courses after completing the requirements for a master's degree, a student who expects to work toward the Specialist in Education degree should file in the Graduate College a Notice of Intention to become a candidate for the degree. The Notice of Intention form can be obtained from the Graduate College. Unless the form is filed, courses taken may not count toward the degree. The "Notice of Intention" is to be filed prior to mid-semester of the first semester of enrollment beyond the master's degree, or prior to the second summer enrollment.

Temporary Adviser. Upon receiving a Notice of Intention from a student to become a candidate for the Specialist in Education degree, the dean of the Graduate College will designate a member of the Graduate Faculty to serve as temporary adviser to the student. The temporary adviser will guide the student in the selection of courses for the first semester or summer session.

Advisory Committee. If the recommendation of the graduate review committee is favorable, the dean of the Graduate College will appoint an advisory committee nominated by the student wishes to specialize. This committee (1) conducts the preliminary examination and conference, (2) approves the proposed plan of study, (3) supervises the student's progress in the program, (4) supervises on the study, and (5) arranges for and conducts the final examination.

Plan of Study. As soon as practicable after the appointment of the committee, the student will arrange with the chairperson for a conference for the purpose of planning a program of study. The plan of study will include all graduate work required to complete the program. It will be filed, in duplicate, in the Graduate College. This plan may be modified with the approval of the advisory committee and the dean of the Graduate College.
GRADUATE FACULTY

The four groups of the Graduate Faculty are full members and emeriti, and associate members and emeriti. Members of the Graduate Faculty, their degrees held and degree-granting institutions, and most recent academic title at OSU are listed below. Dates following indicate: first, the year that the faculty member was appointed to his or her present position; second, the year that the faculty member was initially appointed to a position at Oklahoma State University. A single date indicates that these two coincided. Dates in parentheses represent periods not at OSU.

Members

MOHAMED ABDEUHADY, B.C.E. (Ein-Shams Univ., Cairo), M.S. (Univ. of Illinois), Ph.D. (ibid); P.E.; Professor of Civil Engineering 1971, 1963.

BRUCE J. ACKERSON, B.S. (Univ. of Nebraska), M.S. (Univ. of Colorado), Ph.D. (ibid); Associate Professor of Physics; 1986, 1977.


MOHAMED SAMIR AHMED, B.S. (Cairo Univ.), M.S. (Ein-Shams Univ.), Ph.D. (Univ. of Oklahoma); P.E.; Associate Professor of Civil Engineering 1984, 1980.

DOUGLAS B. AICHELE, BA (Univ. of Missouri), M.A. (ibid), Ed.D. (ibid); Regents Professor and Head of the Department of Curriculum and Instruction; 1980, 1969.

ZUHAIR F. AL-SHAIEB, B.S. (Damascus Univ.), M.S. (ibid), Ph.D. (ibid); Professor of Geology; 1981, 1972.


DALE E. ALSPACH, B.S. (Univ. of Akron), Ph.D. (Ohio State Univ.); Regents Professor of Mathematics; 1990, 1979.

ORLEY M. AMOS, JR, BA (Wichita State Univ.), M.S. (Iowa State Univ.), Ph.D. (ibid); Professor of Economics; 1988, 1979.

JEFFREY ANDERSON, BA (Rutgers Univ.), Ph.D. (Univ. of Florida); Assistant Professor of Horticulture and Landscape Architecture; 1986.

KIM B. ANDERSON, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Professor of Agricultural Economics; 1990, 1982.

MICHAEL APPLEGETE, BA (Brigham Young Univ.), Ph.D. (Iowa State Univ.); Professor of Economics; 1990, 1974.

LYNN K ARNEY, B.S. (Univ. of Tulsa), M.E. (Northeastern Oklahoma State Univ.), Ed.D. (O.S.U.); Associate Professor of Educational Administration and Higher Education; 1988, 1985.

RICHARD ARTHUR AUKERMAN, B.S. (Univ. of North Dakota), M.S. (ibid), Ph.D. (ibid); Professor of Management; 1987, 1980.

LINDA AUSTIN, BA (State Univ. of New York, Stony Brook), M.S. (Univ. of Illinois, MA (Univ. of Rochester), Ph.D. (ibid); Associate Professor of English, 1990, 1985.


GUY BAILEY, BA (Univ. of Alabama); M.S. (ibid), Ph.D. (Univ. of Tennessee); Professor and Head of the Department of English; 1990.

CAROLYN JUNE BAUER BAIRD, B.S. (O.S.U.), M.S. (ibid), Ed.D. (ibid); Professor of Curriculum and Instruction; 1985, 1966.

JOHN THOMAS BALE, JR, B.S. (O.S.U.), M.S. (ibid), Ed.D. (Univ. of Oklahoma); Professor of Administrative Services and Associate Dean of the College of Business Administration; 1977, 1967.

JOHN A. BANTLE, BA (Eastern Michigan Univ.), M.S. (ibid), Ph.D. (Ohio State Univ.); Professor of Zoology and Associate Dean for Research of the College of Arts and Sciences; 1991, 1976.

ROBERT W. BARKER, B.S. (Northeastern Oklahoma State Univ.), Ph.D. (O.S.U.); Associate Professor of Entomology 1980, 1976.

DANIEL P. BARTELL, B.S. (Eastern Illinois Univ.), M.S. (Purdue Univ.), Ph.D. (Univ. of Kentucky); Professor and Head of the Department of Entomology; 1989.

GERALD R BASS, B.S.Ed. (Univ. of North Dakota), M.Ed. (ibid), Ed.D. (ibid); P.E.; Associate Professor of Educational Administration and Higher Education; 1988, 1985.

RICHARD P. BATTEIGER, BA (Ohio Univ.), M.A. (Univ. of Florida), Ph.D. (ibid); Associate Professor of English; 1985.

KENNETH JOHN BELL, B.S. (Case Inst of Technology), M.C.E. (Univ. of Delaware), Ph.D. (ibid); P.E.; Regents Professor and Kerr-McGee Chair of Chemical Engineering 1977, 1961.

PATRICIA A. BELL, B.S. (O.S.U.), M.S. (ibid), Ph.D. (Univ. of Texas); Associate Professor of Sociology 1987, 1981.

RICHARD C. BERBERET, BA (Carroll College), Ph.D. (Univ. of Nebraska); Professor of Entomology, 1980, 1971.

KENNETH DARRELL BERLIN, BA (North Central College, Illinois), Ph.D. (Univ. of Illinois); Regents Professor of Chemistry, 1971, 1960.

DANIEL J. BERNARDO, B.S. (Univ. of California, Davis), Ph.D. (Washington State Univ.); Associate Professor of Agricultural Economics; 1985.

JOE G. BERRY, B.S. (O.S.U.), M.S. (ibid), Ph.D. (Kansas State Univ.); Professor of Animal Science; 1988, 1980.

GARRY R BICE, B.S. (Cornell Univ.), M.S. (ibid), Ph.D. (Ohio State Univ.); Professor of Occupational and Adult Education; 1990, 1985.

WILLIAM ROGER BILES, BA (Univ. of Illinois, Urbana), M.S. (ibid), Ph.D. (Univ. of Illinois, Chicago); Associate Professor of History; 1986, 1984.

HANS RUDOLF BILGER, Ph.D. (Univ. of Basel); Professor of Electrical and Computer Engineering 1975, 1963.

JAMES BRYAN BLAIR, B.S. (West Virginia Univ.); Ph.D. (Univ. of Virginia); Professor and Head of the Department of Biochemistry; 1990.

JAMES T. BLANKEMEYER, A.B. (Temple Univ.), MA (ibid), Ph.D. (ibid); Associate Professor of Psychological Science; 1982, 1977.

JAMES E. BOSE, B.S. (O.S.U.), M.S.(ibid), Ph.D. (ibid); Professor and Director of the Division of Engineering Technology 1977, 1960.

DONNA H. BRANSON, BA (Rosary College), M.S. (Univ. of Rhode Island), Ph.D. (Michigan State Univ.); Professor of Design, Housing and Merchandising 1987, 1983.

MICHAEL BRANSON, B.S. (Illinois Benedictine College), MA (Arizona State Univ.), Ph.D. (ibid); Associate Professor of Industrial Engineering and Management; 1985.

JAMES E. BREAZILE, B.S. (Univ. of Missouri), D.V.M. (ibid), Ph.D. (Univ. of Minnesota); Professor of Physiological Science and Director of Laboratory Animal Resources; 1986, 1978.

ANTHONY EDWARD BROWN, BA (Baylor Univ.), M.P.A. (Univ. of Tennessee), Ph.D. (ibid); Associate Professor of Political Science and Coordinator of Programs, University Center at Tulsa; 1988, 1980.

DONALD N. BROWN, BA (Harvard Univ.), MA (Univ. of Arizona), Ph.D. (ibid); Professor of Sociology, 1982, 1971.

ROBERT MILTON BROWN, BA (Univ. of Houston), MA (ibid), Ph.D. (Univ. of Maryland), Associate Professor of English; 1990.

ALAN W. BRUNKEN, B. Arch. (O.S.U.), M. Arch. (Massachusetts Inst of Technology); Professor of Architecture; 1986, 1973.

GERALD HENRY BRUSEWITZ, B.S. (Univ. of Wisconsin), B.S.M.E. (ibid), M.S. (ibid), Ph.D. (Michigan State Univ.); Professor of Agricultural Engineering 1980, 1969.

DAVID S. BUCHANAN, B.S. (North Dakota State Univ.), M.S. (Univ. of Nebraska), Ph.D. (ibid); Professor of Animal Science; 1988, 1980.

KAY SATHER BULL, B.S.B.A. (Roosevelt Univ.), M.B.A. (ibid), Ph.D. (Univ of Wisconsin); Professor of Applied Behavioral Studies; 1988, 1979.
JOHN LEROY FOLKS, BA (O.S.U.), M.S. (ibid), Ph.D. (Iowa State Univ.); Professor and Head of the Department of Statistics; 1981, 1961.

WARREN T. FORD, BA (Wabash College), Ph.D. (Univ. of California, Los Angeles); Professor of Chemistry; 1983, 1978.

DAVID G. Fournier, BA (Univ. of Missouri, Kansas City), MA (ibid), Ph.D. (Univ. of Minnesota); Associate Professor of Family Relations and Child Development; 1983, 1978.

GARY L. FOUTCH, B.S. (Univ. of Missouri, Rolla), M.S. (ibid), Ph.D. (ibid); P.E.; Professor of Chemical Engineering 1989, 1980.

JOSEPH CARL FOX, B.S. (Brigham Young Univ.), M.S. (ibid), Ph.D. (Montana State Univ.); Associate Professor of Veterinary Parasitology, Microbiology and Public Health; 1983, 1978.

STANLEY F. FOX, M.S. (Univ. of Illinois), M.Phil. (Yale Univ.), Ph.D. (ibid); Associate Professor of Zoology, 1982, 1977.

JOYCE S. FRISKE, B.S. (O.S.U.), M.Ed. (Univ. of Texas, Austin), Ph.D. (ibid); Associate Professor of Curriculm and Instruction; 1988, 1983.

DONALD K. FROMME, B.M. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Associate Professor of Zoology, 1982, 1977.


JAMES KEITH GOOD, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Associate Professor of Mechanical and Aerospace Engineering and Noble Research Fellow; 1987, 1980.

FRANCIS J. GOUGH, B.S. (West Virginia Univ.), M.S. (ibid), Ph.D. (ibid); Professor of Plant Pathology 1974.

VICKI GREEN, M.A. (Univ. of California, Berkeley), Ph.D. (Colorado State Univ.); Associate Professor and Head of the Department of Psychology, 1986, 1974.

JOEL K. HAACK, BA (Univ. of Iowa), MA (ibid), Ph.D. (ibid); Associate Professor and Interim Head of the Department of Mathematics; 1984, 1979.

CHARLES THOMAS HAAN, B.S. (Purdue Univ.), M.S. (ibid), Ph.D. (Iowa State Univ.); Regents Professor and Sarkey’s Distinguished Professor of Agricultural Engineering 1990, 1978.

MARTIN J. HAGAN, B.S. (Univ. of Notre Dame), M.S. (Georgia Inst. of Tech), Ph.D. (Univ. of Kansas); Associate Professor of Electrical and Computer Engineering 1986.


STEPHEN W. HALLBRENNER, B.S. (Univ. of Minnesota), M.S. (Oregon State Univ.), Ph.D. (Univ. of California, Berkeley); Associate Professor of Forestry, 1990, 1986.


DON R. HANSEN, B.S. (Brigham Young Univ.), M.S. (Univ. of Arizona); Professor of Accounting 1989.

BERTIL LENNART HANSON, B.S. (Northwestern Univ.), MA (Univ. of Chicago), Ph.D. (ibid); Professor of Political Science; 1976, 1959.

H. JAMES HARMON, B.S. (Purdue Univ.), M.S. (ibid), Ph.D. (ibid); Professor of Microbiology, Adjunct Professor of Physics; 1990, 1977.

LYNDA C. HARRIMAN, B.S. (Colorado State Univ.), M.S. (Univ. of Illinois), Ph.D. (ibid); Professor of Family Relations and Child Development and Associate Dean for Home Economics Cooperative Extension; 1987, 1984.

RICHARD DOUGLAS HECOCK, BA (Albion College), MA (Wayne State Univ.), Ph.D. (Clark Univ.); Regents Service Professor of Geography, 1990, 1969.

GEORGE E. HEDRICK, BA (Adams State College), M.S. (Iowa State Univ.), Ph.D. (ibid); Professor and Head of the Department of Computer Science; 1985, 1970.

BOB HELM, BA (Wichita State Univ.), MA (ibid), Ph.D. (State Univ. of New York, Albany); Associate Professor of Psychology, 1976, 1972.

DAVID M. HENNEBERRY, B.S. (Univ. of Minnesota), M.S. (ibid), Ph.D. (Univ. of Wisconsin, Madison); Associate Professor of Agricultural Economics; 1988, 1984.

THOMAS C. HENNESSY, B.S. (Univ. of Northern Iowa), Ph.D. (Iowa State Univ.); Professor of Forestry; 1990, 1976.

CHARLES A. HIBBERD, B.S. (Univ. of Nebraska, Lincoln), M.S. (O.S.U.), Ph.D. (ibid); Associate Professor of Animal Science; 1987, 1982.
BEULAH MARIE HIRSCHLEIN, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Professor of Family Relations and Child Development and Director of Home Economics University Extension; 1981, 1970.

CHRAN-JYN (DAVID) HO, B.S. (National Chao-Tun Univ.), M.B.A (Univ. of Georgia), Ph.D. (Michigan State Univ.); Associate Professor of Management; 1987, 1985.

LAWRENCE L. HOBEROCK, B.S.M.E. (Univ. of Missouri, Rolla), M.S.M.E. (Purdue Univ.), Ph.D. (ibid); Professor and Head of the School of Mechanical Engineering; 1987.

LARRY HOCHHAUS, B.S. (Iowa State Univ.), MA (ibid), Ph.D. (ibid); Associate Professor of Psychology; 1975, 1971.

C. WESLEY HOLTLEY, B.S. (O.S.U.), M.S. (ibid), Ed.D. (ibid); Associate Professor of Agricultural Education and Assistant Dean, College of Agriculture; 1989, 1980.

ELIZABETH M. HOLT, BA (Smith College), Ph.D. (Brown Univ.); Professor of Chemistry; 1987, 1981.

SMITH L. HOLT, B.S. (Northwestern Univ.), Ph.D. (Brown Univ.); Professor of Chemistry and Dean of the College of Arts and Sciences; 1989, 1980.

GERALD W. HORN, B.S. (Texas Tech Univ.), M.S. (Purdue Univ.), Ph.D. (ibid); Professor of Animal Science; 1981, 1974.

ARTHUR W. HOUNSLOW, B.Sc. (Univ. of Melbourne), M.Sc. (Carleton Univ.), Ph.D. (ibid); Professor of Geology; 1981.

ROBERT K. HUGHES, B.S. (The Citadel), M.S. (O.S.U.), Ph.D. (ibid); Professor and Head of the School of Civil Engineering 1983.

PAUL DWIGHT HUMMER, B.S. (Pennsylvania State Univ.), Ph.D. (ibid); Professor of Agricultural Economics and Associate Dean, College of Agriculture; 1982, 1969.

ROBERT M. HUNGER, B.S. (Colorado State Univ.), M.S. (ibid), Ph.D. (Oregon State Univ.); Associate Professor of Plant Pathology; 1987, 1982.

JAMES L. HUSTON, BA (Dennison Univ.), MA (Univ. of Illinois), Ph.D. (ibid); Associate Professor of History; 1988, 1980.

CHRISWELL G. HUTCHENS, B.S. (South Dakota State Univ.), M.S. (ibid), Ph.D. (Univ. of Missouri); Associate Professor of Electrical and Computer Engineering; 1986.

LAWRENCE M. HYNSON, JR, BA (Texas Christian Univ.), MA (ibid), Ph.D. (Univ. of Tennessee); Associate Professor of Sociology; 1976, 1972.

TOMAS H. IRELAND, JR, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Associate Professor of Economics; 1981, 1979.

JAMES FORBES JACKSON, B.B.A (Univ. of Texas), M.B.A (ibid), Ph.D. (ibid); Associate Professor of Finance; 1967, 1964.

WILLIAM H. JACO, BA (Fairmont State College), M.A. (Pennsylvania State Univ.), Ph.D. (Univ. of Wisconsin); Professor of Mathematics; 1982.

JANICE WICKSTEAD JADLOW, BA (Miami Univ.), MA (Univ. of Virginia), Ph.D. (O.S.U.); Associate Professor and Head of the Department of Finance; 1990, 1981.

JOSEPH M. JADLOW, JR, BA (Central Missouri State College), M.S. (ibid), Ph.D. (Univ. of Virginia); Professor of Economics; 1976, 1968.

GEORGE FREDERICK JEWSBURY, BA (Mankato State College), MA (Univ. of Washington), Ph.D. (ibid); Professor of History; 1985, 1967.

JOHN JOBE, B.S. (Univ. of Tulsa), M.S. (O.S.U.), Ph.D. (ibid); Professor of Mathematics; 1979, 1964.

ARLAND H. JOHANNES, B.S. (Illinois State Univ.), M.S.E. (West Virginia Univ.), Ph.D. (Univ. of Kentucky); P.E.; Professor of Chemical Engineering 1989, 1984.

BECKY L. JOHNSON, B.S. (O.S.U.), M.S. (Univ. of Illinois, Urbana), Ph.D. (ibid); Professor of Botany; 1988, 1969.

JERRY ALAN JOHNSON, B.S. (O.S.U.), M.S. (Univ. of Illinois), Ph.D. (ibid); Professor of Mathematics; 1979, 1969.

WILBUR D. DEKE JENSON, B.S. (Rocky Mountain College), M.Ed. (Univ. of Montana), Ed.D. (Western Michigan Univ.); Associate Professor of Educational Administration and Higher Education; 1979, 1974.

LAURA DUNN JOLLY, B.S. (Univ. of Mississippi), M.S. (O.S.U.), Ph.D. (ibid); Associate Professor of Design, Housing and Merchandising 1988, 1983.

HELEN ELAINE JORDAN, BA (Bridgewater College), M.S. (Virginia Polytechnic Inst.), D.V.M. (Univ. of Georgia), Ph.D. (ibid); Professor of Veterinary Parasitology, Microbiology, and Public Health; 1969.

D. ELAINE JORGENSEN, BA (North- ern Colorado Univ.), MA (ibid), Ed.D. (O.S.U.); Professor of Family Relations and Child Development and Director of Home Economics Academic Affairs; 1976, 1968.

R MALATESHA JOSHI, B.S. (Mysore Univ., India), M.A. (Indiana State Univ.), Ph.D. (Univ. of South Carolina); Associate Professor of Curriculum and Instruction; 1990.

BRIAN A. KAHN, B.S. (Delaware Valley Col. of Science and Agriculture), M.S. (Cornell Univ.), Ph.D. (ibid); Associate Professor of Horticulture; 1987, 1982.

THOMAS ALLAN KARMAN, BA (Albion College, MA (Harvard Univ.), Ph.D. (Univ. of Toledo); Professor of Educational Administration and Higher Education; 1978, 1972.

SHELDON KATZ, B.S. (Massachusetts Institute of Technology), Ph.D. (Princeton Univ.); Associate Professor of Mathematics; 1989, 1987.

MARVIN STANFORD KEENER, B.S. (Birmingham Southern College), M.A. (Univ. of Missouri), Ph.D. (ibid); Professor of Mathematics and Associate Dean of Instruction of the College of Arts and Sciences; 1990, 1970.

ALLEN EUGENE KELLY, B.S. (Texas A & M Univ.), M.E. (ibid), Ph.D. (Univ. of Texas); P.E.; Professor of Civil Engineering and Associate Dean of Research of the College of Engineering, Architecture and Technology; 1980,1970.

DOUGLAS CHARLES KENT, B.S. (Univ. of Nebraska), M.S. (ibid), Ph.D. (Iowa State Univ.); Professor of Geology; 1980, 1969.

DARREL DEAN KLETKE, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Professor of Agricultural Engineering; 1979, 1966.

Marilyn G. KLETKE, BA (The Colorado College), M.S. (Iowa State Univ.), Ph.D. (O.S.U.); Associate Professor of Management 1985, 1976.

PATRICIA KAIN KNAUB, B.S. (Univ. of Nebraska, Lincoln), M.S. (ibid), Ph.D. (ibid); Professor of Family Relations and Child Development and Dean of the College of Home Economics; 1989.

CLYDE B. KNIGHT, B.S. (East Central State College, Oklahoma), M.S. (O.S.U.), Ed.D. (ibid); Associate Professor of Trade and Industrial Education; 1975, 1966.

J. DAVID KNOTTNERUS, BA (Beloit College), MA (Southern Illinois Univ.), Ph.D. (ibid); Associate Professor of Sociology; 1990, 1988.

ANDREW ALAN KOCAN, BA (Hiram College), M.S.P.H. (Univ. of North Carolina), Ph.D. (ibid); Professor of Veterinary Parasitology, Microbiology and Public Health; 1984, 1974.

KATHERINE M. KOCAN, BA (Hiram College), M.S.P.H. (Univ. of North Carolina, Chapel Hill), Ph.D. (O.S.U.); Associate Professor of Veterinary Parasitology, Microbiology, and Public Health; 1988, 1980.

J. RANDALL KOEITING, BA (LaSalle Major Seminary College), MA (St. Louis Univ.), Ph.D. (Univ. of Wisconsin, Madison); Associate Professor of Curriculum and Instruction; 1982, 1979.

RANGA KOMANDURI, B.E. (Osmania Univ.), M.S. (Hyderabad), Ph.D. (Monash Univ.); Professor of Mechanical and Aerospace Engineering 1989.

IGNACY I. KOTLARSKI, Magister (M.S.) (Warsaw, Poland), Ph.D. (Univ. of Cracow, Poland), Docent in Mathematics (Technical Univ. of Warsaw); Professor of Statistics; 1970, 1969.

GLENN A. KRAZLIER, B.S.AE. (North Dakota State Univ.), M.S.AE. (ibid), Ph.D. (Iowa State Univ.); Professor of Agricultural Engineering 1985, 1982.

EUGENE G. KRENZER, JR, B.S. (Cornell Univ.), M.S. (Univ. of Minnesota), Ph.D. (ibid); Associate Professor of Agronomy, 1981, 1978.

RUTH HMS KRIEGER, B.A (Ohio Univ.), M.B.A (Univ. of Cincinnati), Ph.D. (ibid); A Associate Professor of Marketing 1987, 1982.

GERALD M. LAGE, B.S. (Iowa State Univ.), Ph.D. (Univ. of Minnesota); Professor of Economics; 1987, 1966.
JAY CLARENCE MURRAY, B.S. (Utah State Univ.), M.S. (Colorado State Univ.), Ph.D. (Cornell Univ.); Professor of Agronomy; 1984, 1959.

J. ROBERT MYERS, BA (Rice Univ.), MA (ibid), Ph.D. (ibid); Associate Professor of Mathematics; 1982, 1979.

SAYANARAYAN NANDI, B.S. (University of Calcutta), M.S. (ibid), Ph.D. (University of Chicago); Associate Professor of Physics; 1988, 1986.

JOHN W. NAZEMETZ, B.S.I.E.

JAY CLARENCE MURRAY, B.S. (Utah), James E. Osborn, B.S. (O.S.U.),

JAMES E. OSBORN, B.S. (O.S.U.),

Ph.D. (ibid); Professor and Head of the Department of Agricutural Economics; 1977.

FREDERIC N. OWENS, B.S. (University of Minnesota), Ph.D. (ibid); Regents Professor of Animal Science; 1986, 1974.

CHARLOTTE L. OWNBY, B.S. (University of Tennessee), M.S. (ibid), Ph.D. (Colorado State Univ.); Regents Professor and Head of the Department of Physiological Science; 1990, 1974.

JAMES DONALD OWNBY, B.S. in Ed. (University of Tennessee), M.S. (ibid), Ph.D. (Colorado State Univ.); Professor of Botany; 1987, 1975.

ROGER JERO PANCIERA, D.V.M. (O.S.U.), M.S. (Cornell Univ.), Ph.D. (ibid); Professor of Veterinary Pathology; 1979, 1956.

WILLIAM M. PARLE, B.S. (Northern Illinois Univ.), M.S. (ibid), Ph.D. (ibid); Associate Professor of Political Science; 1988, 1981.

DAVID PATTERSON, BA (Univ. of Oregon), MA (ibid), Ph.D. (ibid); Associate Professor of Foreign Languages and Literatures; and Interim Director of the University Honors Program; 1990, 1982.

DENNIS HENRY PATZ, B.S. (Northern Illinois Univ.), M.S. (ibid), Ph.D. (Univ. of Texas); Karr-McGee Professor of Accounting 1988.

DONNA PAYNE, B.S. (Oklahoma College for Women), M.S. (Univ. of Oklahoma), Ph.D. (ibid); Associate Professor of Health, Physical Education and Leisure; 1981, 1972.

JOSEPH H. PEARL, BA (Univ. of Michigan), Ph.D. (ibid); A associate Professor of Applied Behavioral Studies; 1974, 1971.


ARTHUR L. PENTZ, B.S. (Bloomburg State College), M.Ed.(ibid), Ph.D. (Pennsylvania State Univ.); Associate Professor of Speech; 1987, 1982.

JACQUES H. H. PERK, Candidat (Univ. of Amsterdam), Doctorandus (ibid), Doctor (Univ. Leiden, Netherlands); Associate Professor of Physics; 1988.

LARRY M. PERKINS, B.S. (Univ. of Nebraska), Ph.D. (Syracuse Univ.); Professor of Sociology 1971, 1968.

KATIE M. PERRY, B.S. (Bishop College), M.Ed. (Southeastern O.S.U.), Ph.D. (O.S.U.); Associate Professor of Applied Behavioral Studies; 1988, 1979.

DON CLAYTON PETERS, A.B. (Tabor College), M.S. (Kansas State Univ.), Ph.D. (ibid); Professor of Entomology; 1971.

BRUCE A. PETTY, B.S. (Fort Hays State College), M.S. (Kansas State Univ.), Ph.D. (ibid); Associate Professor of Curriculum and Instruction; 1982, 1978.

WAYNE A. PETTYJOHN, BA (Univ. of South Dakota), MA (ibid), Ph.D. (Boston Univ.); Sun Chair, Regents Professor and Head of the School of Geology; 1989, 1980.

JAMES L. PHILLIPS, BA (Univ. of Arizona), MA (Southern Illinois Univ.), Ph.D. (ibid); Professor of Psychology 1977.

WILLIAM H. PixTon, A.B. (George Washington Univ.), MA (ibid), Ph.D. (Univ. of North Carolina, Chapel Hill); A associate Professor of English; 1989, 1977.

JOHN A. POLONCHEK, BA (Northwestern Univ.), M.S. (Georgia Inst of Technology), Ph.D. (ibid); Associate Professor of Finance; 1983.

RICHARD WILLIAM POOLE, B.S. (Univ. of Oklahoma), M.BA (ibid), Ph.D. (O.S.U.); Professor of Economics; 1984, 1960.

RICHARD C. POWELL, B.S. (U.S. Naval Academy), M.S. (Arizona State Univ.), Ph.D. (ibid); Regents Professor of Physics; 1985, 1971.

WAYNE B. POOLE, B.S. (Texas Lutheran College), M.S. (Texas A & M Univ.), Ph.D. (Univ. of Tulsa Univ.); Professor of Mathematics; 1990, 1980.

CHRISTOPHER ERIC PRICE, B.S. (Univ. of Wales), Ph.D. (ibid); P.E.; Professor of Mechanical and Aerospace Engineering 1980, 1966.

EDWARD OLLINGTON PRICE, III, B.S. (Texas A & M Univ.), Ph.D. (ibid); Associate Professor of Economics; 1984.

JAMES MANUEL PRICE, B.S. (Univ. of Oklahoma), BA (ibid), Ph.D. (ibid); Associate Professor of Psychology; 1984, 1977.

NEIL PURDIE, B.S. (Univ. of Glasgow), Ph.D. (ibid); Professor of Chemistry; 1982, 1965.

CHARLES WAYNE QUALLS, JR, B.S. (O.S.U.), D.V.M. (ibid), Ph.D. (Univ. of California, Davis); Professor of Veterinary Pathology; 1988, 1982.

RICHARD WILLIAM POOLE, B.S. (Univ. of Oklahoma), M.BA (ibid), Ph.D. (O.S.U.); Professor of Economics; 1984, 1960.

RICHARD C. POWELL, B.S. (U.S. Naval Academy), M.S. (Arizona State Univ.), Ph.D. (ibid); Regents Professor of Physics; 1985, 1971.

WAYNE B. POOLE, B.S. (Texas Lutheran College), M.S. (Texas A & M Univ.), Ph.D. (Univ. of Tulsa Univ.); Professor of Mathematics; 1990, 1980.

CHRISTOPHER ERIC PRICE, B.S. (Univ. of Wales), Ph.D. (ibid); P.E.; Professor of Mechanical and Aerospace Engineering 1980, 1966.

EDWARD OLLINGTON PRICE, III, B.S. (Texas A & M Univ.), Ph.D. (ibid); Associate Professor of Economics; 1984.

JAMES MANUEL PRICE, B.S. (Univ. of Oklahoma), BA (ibid), Ph.D. (ibid); Associate Professor of Psychology; 1984, 1977.

NEIL PURDIE, B.S. (Univ. of Glasgow), Ph.D. (ibid); Professor of Chemistry; 1982, 1965.

CHARLES WAYNE QUALLS, JR, B.S. (O.S.U.), D.V.M. (ibid), Ph.D. (Univ. of California, Davis); Professor of Veterinary Pathology; 1988, 1982.

ZANE K. QIBBLE, B.S. (Univ. of Nebraska, Lincoln), M.Ed. (ibid), Ph.D. (Michigan State Univ.); Professor of Administrative Services; 1983, 1981.

ROBERT THOMAS RADFORD, BA (Baylor Univ.), MA (ibid), Ph.D. (ibid); Professor of Philosophy; 1972, 1963.

LIONEL MISCHA RAFF, B.S. (Univ. of Oklahoma), M.S. (ibid), Ph.D. (Univ. of Illinois); Regents Professor of Chemistry; 1978, 1964.


WILLIAM WALTER RAMBO, AB. (Temple Univ.), MA (ibid), Ph.D. (Purdue Univ.); Professor of Psychology; 1966, 1956.

DARYLL EUGENE RAY, B.S. (Iowa State Univ.), M.S. (ibid), Ph.D. (ibid); Professor of Agricultural Economics; 1978, 1971.

DAVID K. REED, B.S. (Purdue Univ.), M.S. (Texas A & M Univ.), Ph.D. (Univ. of California-Riverside); Professor of Entomology; 1988.

KARL NEVELLE REID, JR, B.S. (O.S.U.), M.S. (ibid), Sc.D. (Massachusetts Inst of Technology); P.E.; Professor of Mechanical and Aerospace Engineering and Dean of the College of Engineering, Architecture and Technology; 1986, 1964.

MILTON D. RHOADS, B.S. (Central Michigan Univ.), M.S. (Michigan State Univ.), Ed.D. (ibid); Associate Professor of Curriculum and Instruction; 1977, 1969.

RONALD P. Rhoten, B.S. (Univ. of Texas), MA (ibid), Ph.D. (ibid); P.E.; Professor of Electrical and Computer Engineering 1977, 1969.

M ary Lynne Richards, B.S. (Michigan State Univ.), MA (ibid), Ph.D. (Univ. of Maryland); Associate Professor of Design, Housing and Merchandising 1985.

Paul E. Richardson, BA (Univ. of Kentucky), M.Ed. (Univ. of Cincinnati), MAT. (Univ. of North Carolina), M.S. (Univ. of Cincinnati), Ph.D. (ibid); Professor of Botany; 1982, 1968.

Robert Louis Robinson, JR., B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); P.E.; MOCO Chair and Head of the School of Chemical Engineering 1987, 1965.

Mark G. Rockley, BA (Hope College), Ph.D. (Univ. of Southampon); Professor of Chemistry, 1984, 1975.

Peter Cushing Rollins, BA (Harvard Univ.), Ph.D. (ibid); Professor of English; 1984, 1972.
LINDA YU, B.S. (National Taiwan Univ.), M.S. (Univ. of Illinois), Ph.D. (ibid); Professor of Biochemistry 1988, 1981.

ALEXANDER V. ZALE, B.S. (University of Massachusetts), M.S. (Virginia Polytechnic Institute & State Univ.), Ph.D. (Univ. of Florida); Adjunct Assistant Professor of Zoology; 1985.

WILLIAM G. ZIKMUND, BA (University of Colorado), M.S. (Southern Illinois Univ.), D.B.A. (University of Colorado); Professor of Marketing; 1980, 1972.

LARRY D. ZIRKLE, B.S. (Oklahoma State Univ.), M.S. (ibid), Ph.D. (Univ. of Texas); P.E.; Professor of Mechanical and Aerospace Engineering and Director of Engineering Student Academic Services; 1987, 1970.

PHILLIP J. ZWANK, BA (Central College, Pella), M.S. (University of Missouri, Columbia), Ph.D. (Iowa State Univ.); Associate Professor of Zoology. 1987.

FARREL J. ZWERNEMAN, B.S.C.E. (Univ. of Texas, M.S.C.E. (ibid), Ph.D. (ibid); Associate and Centennial Professor of Civil Engineering, 1990, 1985.

Full Members Emeriti

DONALD CLAYTON ABBOTT, B.S. (Kansas State Univ.), M.S. (ibid), Ph.D. (ibid); Professor Emeritus of Biochemistry; 1986, 1954.


FREDERICK GENE ACUFF, BA (Manhattan Bible College), M.S. (Kansas State Univ.), Ph.D. (Univ. of Missouri); Professor Emeritus of Sociology. 1988, 1962.

THEODORE LEE AGNEW, BA (Univ. of Illinois), MA (ibid), MA (Harvard Univ.), Ph.D. (ibid); Professor Emeritus of History; 1984, 1947.

DONALD EMERSON ALLEN, B.S. (Ohio State Univ.), MA (ibid), Professor Emeritus of Sociology; 1969, 1967.

WILTON T. ANDERSON, B.S. (Northwestern State College), M.C.E. (Univ. of Oklahoma), Ed.D. (Univ. of Colorado); Professor and Head Emeritus of the Department of Accounting. 1960.

DALE ELLSWORTH ARMSTRONG, BA (Centenary College), M.P.A (Univ. of Texas), Ph.D. (ibid); Associate Professor Emeritus of Accounting, 1990, 1965.

E. BURL AUSTIN, B.S. (Univ. of Arkansas), C.P.A (Iowa-Oklahoma), M.S. (Univ. of Iowa); Associate Professor Emeritus of Accounting and Assistant Internal Auditor Emeritus; 1979, 1947.


DONALD J. BANKS, B.S. (O.S.U.), M.S. (ibid), Ph.D. (Univ. of Georgia); Professor Emeritus of Agronomy; 1990, 1966.

HELEN FRANCIS BARBOUR, B.S. (Univ. of Oklahoma), M.H.Ed.Ed. (ibid), M.S. (Iowa State Univ.); Ph.D. (ibid); Professor Emeritus of Food, Nutrition and Institution Administration; 1974, 1960.


DAVID GEORGE BATELDER, B.S. (Kansas State Univ.), M.S. (O.S.U.); P.E.; Professor Emeritus of Agricultural Engineering, 1985, 1955.

CALVIN GREENWOOD BEAMES, JR. B.A (New Mexico Highlands Univ.), M.S. (ibid), Ph.D. (Univ. of Oklahoma); Professor Emeritus of Zoology, 1990, 1962.

BERNARD R Belden, B.S. Ed. (State Univ. of New York, Plattsburg), MA (New York Univ.), Ph.D. (Syracuse Univ.); Professor Emeritus of Curriculum and Instruction; 1987, 1959.

DAVID SHELLEY BERKELEY, AB (Juniata College), AM. (Harvard Coll.), Ph.D. (ibid); Professor Emeritus of English; 1987, 1948.

LEO VERNON BLAKELY, B.A. (Oklahoma State University), MA (Iowa State Univ.); Professor Emeritus of Plant Pathology; 1978, 1948.


RALPH GUPTON BUCKNER, B.A. (Westminster College), B.S. (Kansas State Univ.), D.V.M. (ibid), M.S. (Univ. of Oklahoma); Professor Emeritus of Veterinary Pathology; 1986, 1956.

LINDA YU, B.S. (National Taiwan Univ.), M.S. (Univ. of Illinois), Ph.D. (ibid); Professor of Biochemistry 1988, 1981.

LINDA YU, B.S. (National Taiwan Univ.), M.S. (Univ. of Illinois), Ph.D. (ibid); Professor of Biochemistry 1988, 1981.

LINDA YU, B.S. (National Taiwan Univ.), M.S. (Univ. of Illinois), Ph.D. (ibid); Professor of Biochemistry 1988, 1981.

LEO VERNON BLAKELY, B.A. (Oklahoma State University), MA (Iowa State Univ.); Professor Emeritus of Plant Pathology; 1978, 1948.


RAJU GUPTON BUCKNER, B.A. (Westminster College), B.S. (Kansas State Univ.), D.V.M. (ibid), M.S. (Univ. of Oklahoma); Professor Emeritus of Veterinary Pathology; 1986, 1956.

LINDA YU, B.S. (National Taiwan Univ.), M.S. (Univ. of Illinois), Ph.D. (ibid); Professor of Biochemistry 1988, 1981.
OTIS CLIFFORD DERMER, B.S. (Bowling Green State College), Ph.D. (Ohio State Univ.); Regents Service Professor Emeritus of Chemistry; 1975, 1934.

RICHARD NORMAN DEVRIES, B.S. (Univ. of Nebraska), M.S. (ibid), Ph.D. (Utah State Univ.); Professor Emeritus of Civil Engineering 1987, 1969.

GUY R DONNEL, AB. (Univ. of Oklahoma), MA (ibid), Ph.D. (ibid); Professor Emeritus of Political Science; 1970, 1946.

TROY CLYDE DORRIS, B.Ed. (Southern Illinois Univ.), M.S. (ibid), Ph.D. (Univ. of Illinois); Professor Emeritus of Zoology; 1977, 1956.


MARVIN TIPTON EDMISON, BA (Univ. of Nebraska), M.S. (ibid), Ph.D. (O.S.U.); Professor Emeritus of Chemistry; 1978, 1955.

EDMUND JULIUS EISENBAUER, B.S. (Univ. of Wisconsin), M.S. (ibid), Ph.D. (ibid); Regents Professor Emeritus of Chemistry, 1987, 1962.

BERNARD WILLIAM EISENSTAT, BS. (Univ. of Rochester), M.S. (Univ. of Iowa), Ph.D. (Univ. of Kansas); Professor Emeritus of History, 1969.

HAMED K. ELDIN, B.S. ( Cairo Univ.), M.S. (California Inst. of Technology), PhD. (Univ. of Iowa); P.E.; Professor Emeritus of Industrial Engineering and Management; 1988, 1967.

EARL JOHN FERGUSON, B.S. (Texas A & M Univ.), M.S. (O.S.U.), Ph.D. (ibid); Professor Emeritus of Industrial Engineering and Management; 1986, 1956.

LEROY HENRY FISCHER, BA (Univ. of Illinois), MA (ibid), Ph.D. (ibid); Oppenheimer Professor Emeritus of History; 1984, 1946.


ERNEST CHESTER FITCH, JR, B.S. (O.S.U.), M.S. (ibid), Ph.D. (Univ. of Oklahoma); Professor Emeritus of Mechanical and Aerospace Engineering 1984, 1953.

ROBERT CARL FITE, BA (Central State College), M.S. (O.S.U.), Ph.D. (Northwestern Univ.); Professor Emeritus of Geography and Director Emeritus of Programs for Professionals; 1946.

JOHN RICHARD FRANZMANN, B.S. (Univ. of Connecticut), M.S. (ibid), Ph.D. (O.S.U.); Professor Emeritus of Agricultural Economics; 1987, 1964.

ROBERT DAVID FREEMAN, B.S. (North Georgia College), M.S. (Purdue Univ.), Ph.D. (ibid); Professor Emeritus of Chemistry; 1988, 1955.

LLOYD LEE GARRISON, B.S. (State Teachers College, Missouri), M.Ed. (Univ. of Missouri), Ed.D. (ibid); Regents Service Professor Emeritus of Administrative Services and Business Education; 1986, 1951.

JAMES ELMER GARTON, B.S. (O.S.U.), M.S. (Utah State Univ.), Ph.D. (Univ. of Missouri); P.E.; Professor Emeritus of Agricultural Engineering 1985, 1949.

LYNN LAMARR GEE, A.B. (Brigham Young Univ.), M.S. (Colorado A & M College), Ph.D. (Univ. of Wisconsin); Professor Emeritus of Microbiology; 1977, 1954.

ROY GLADSTONE, B.S. (Univ. of Illinois), M.S. (ibid), Ph.D. (ibid); Professor Emeritus of Applied Behavioral Studies; 1980, 1949.

BRYAN P. GLASS, Ab. (Baylor Univ.), Ph.D. (Texas A & M Univ.), Ph.D. (O.S.U.); Professor Emeritus of Zoology and Director Emeritus of University Museum; 1985, 1946.


GEORGE GORIN, AB. (Brooklyn College), MA (Princeton Univ.), Ph.D. (ibid); Professor Emeritus of Chemistry, 1990, 1955.


RICHARD PHILIP JUNGERS, B.E. (LaCrosse State College), Ph.M. (Univ. of Wisconsin), Ph.D. (ibid); Professor Emeritus of Education; 1957.

ROBERT B. KAMM, BA (Univ. of Northern Iowa), MA (Univ. of Minnesota), Ph.D. (ibid); University Professor Emeritus and President Emeritus; 1988, 1958.

WILLIAM RAYMOND KAYS, B.S. (O.S.U.), M.S. (New York State University), Ph.D. (Univ. of Wisconsin); Professor Emeritus of Electrical and Computer Engineering; 1987, 1951.

JOHN DAVID HAMPTON, B.G.D. (Omaha Univ.), M.S. (Trinity Univ.), Ph.D. (Univ. of Texas); Professor Emeritus of Applied Behavioral Studies, 1983, 1967.


HARRY EUGENE HEATH, JR, BA (Univ. of Tulsa), M.S. (Northwestern Univ.), Ph.D. (Iowa State Univ.); Regents Service Professor Emeritus of Journalism and Broadcasting 1986, 1961.

HERBERT JAMES HENDERSON, AB. (Boston Univ.), MA (Columbia Univ.), Ph.D. (ibid); Professor Emeritus of History; 1970, 1966.

ROBERT L. HENDRICKSON, B.S. (Kansas State Univ.), M.S. (ibid), Ph.D. (Univ. of Missouri); Professor Emeritus of Animal Science; 1986, 1956.

RAYMOND N. HABIBY, AB. (University of Minnesota), MA (ibid), Ph.D. (Univ. of Minnesota); Professor Emeritus of Political Science; 1988, 1965.

B. CURTIS HAMM, B.S. (O.S.U.), M.B.A. (ibid), Ph.D. (Univ. of Texas); Professor Emeritus of Marketing; 1990, 1966.

GUY R DONNELL, AB. (Univ. of Missouri), M.S. (ibid), Ph.D. (ibid); Professor Emeritus of Psychology, 1988, 1967.

H. WILLIAM ELBERT JAYNES, B.S. (Ohio State Univ.), MA (ibid), Ph.D. (ibid); Professor Emeritus of Business Education; 1988, 1970.

RAYMOND H. REGENTS, B.S. (Univ. of Minnesota), Ed.M. (Univ. of Cincinnati), Ed.D. (ibid); Professor Emeritus of Administrative Services and Business Education; 1988, 1970.

WILLIAM ELMERT JAYNES, B.S. (Oklahoma State Teachers College), M.S. (Fort Hays Kansas State College), Ed.D. (Univ. of Nebraska); Professor Emeritus of Curriculum and Instruction; 1973, 1969.

JOHN JAMES SCHROEDER, B.S. (Univ. of California), M.S. (ibid), Ph.D. (ibid); Professor Emeritus of Psychology; 1986, 1955.

RAYMOND N. HABIBY, AB. (University of Minnesota), MA (ibid), Ph.D. (Univ. of Minnesota); Professor Emeritus of Political Science; 1988, 1965.

MAURICE RICHARD HICKMAN, B.S. (Oklahoma State University), M.S. (ibid); Professor Emeritus of Business Education; 1990, 1966.
ROSCOE ROUSE, BA (Univ. of Oklahoma), MA (Univ. of Michigan), Ph.D. (ibid); librarian Emeritus of the Edmon Low Library, 1987, 1967.

F. CUTHBERT SALMON, B.Arch. (Univ. of Pennsylvania), M.Arch. (ibid); RA; NCARB; Professor Emeritus of Architecture; 1980, 1959.

KENNETH DOUGLAS SANDVOLD, B.S (Concordia College), M.S. (Univ. of North Dakota), Ph.D. (Univ. of Illinois); Professor Emeritus of Psychology; 1990, 1965.

ERVIN WILLIAM SCHROEDER, B.S. (Iowa State Univ.), M.A. (ibid), Ph.D. (ibid); Professor Emeritus of Agricultural Engineering; 1974, 1947.


ROSCOE ROUSE, BA (Univ. of Michigan), MA. (ibid), Ph.D. (ibid); Professor Emeritus of Education and Dean Emeritus of the College of Home Economics; 1985, 1973.

JANET SELAKOVICH, AB. (Western State College of Colorado), MA (Washington State Univ.), Ed.D. (Univ. of Colorado); Professor Emeritus of Curriculum and Instruction; 1968, 1963.


JANE M. SHEARER, B.S. (New York School of Industrial and Labor Relations), AM. (Princeton Univ.), Ph.D. (ibid); Professor Emeritus of Economics; 1985, 1957.

JANET L. TOWNSEND SMITH, BA (Carroll College), MA (Univ. of Wisconsin), Ph.D. (Iowa State Univ.); Professor Emeritus of Computer Science; 1990, 1966.

EDWARD EARL STURGEON, B.S.F (Univ. of Michigan), M.F. (ibid), Ph.D. (ibid); Professor Emeritus of Forestry, 1986, 1966.


NHYAYAPATHI V. V. WAMP, B.S. (Siddharth College), M.S. (Wilson College), Ph.D. (Florida State Univ.); Professor Emeritus of Physics; 1987, 1968.

FRED TEEWELL, BA (DePauw Univ.), MA (Louisiana State Univ.), Ph.D. (ibid); Professor Emeritus of Speech Communication; 1984, 1959.

ROLLIN HOMARD THAYER, B.S. (O.S.U.), M.S. (Univ. of Nebraska), Ph.D. (Washington State Univ.); Professor Emeritus of Animal Science; 1980, 1943.

JOHN E. THOMAS, B.S. (Ohio State Univ.), Ph.D. (Univ. of Wisconsin); Professor Emeritus of Plant Pathology 1981, 1950.

ROBERT TOTUSEK, B.S. (O.S.U.), M.S. (Purdue Univ.), Ph.D. (ibid); Professor Emeritus and Head Emeritus of the Department of Animal Science; 1990, 1952.

RUDOLPH W. TRENTO, Dr. of Law (Univ. of Rome), Dr. of Political Science (Univ. of Turin, Italy); Professor Emeritus of Economics; 1979, 1948.


BILLY BOB TUCKER, B.S. (O.S.U.), M.S. (ibid), Ph.D. (Univ. of Illinois); Regents Professor Emeritus of Agronomy; 1987, 1956.

ELBERT JEROME TURMAN, B.S. (O.S.U.), M.S. (Purdue Univ.), Ph.D. (ibid); Professor Emeritus of Animal Science; 1987, 1955.


MILTON F. USRY, B.BA (Baylor Univ.), M.BA (Univ. of Houston), Ph.D. (Univ. of Texas); Regents Professor Emeritus of Accounting, 1965, 1961.

LOUIS P. VARGA, BA (Reed College), M.S. (Univ. of Chicago); Associate Professor Emeritus of Chemistry, 1986, 1961.

DALLAS FREEMONT WADSWORTH, B.S. (O.S.U.), M.S. (ibid), Ph.D. (Univ. of California); Professor Emeritus of Plant Pathology 1984, 1949.


GEORGE R WALLER, B.S. (North Carolina State College), M.S. (Univ. of Delaware), Ph.D. (O.S.U.); Professor Emeritus of Biochemistry; 1988, 1956.

LOWELL EUGENE WALTERS, B.S. (O.S.U.), M.S. (Massachusetts State College), Ph.D. (O.S.U.); Professor Emeritus of Animal Science; 1984, 1946.

DALE ELDON WEBEL, B.S. (Univ. of Nebraska), M.S. (ibid), Ph.D. (Iowa State Univ.); Professor Emeritus of Agronomy, 1986, 1958.


SAMUEL HUBERT WOODS, JR. AB. (Harvard Univ.), MA (ibid), Ph.D. (Yale Univ.); Professor Emeritus of English; 1990, 1956.

KYLE M. YATES, B.S. (Wake Forest College), B.D. (Southern Baptist Theological Seminary), Th.D. (ibid); Professor Emeritus of Religious Studies; 1986, 1969.

HARRY C. YOUNG, JR, B.S. (Ohio State Univ.), M.S. (Univ. of Minnesota), Ph.D. (ibid); Professor Emeritus of Plant Pathology; 1956, 1950.

JERRY H. YOUNG, B.S. (O.S.U.), M.S. (ibid), Ph.D. (Univ. of California); Professor Emeritus of Entomology; 1990, 1959.

Associate Members

BRIAN D. ADAM, B.S. (Wheaton College), M.S. (Univ. of Nebraska, Lincoln), Ph.D. (Univ. of Illinois); Assistant Professor of Agricultural Economics; 1990.

CHRISTOPHER MITCHEL ADAMS, B.S. (Univ. of California, Los Angeles), M.S. (Univ. of Wyoming), Ph.D. (Univ. of Nevada, Reno); Assistant Professor of Chemistry, 1987.

LEE C. ADKINS, B.S. (Florida State Univ.), MA (Louisiana State Univ.), Ph.D. (ibid); Assistant Professor of Economics; 1988.

DANNY M. ADKISON, BA (O.S.U.), MA (ibid), Ed.D. (ibid); Assistant Professor of Political Science; 1989, 1976.

MARSHALL E. ALLEN, BA (Miami Univ.), MA (ibid); Associate Professor of Journalism and Broadcasting and Director of Educational Television Services; 1967.

PETER AMSTUTZ, B.M. (Peabody Conservatory of Music), M.M. (ibid), D.M.A (ibid); Associate Professor of Music; 1982.

MICHAEL P. ANDERSON, B.S. (Brigham Young Univ.), M.S. (Univ. of Minnesota), Ph.D. (ibid); Assistant Professor of Agronomy, 1990.

STEVEN ANDERSON, B.S. (Cook College, Rutgers Univ.), M.S. (Univ. of Washington, Seattle), Ph.D. (North Carolina State Univ.); Assistant Professor of Forestry, 1987.

ERIC NEIL ANGEVINE, B.S. (Univ. of Texas, Austin), M.S. (ibid); Assistant Professor of Architecture; 1985.

ANDREA B. ARQUITT, B.S. (Univ. of Tennessee), M.S. (O.S.U.), Ph.D. (ibid); Assistant Professor of Food, Nutrition and Institution Administration; 1990, 1981.

GEORGE EDWARD ARQUITT, BA (Union Univ.), M.S. (Univ. of Tennessee), Ph.D. (ibid); Associate Professor and Head of the Department of Sociology, 1990, 1970.

LYNN A ATKINSON, BA (Phillips Univ.), M.S.W. (Univ. of Oklahoma), Ph.D. (O.S.U.); Assistant Professor of Sociology, 1988, 1985.

MICHAEL E. AYERS, B.S. (Univ. of Illinois), M.S. (ibid), Ph.D. (ibid); Assistant Professor of Civil Engineering, 1989.

JOHN LAWRENCE BAIRD, B.S. (Washburn Univ.), M.S. (Kansas State Univ.), Ed.D. (O.S.U.); Associate Professor of Technical Education; 1980, 1977.

JAMES E. BAKER, B.S. (U.S. Naval Academy), B.S.E.E. (O.S.U.), M.S.E.E. (ibid), Ph.D. (ibid); Professor and Head of the School of Electrical and Computer Engineering 1984.

SHIRLEY ANN BAKER, BA (Univ. of Mississippi), MA (ibid), Ph.D. (ibid); Assistant Professor of Occupational and Adult Education; 1989.
CHARLES A. BALDWIN, B.S. (Univ. of Massachusetts), D.V.M. (Cornell Univ.), M.S. (ibid), Ph.D. (ibid); Associate Professor of Zoology; 1990, 1985.

WILLIAM L. BALLINGER, BA (Univ. of Iowa), MA (Northeast Missouri State Univ.); Assistant Professor of Music; 1987.

DONNA KAY BANDY, BA (Univ. of Iowa), MA (Drexel Univ.), Ph.D. (ibid); Assistant Professor of Physics; 1987.

JOEL F. BARBER, B.S. (Univ. of Missouri), M.S. (Kansas State Univ.), Ph.D. (Univ. of Nebraska); Assistant Professor of Horticulture and Landscape Architecture; 1987.

LAURA L. BARNES, BA (Univ. of Nebraska, Lincoln), MA (ibid), Ph.D. (ibid); Assistant Professor of Applied Behavioral Studies; 1990.

STEVEN HUGH BARR, B.BA (Texas Tech. Univ.), M.S. (ibid), Ph.D. (Univ. of Iowa); Associate Professor of Management; 1988, 1982.

KENNETH E. BARTELS, M.S. (Colorado State Univ.), D.V.M. (Iowa State Univ.); Associate Professor of Veterinary Medicine and Surgery, 1984, 1982.

LOUIS OTTO BASS, BA (O.S.U.), BAE. (ibid), MAE. (ibid); P.E.; Professor of Architecture; 1976, 1965.

D. JACK BAYLES, B.S.M.E. (Univ. of Oklahoma), M.S.M.E. (ibid), Ph.D. (O.S.U.); Associate Professor in the School of Technology 1979, 1974.


GARY J. BEEBY, B.S. (Phillips Univ.), MA (Univ. of Illinois); Assistant Professor of Speech and Language Pathology and Audiology, 1974.

RONALD S. BEER, B.S. (Illinois State University), MA (Michigan State Univ.), Ph.D. (Kent State Univ.); Professor of Educational Administration and Higher Education and Vice-President of Student Services; 1980.

CAROL L. BENDER, B.S. (Texas Tech. Univ.), M.S. (Oregon State Univ.), Ph.D. (Univ. of California, Riverside); Assistant Professor of Plant Pathology, 1986.

DENNIS EARL BERTHOLF, B.S. (Univ. of Kansas), MA (New Mexico State Univ.), Ph.D. (ibid); Professor of Mathematics; 1988, 1968.

TERRENCE G. BIDWELL, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Assistant Professor of Agronomy, 1988.

DAVID M. BILLFAUX, B.S.Ed. (Illinois State Univ.), MA (Univ. of Kansas), M.Phil. (ibid), Ph.D. (ibid); Assistant Professor of Political Science; 1988, 1986.

BIRNE BINEGAR, B.S. (Univ. of California, Los Angeles), M.S. (ibid), Ph.D. (ibid); Assistant Professor of Mathematics; 1988.

JOHN PAUL BISCHOFF, BA (Univ. of Maryland), Ph.D. (Yale Univ.); Assistant Professor of History, 1984, 1976.

MARSHA C. BLACK, BA (Converse College), Ph.D. (Univ. of Tennessee); Assistant Professor of Zoology, 1990.

GEORGE BAKER BOKORNEY, B.S. (O.S.U.), M.S. (ibid), Ed.D. (Univ. of Oregon); Professor of Hotel and Restaurant Administration; 1983, 1971.

MARTHA A. BOOSE, B.S. (Bowling Green State Univ.), MA (ibid), MA (Wichita State Univ.), Ph.D. (ibid); Assistant Professor of Speech and Language Pathology and Audiology 1990.

GLENN OWEN BROWN, B.S. (Arizona State Univ.), M.S. (Colorado State Univ.), Ph.D. (ibid); Assistant Professor of Agricultural Engineering 1987.

L. HERBERT BRUNEAU, B.S. (McGill Univ.), MA (Univ. of Texas), Ph.D. (ibid); Professor of Zoology; 1966, 1955.

JOHN H. BRYANT, B.Arch. (O.S.U.), M.Arch. (Univ. of Illinois); AIA; NCARB Certified; Professor of Architecture; 1977.

DAVID KIM BURNHAM, B.S. (Jospe State Univ.), MA (ibid), MA (ibid); Associate Professor of Mechanical and Aerospace Engineering 1989.

JEN-TSEH CHANG, BA (Tsing-Hua Univ.), Ph.D. (Harvard Univ.); Assistant Professor of Mathematics; 1988.

DAVID M. CLARK, BA (Cornell Univ.), D.V.M. (ibid); Associate Professor of Veterinary Medicine and Surgery; 1988, 1985.

CORNELL L. CZEKAJ, BA (Goucher College), M.S. (ibid), Ph.D. (ibid); Associate Professor of Psychology; 1986.

CLEVELAND DAVIS, B.S. (Southern College), MA (Univ. of Texas, Austin), Ph.D. (ibid); Associate Professor of political Science; 1987.

GRADUATE FACULTY
CAROLYN S. HENRY, B.S.E. (Oklahoma Christian College), M.S. (O.S.U.), M.S. (Univ. of Tennessee, Knoxville), Ph.D. (ibid); Assistant Professor of Family Relations and Child Development 1988.

PAUL JACOB HILTPOLD, BA (Univ. of Texas, Austin), MA (ibid), Ph.D. (ibid); Assistant Professor of History, 1982.

TIMOTHY DOUGLAS HOGUE, B.S.C.E. (Massachusetts Inst. of Technology), M.S. (ibid), Ph.D. (ibid); Associate Professor of Electrical and Computer Engineering 1983, 1979.

MARK E. JOHNSON, BA (Univ. of California, Santa Barbara), MA (ibid), Ph.D. (ibid); Assistant Professor of Applied Behavioral Studies; 1985.

EDWARD JONES, BA (Central Connecticut, MA (Oklahoma Univ.), Ph.D. (ibid); Assistant Professor of English; 1987.

H. ION JONES, BA (Thiel College), MA (Ball State Univ.), Ed.D. (ibid); Assistant Professor of Curriculum and Instruction; 1989.

JERRY J. JORDAN, B.S. (Central State Univ.), M.S. (Univ. of Oklahoma), Ed.D. (Temple Univ.); Associate Professor of Health, Physical Education and Leisure; 1985.

MANJUNATH KAMATH, B. Tech. (Indian Inst. of Technology, Madras), M.E. (Indian Inst of Science); Ph.D. (Univ. of Wisconsin, Madison); Assistant Professor of Industrial Engineering and Management 1990, 1980.

STEPHEN G. KATSINAS, BA (Univ. of Illinois, Champaign-Urbana), MA (Southern Illinois Univ.), Ph.D. (ibid); Assistant Professor of Educational Administration and Higher Education; 1990.

PHILIP KENKEL, B.S. (Univ. of Kentucky), M.B.A. (ibid), Ph.D. (ibid); Assistant Professor of Agricultural Economics; 1990.

KENNETH J. KISER, BA (O.S.U.), M.S. (ibid), Ph.D. (Ohio State Univ.); Associate Professor of Sociology; 1977, 1970.

MICHAEL A. KIZER, B.S. (Oregon State Univ.), M.S. (ibid), Ph.D. (O.S.U.); Assistant Professor of Agricultural Engineering, 1987.

JAMES F. KNIGHT, B.Arch. (O.S.U.), MArch. (Univ. of Illinois); Professor and Head of the School of Architecture; 1990, 1979.

NORMA SUE KNIGHT, B.S.O.S. (Univ. of Nebraska, Lincoln), Ph.D. (ibid); Associate Professor of Food, Nutrition and Institution Administration; 1987, 1980.

PAULINE W. KOPECKY, B.B.A (Southwestern Univ.), M.Ed. (Univ. of Texas), Ph.D. (Univ. of Houston); Associate Professor of Economics; 1976, 1967.

BERNICE H. KOPEL, B.S. (Univ. of Minnesota), M.S. (Northern Colorado Univ.), Ed.D. (O.S.U.); Associate Professor of Food, Nutrition and Institution Administration; 1979, 1970.

JERZY S. KRASINSKI, M.S. (Univ. of Warsaw), Ph.D. (ibid); Professor of Electrical and Computer Engineering 1990.

TIMOTHY L. KREHBIEL, B.S. (Illinois State Univ.), M.S. (Purdue Univ.), Ph.D. (ibid); Assistant Professor of Accounting 1989.

JOHNNIE ROBERT KROPP, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Professor of Animal Science; 1988, 1975.

FRANK ALLEN KULLING, B.S. (Univ. of Tennessee), M.B.A (Pennsylvania State Univ.), Ed.D. (O.S.U.); Assistant Professor of Health, Physical Education and Leisure; 1988, 1986.

PAUL G. KUSSROW, B.S. (Central Michigan Univ.), BA (ibid), Ed.S. (ibid), Ph.D. (Univ. of Michigan); Professor of Educational Administration and Higher Education, and Director of Education Research; 1990.

CHALMER LABIG, BA (Ohio State Univ.), MA (Univ. of Tennessee), Ph.D. (Univ. of Texas, Austin); Associate Professor of Management 1988, 1984.

MELVIN E. LACY, B.S. (California State Univ.), M.S. (ibid), D.B.A. (Univ. of Colorado, Boulder); Associate Professor of Accounting 1981.

JAMES W. LAMKEY, B.S. (Cornell Univ.), M.S. (Univ. of Nebraska, Lincoln), Ph.D. (ibid); Assistant Professor of Animal Science; 1990.


CARL D. LATINO, B.S. (City College of the City Univ. of New York), M.S. (Pennsylvania State Univ.), Ph.D. (ibid); Associate Professor of Electrical Engineering 1986.

CONSTANCE W. LAWRY, BA (Univ. of Texas, Austin), M.L.S. (Univ. of Oklahoma), Ed.D. (O.S.U.); Assistant Professor of Journalism and Broadcast- ing and Interim Director of the College of Arts and Sciences Extension; 1988, 1982.

LINDA LEAVELL, BA (Baylor Univ.), MA (Rice Univ.), Ph.D. (ibid); Assistant Professor of English; 1986.

JONG JUNE LEE, B.S. (Sogang Univ.), M.S. (Texas A & M Univ.), Ph.D. (ibid); Assistant Professor of Electrical and Computer Engineering 1990, 1987.


CHARLES L. LEIDER, B.S. (Michigan State Univ.), M.C.P. (Yale Univ.); Associate Professor of Horticulture and Landscape Architecture; 1985.

JERROLD K. LEONG, B.S. (Cornell Univ.), M.P.S. (ibid), M.S. (Florida International Univ.), M.S. (Univ. of Hawaii), Ph.D. (ibid); Associate Professor of Food, Nutrition and Institution Administration; 1985.

BRUCE A. LESLESSY, B.S. (Univ. of Akron), Ph.D. (Ohio State Univ.); Assistant Professor of Physiological Science; 1981.

DAVID K. LEWIS, B.S. (Univ. of Minnesota), M.F. (Yale Univ.), Ph.D. (Oxford Univ.); Associate Professor of Forestry and Adjunct Associate Professor of Agricultural Economics; 1982.

PAUL Y. UN, MA (Univ. of Texas, Austin), Ph.D. (ibid); Associate Professor of Foreign Languages and Literatures; 1982, 1973.

ROSS O. LOVE, B.S. (Cornell Univ.), M.S. (Michigan State Univ.), Ph.D. (ibid); Professor of Agricultural Economics; 1990, 1982.

HUZHIU LI, B.S. (Fudan Univ.), M.S. (Univ. of Oklahoma), Ph.D. (ibid); Assistant Professor of Computer Science; 1989, 1985.

DON A. LUCCA, B.S. (Cornell Univ.), M.S. (Princeton Univ.), Ph.D. (Rensselaer Polytechnic Institute); Associate Professor of Mechanical and Aerospace Engineering 1990.

WILLIAM G. LUCE, B.S. (Univ. of Kentucky), M.S. (Univ. of Nebraska, Lincoln), Ph.D. (ibid); Regents Professor of Animal Science; 1987, 1968.


USA A. MANTINI, B.S. (Univ. of Pittsburgh), AM. (Harvard Univ.), Ph.D. (ibid); Assistant Professor of Mathematics; 1985.

L. LEE MANZER, BA (O.S.U.), M.B.A. (ibid), Ph.D. (ibid); Professor of Marketing; 1990, 1975.

ROBERT LEE MARIL, BA (Grinnell College), MA (Univ. of Indiana), Ph.D. (Washington Univ.); Assistant Professor of Sociology 1989.

VERNON AMOS MAST, B.S. (Eastern Mennonite College), M.S. (Univ. of Pennsylvania), Ph.D. (Ohio State Univ.); Associate Professor of Civil Engineering, 1983, 1980.
D. WAYNE MATTHEWS, B.S. (Harding College), M.S. (O.S.U.), Ph.D. (ibid); Assistant Professor of Family Relations and Child Development; 1979.

BLAYNE E. MAYFIELD, B.S. (Univ. of Missouri, Rolla), M.S. (ibid), Ph.D. (ibid); Assistant Professor of Computer Science; 1988.

KAREN MCEE, B.S. (Baylor Univ.), M.S. (Texas Tech. Univ.), Ph.D. (Texas A & M Univ.); Assistant Professor of Zoology; 1987.

JOSEPH P. MCCANN, B.Sc. (Edinburg Univ.), Ph.D. (ibid); Assistant Professor of Zoology; 1982.

JACK W. Pritchard, B.S. (O.S.U.), M.S. (ibid), Ed.D. (ibid); Professor of Agricultural Economics; 1990.

JACK W. PRITCHARD, B.S. (O.S.U.), M.S. (ibid), Ed.D. (ibid); Professor of Agricultural Economics; 1976, 1968.

CHARLES R RANSOM, B.BA (Univ. of Wisconsin, Madison), M.B.A. (ibid), Ph.D. (ibid); Associate Professor of Accounting 1986, 1981.

FREDERICK RAY, B.S. (Ohio State Univ.), M.S. (ibid), Ph.D. (Purdue Univ.); Professor of Animal Science; 1989, 1978.

DOREN A RECKER, BA (Southern Illinois), MA (ibid), MA (Univ. of Oklahoma), Ph.D. (ibid); Assistant Professor of Philosophy, 1988.


THOMAS G. REIBERGER, B.S. (Iowa State Univ.), Ph.D. (ibid); Assistant Professor of Animal Science; 1988.

ROBERT FRED REISBRECK, B.S. (Colorado State Univ.), M.S. (O.S.U.), Ed.D. (ibid); Associate Professor of Agricultural Education; 1990, 1966.

JEANINE N. RHEA, B.S. (Univ. of Nebraska), M.Ed. (Memphis State Univ.), Ed.D. (O.S.U.); Associate Professor of Administrative Services; 1981, 1976.

LAWRENCE RICE, B.S. (Colorado State Univ.), M.S. (ibid), D.V.M. (ibid); Professor of Veterinary Medicine and Surgery; 1981, 1976.

ARNON KIKIN, B.S. (Ben Gurion Univ., Israel), M.S. (ibid), Ph.D. (Weizmann Inst of Science, Israel); Assistant Professor of Botany, 1988.

SCOTT M. RITTER, B.S. (Brigham Young Univ.), M.S. (ibid), Ph.D. (Univ. of Wisconsin); Assistant Professor of Geology, 1986.

B. WARREN ROBERTS, B.S. (Berea College), M.S. (North Carolina State Univ.), Ph.D. (ibid); Assistant Professor of Horticulture and Landscape Architecture; 1987.

LINDA C. ROBINSON, B.S. (Louisiana State Univ.), M.S. (ibid), Ph.D. (Univ. of Tennessee); Assistant Professor of Family Relations and Child Development 1990.
LOUIS SEIG, BA (Louisiana State Univ.), MA (ibid), Ph.D. (Univ. of Minnesota); Associate Professor of Geography; 1990, 1986.

GLENN E. SELK, B.S. (Univ. of Nebraska, Lincoln), M.S. (OSU), Ph.D. (ibid); Associate Professor of Animal Science; 1990, 1986.

RICHARD V. SHAWLEY, B.S. (OSU), M.S. (ibid), D.V.M. (ibid); Professor of Veterinary Medicine and Surgery; 1988, 1973.

YUH-CHENG SHIAU, B.S. (National Taiwan Univ.), M.S. (Univ. of California, Berkeley), Ph.D. (ibid); Assistant Professor of Mechanical and Aerospace Engineering 1989.

JAMES R. SHOLAR, B.S. (Univ. of Tennessee, Martin), M.S. (OSU), Ph.D. (ibid); Associate Professor of Agronomy; 1987, 1975.

PHILLIP L. SIMS, B.S. (OSU), M.S. (ibid), Ph.D. (Utah State Univ.); Adjunct Associate Professor of Agronomy; 1977.

STEVEN H. SLUSHER, B.S. (Kansas State Univ.), M.S. (OSU), D.V.M. (Kansas State Univ.); Associate Professor of Veterinary Medicine and Surgery; 1983, 1978.

H. GENE SMITH, B.S. (OSU), M.B.A. (ibid), Ed.D. (ibid); Associate Professor of Occupational and Adult Education; 1983, 1971.

MICHAEL MYRLE SMITH, BA (Southern Illinois Univ.), MA (ibid), PhD. (Texas Christian Univ.); Associate Professor of History, 1976, 1970.

LEON J. SPICER, B.S. (Univ. of Minn& sota), M.S. (Univ. of Idaho), Ph.D. (Michigan State Univ.); Assistant Professor of Animal Science; 1988.

JEFFREY SPITLER, B.S.M.E. (Univ of Illinois, Urbana-Champaign), M.S. (ibid), Ph.D. (ibid); Assistant Professor of Mechanical and Aerospace Engineering 1990.

STEPHEN JOHN STADLER, B.S.Ed. (Miami Univ.), MA (ibid), Ph.D. (Indiana State Univ.); Associate Professor of Geography, 1986, 1980.

MICHAEL EDWARD STANO, BA (Univ. of Nevada, Reno), MA (Univ. of Colorado), Ph.D. (Univ. of Minn&sota); Associate Professor of Speech Communication; 1982, 1977.

GREGORY STEFANIUK, B.S. (Southern Illinois Univ.), M.S. (Brooklyn College), Ph.D. (Southern Illinois Univ.); Assistant Professor of Journalism and Broadcasting 1982.

WILLIAM ROBERT STENG, JR., BA (Rutgers Univ.), MA (Univ. of Florida), Ed.D. (O.S.U.); Professor of Journalism and Broadcasting 1985, 1969.

GARY R STEVENS, B.S. (Northern Illinois Univ.), M.S. (ibid), Ph.D. (Texas A & M Univ.); Assistant Professor of Statistics; 1986.

JANICE RAE STEWART, B.S. (Kansas State Univ.), MA (ibid), Ph.D. (ibid); Assistant Professor of Food, Nutrition and Institution Administration; 1983.


TANA WOOD STUFFLEBEAN, B.S. (OSU), M.E. (Central State Univ.), Ph.D. (OSU); Assistant Professor of Clothing, Textiles and Merchandising 1980, 1979.

MAUREEN A SULLIVAN, B.S. (Texas A & M Univ.), MA (State Univ. of New York, Stony Brook), Ph.D. (ibid); Assistant Professor of Psychology, 1990.

JOHN ANDREW SYVESTER, AB, (Harvard Univ.), MA (Univ. of Wisconsin), Ph.D. (ibid); Associate Professor of History; 1970, 1966.

KEITH A. TEGQUE, B.S.E.E. (OSU), M.S.E.E. (ibid), Ph.D. (ibid); Associate Professor of Electrical and Computer Engineering 1988, 1983.

JAMES STEEL THAYER, BA (Indiana Univ.), MA (ibid), M.T.S. (Harvard Univ.), Ph.D. (Univ. of Michigan); Associate Professor of Religious Studies; 1985, 1981.

MICHAEL F. THOMAS, B.S.BA (San Jose State Univ.), M.B.A. (ibid), Ph.D. (Univ. of Wisconsin); Assistant Professor of Accounting 1985.

JOHN W. THORNTON, B.S. (OSU), Ph.D. (Univ. of Washington); Professor of Zoology; 1974, 1960.

RUTH TOMES, B.S. (Univ. of Nebraska), M.S. (ibid), Ph.D. (ibid); Assistant Professor of Family Relations and Child Development; 1990.

PENGGER TONG, B.S. (Northeast Univ. of Technology), M.S. (Univ. of Pittsburgh), Ph.D. (ibid); Assistant Professor of Physics; 1990.

EVAN TONSENG, B.M. (Univ. of Kansas), M.M. (ibid); Associate Professor of Music; 1982, 1968.

DONALD R. TOPLIFF, B.S. (Kansas State Univ.), M.S. (Texas A & M Univ.), Ph.D. (ibid); Associate Professor of Animal Science; 1988, 1983.

DAVID ALAN TREE, B.S. (Brigham Young Univ.), M.S. (Univ. of Illinois), Ph.D. (ibid); Assistant Professor of Chemical Engineering 1990.

WILLIAM BRYAN TUCKER, B.S. (Mississippi State Univ.), MA (ibid), Ph.D. (Univ. of Kentucky); Assistant Professor of Animal Science; 1988.

STEPHEN W. TWEEDIE, BA (Cornell Univ.), M.Ed. (ibid), Ph.D. (Syracuse Univ.); Associate Professor of Geography, 1976, 1971.

THEODORE MERRILL VESTAL, BA (North Texas State Univ.), MA (Stanford Univ.), Ph.D. (ibid); Associate Professor of Political Science; 1990, 1988.

MOSES N. VIAYAKUMAR, B.S. (Univ. of Madras, India), M.S. (ibid), M.S. (Univ. of Illinois, Chicago), Ph.D. (ibid); Assistant Professor of Microbiology; 1988.

SHARON LEE VON BREMSEN, B.S. (Lock Haven Univ.), Ph.D. (Washington State Univ.); Assistant Professor of Plant Pathology, 1988.

FRANZ A VON SAUER, BA (Univ. of Kansas), MA (ibid), Ph.D. (Georgetown Univ.); Associate Professor of Political Science; 1975, 1969.

IBRAHIM A WAHEM, B.S. (Damascus Univ.), M.S. (Ohio State Univ.), Ph.D. (ibid); Assistant Professor of Food, Nutrition and Institution Administration; 1987.

WILLIAM THOMAS WALKER, B.M. (Univ. of Southern Mississippi), M.M. (Univ. of North Texas), M.M. (Univ. of Northern Colorado); Associate Professor of Music; 1981.

MARTIN WALLEN, BA (Enfield College), MA (Vanderbilt), Ph.D. (ibid); Assistant Professor of English; 1987.

ROBERT JAMES WARD, B.S. (Plymouth (Ohio) State College), M.M. (Michigan State Univ.), D.MusA (ibid); Assistant Professor of Music; 1988.

DAVID STEVEN WEBSTER, BA (Brandeis Univ.), MA (Univ. of Chicago), Ph.D. (Univ. of California, Los Angeles); Associate Professor of Educational Administration and Higher Education; 1990, 1987.

JAMES C. WEST, B.S.E.E. (Univ of Oklahoma), M.S.E.E. (Univ. of Kansas), Ph.D. (ibid); Assistant Professor of Electrical and Computer Engineering 1989.

B. PETER WESTERHOF, BA (Wittenburg (Ohio) Univ.), M.F.A. (Univ. of Connecticut); Associate Professor of Theater, 1990, 1985.
JOSEPH W. WESTPHAL, BA (Adelphi Univ.), MA (O.S.U.), Ph.D. (Univ. of Missouri); Associate Professor Political Science; 1984, 1975.

THOMAS S. WETZEL, B.S. (Northern Illinois Univ.), M.B.A. (ibid), Ph.D. (O.S.U.); Assistant Professor of Accounting 1986.

MARGARET A. WHITE, B.S. (Sam Houston State Univ.), M.B.A. (ibid), Ph.D. (Texas A & M College Station); Assistant Professor of Management; 1986.

SAMUEL WHFTSITT, BA (American Univ. of Beirut), MA (Sangamon State Univ.), Ph.D. (Texas A & M Univ.), M.S. (ibid), Ph.D. (Univ. of Illinois); Professor Emeritus of Veterinary Medicine and Surgery; 1986, 1965.

ROBERT C. WICKLEIN, B.S. (Western Kentucky Univ.), M.S. (Univ. of Alabama, Birmingham), Ed.D. (Virginia Polytechnic Institute and State Univ.); Assistant Professor of Occupational and Adult Education; 1986.

THOMAS A. WILE, BA (Univ. of California, Santa Barbara), MA (California State Univ., Fullerton), Ph.D. (Southern Illinois Univ.); Assistant Professor of Geography; 1989.

CHARLES R WILLIAMS, B.S. (Valparaiso Univ.), M.S. (Michigan State Univ.), Ph.D. (ibid); Assistant Director of Environmental Science and Technology; 1985, 1980.

ELIZABETH A. WILLIAMS, BA (Univ. of Oklahoma), MA (Univ. of Oregon), Ph.D. (Indiana Univ.); Assistant Professor of History; 1986.

ERVIN WILLIAMS, JR. B.S. (Kansas State Univ.), M.S. (ibid), Ph.D. (O.S.U.); Professor of Plant Pathology, 1960, 1969.

JANICE E. WILLIAMS, B.S. (Frostburg State Univ.), M.P.A. (California State Univ.), Ph.D. (Univ. of California, Los Angeles); Assistant Professor of Applied Behavioral Studies; 1988.

ELAINE WILSON, B.S. (Univ. of Southwestern Louisiana), M.S. (Univ. of Alabama), Ph.D. (O.S.U.); Associate Professor of Family Relations and Child Development 1988, 1973.

E. PAULINE WINTER, B.S. (Texas Woman's Univ.), MA (ibid); Associate Professor of Health, Physical Education and Leisure; 1970, 1965.

JOHN H. WYCOFF, III, B.S. (Univ. of Florida), Ph.D. (ibid); Assistant Professor of Veterinary Parasitology, Microbiology, & Public Health; 1986.

AWRENCE D. YATES, B.S. (Texas A & M Univ.), M.S. (ibid), Ph.D. (Univ. of Washington); Assistant Professor of Animal Science; 1988.

RAYMOND ZANONI, BA (Rutgers Univ.), B.S. (Univ. of Arizona), Ph.D. (ibid); Assistant Professor of Electrical and Computer Engineering 1990.

MICHAEL TERRANCE ZAVY, B.S. (Cornell Univ.), M.S. (Univ. of Florida), Ph.D. (ibid); Assistant Professor of Animal Science; 1983.

ROGER C. ZIERAU, B.S. (Trinity College, Ph.D. (Univ. of California, Berkeley); Assistant Professor of Mathematics; 1988.

Associate Members Emeriti

MARIAN F. ABBOTT, B.M.E. (Central Methodist College), M.M. (Wichita State Univ.); Associate Professor Emeritus of Music; 1990, 1970.

JEANNE L. AGNEW, B.A. (Queen's Univ.), MA (ibid), Ph.D. (Radcliffe College); Professor Emeritus of Mathematics; 1984, 1953.


ARMOND DUDLEY BAREFOOT, B.S. (O.S.U.), M.S. (ibid); Associate Professor Emeritus of Agricultural Engineering 1986, 1953.

GEORGE W. BAUMILLER, Diploma in Interior Architecture (State C. of Building, Warsaw, Poland) M.S. (Warsaw Inst. of Technology); Associate Professor Emeritus of Architecture; 1988, 1972.

FREDERICK M. BLACK, B.S. (O.S.U.), M.S. (ibid); Assistant Professor Emeritus of Business Administration; 1979, 1953.

JOHN RICHARD BOSWORTH, B.A (Univ. of Illinois), MA (ibid); Assistant Professor Emeritus of Philosophy, 1966, 1962.

WENDELL BOWERS, B.S. (Univ. of Illinois), M.S. (ibid); Professor Emeritus of Agricultural Engineering, 1985, 1967.

JULIAN H. BRADSHIER, A.B. (Univ. of South Carolina), MA (Univ. of Colorado), Ph.D. (Univ. of California); Professor Emeritus of Economics; 1977, 1948.


CHARLIE A. BURNS, B.S. (O.S.U.), M.S. (ibid), Ed.D. (ibid); Professor Emeritus of Agricultural Education; 1985, 1953.


RAYMOND E. CHAPEL, B.S. (O.S.U.), M.S. (ibid); Professor Emeritus of Mechanical and Aerospace Engineering and Director Emeritus of Engineering Research and Budget 1978, 1947.

GEORGE REHE PHILIP COLLINS, B.S.A (Univ. of Toronto), M.S. (Univ. of Oklahoma); Professor Emeritus of Agricultural Economics; 1970, 1939.

HYNLE S. CONVERSE, B.A (Smith College), B.D. (Union Theological Seminary), Ph.D. (Columbia Univ.); Professor Emeritus of Religious Studies; 1986, 1968.

GEORGE EARL COOK, B.S. (O.S.U.), M.S. (ibid); Associate Professor Emeritus of Agricultural Engineering, 1986, 1952.

CHARLES EDWARD DENMAN, B.S. (O.S.U.), M.S. (Utah State Univ.); Associate Professor Emeritus of Agronomy; 1945, 1949.


MARY L FRYE, BA (Univ. of Hamlin), M.S. (O.S.U.), Ed.D. (ibid); Assistant Professor Emeritus of Health, Physical Education and Leisure; 1988, 1968.

J. LLOYD GARNER, B.S. (East Central State College, Oklahoma), Ed.M. (Univ. of Oklahoma); Associate Professor Emeritus of Business Education and Office Management; 1976, 1942.


LEMUEL D. GROOM, BA (Univ. of Oklahoma), M.S. (O.S.U.); Associate Professor Emeritus of Journalism and Broadcasting; 1977, 1946.

WERNER GRUNINGER, BA (Univ. of British Columbia), MA (Duke Univ.), Ph.D. (Univ. of Washington); Professor Emeritus of Sociology; 1985, 1974.

HERMAN HINRICHS, B.S. (O.S.U.), M.S. (ibid); Professor Emeritus of Horticulture; 1976, 1935.

JOHN EDWARD HOFFMAN, B.S. (Univ. of Oklahoma), MA (ibid); Associate Professor Emeritus of Mathematics; 1987, 1956.


JAMES A. JACKSON, BA (Southwestern College), M.S. (O.S.U.); Ph.D. (ibid); Assistant Professor Emeritus of Veterinary Parasitology, Microbiology and Public Health; 1986, 1968.


WILLIAM M. KINCAID, B.S. (Univ. of Colorado), M.S. (ibid), Ph.D. (Univ. of Texas); Professor Emeritus of Marketing, 1986, 1969.


FRED LECRONE, B.S. (O.S.U.), M.S. (Iowa State Univ.); Associate Professor Emeritus of Horticulture and Assistant Dean Emeritus of Resident Instruction in Agriculture; 1973, 1939.

MARY E. LEIDIGH, B.S. (Texas Tech College), M.S. (Univ. of Texas); Professor Emeritus of Food, Nutrition and Institution Administration; 1977, 1945.

GEORGE W. A. MAHONEY, B.S. (Univ. of Illinois), M.S. (O.S.U.), Ph.D. (ibid); Associate Professor Emeritus of Agricultural Engineering 1986, 1949.

VIRGINIA LEWIS MARSDEN, B.S. (Central Missouri State College), MA (Colorado State College of Education); Associate Professor Emeritus of Education; 1975, 1953.

GLADYS BOBECk MARSHALL, B.S. (O.S.U.), M.S. (ibid); Assistant Professor Emeritus of Family Relations and Child Development 1971, 1947 (1939-43).

EVANGIE McGLON, B.S. (Central State Univ., Oklahoma), M.T. (ibid), M.Ed. (ibid), Ph.D. (Univ. of Oklahoma); Associate Professor Emeritus of Applied Behavioral Studies; 1989, 1978.

WILLIAM M. McMURTRY, B.M.E. DAVID ADOLF SANDER, B.S. (Univ. of Nebraska), M.S. (Purdue Univ.); Professor Emeritus of Agromony; 1982, 1957.


WILLIAM E. TAYLOR, B.S. (O.S.U.), M.S. (ibid); Associate Professor Emeritus of Agricultural Engineering 1981, 1952.

HOUSTON EVERETT WARD, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Professor Emeritus of Agricultural Economics; 1977, 1935.

DAN WESLEY, BA (Berea College), M.S. (Boston Univ.) MA (George Peabody College for Teachers), Ph.D. (O.S.U.); Professor Emeritus of Sociology and Director Emeritus of Arts and Sciences Student Services; 1984, 1960.

ERIC IDWAY WILLIAMS, M.R.C.V.S. (Royal Veterinary College), F.R.C.V.S. (Royal College of Veterinary Surgeons), M.S. (O.S.U.); Professor Emeritus of Veterinary Medicine and Surgery; 1988, 1961.

VICTOR WOLFRA M, B.S. (illlardi School of Music), M.S. (ibid); Professor Emeritus of Music; 1982, 1960.

WILLIAM ROSE WRAY, BA (Yale College), MA (Yale Univ.), Ph.D. (ibid); Associate Professor Emeritus of English; 1981, 1966.


LEON H. KLEIN, B.S. (O.S.U.), M.S., Ph.D. (ibid); Associate Professor Emeritus of Veterinary Pathology; 1986, 1951.

DAVID ADOLF SANDER, B.S. (Univ. of Nebraska), M.S. (Purdue Univ.); Professor Emeritus of Agromony; 1982, 1957.


WILLIAM E. TAYLOR, B.S. (O.S.U.), M.S. (ibid); Associate Professor Emeritus of Agricultural Engineering 1981, 1952.

HOUSTON EVERETT WARD, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Professor Emeritus of Agricultural Economics; 1977, 1935.

DAN WESLEY, BA (Berea College), M.S. (Boston Univ.) MA (George Peabody College for Teachers), Ph.D. (O.S.U.); Professor Emeritus of Sociology and Director Emeritus of Arts and Sciences Student Services; 1984, 1960.

ERIC IDWAY WILLIAMS, M.R.C.V.S. (Royal Veterinary College), F.R.C.V.S. (Royal College of Veterinary Surgeons), M.S. (O.S.U.); Professor Emeritus of Veterinary Medicine and Surgery; 1988, 1961.

VICTOR WOLFRA M, B.S. (illlardi School of Music), M.S. (ibid); Professor Emeritus of Music; 1982, 1960.

WILLIAM ROSE WRAY, BA (Yale College), MA (Yale Univ.), Ph.D. (ibid); Associate Professor Emeritus of English; 1981, 1966.

Contains course descriptions listed alphabetically by fields (See the College of Osteopathic Medicine of OSU College Catalog for osteopathic medicine course descriptions.)

Explanation of Course listings
A course listing is comprised of the following elements, in order:

- **Course Number.** All courses are identified by numbers composed of four digits. The first digit indicates the class year in which the subject is ordinarily taken, although enrollment is not exclusive as to student classification, the second and third digits identify the course within the field and the last digit identifies the number of semester credit hours the course carries. A course number beginning with 0 indicates that the course does not carry University credit. A course number ending in 0 indicates that the course carries variable credit. An asterisk (*) following the four-digit number indicates the course is approved for graduate credit.
- **Prerequisites:** Only graduate students and selected seniors with consent of the instructor may enroll in them. Courses numbered 3000 and 4000 may be taken for graduate credit if the course number is labeled with an asterisk. Extra work may be required of a graduate student in a 3000- or 4000-level course.
- **General Education Requirements Codes.** The capital letters in parentheses preceding some course titles designate courses fulfilling various undergraduate general education requirements. (See "Academic Regulations.")
- **Course Title.** The title of the course is printed in bold face letters.

**Statement of Variable Credit.** Each course number ending in zero is followed by a statement of the credit that may be earned. Typical entries are 1-6 credits, maximum 6 and 1-3 credits, maximum 12, the first part of the entry indicating the permissible credit per enrollment, followed by a statement of the maximum credit which may be earned in the course through repeated enrollment.

**Description of Course Content.** The content of the course and its major emphases are described. Courses which are taught under another name and number are indicated by the statement "Same course as 0000. Credit may not be earned in both courses so cross-referenced."

**Abbreviations Used**

A&S Arts and Sciences
ABSED Applied Behavioral Studies in Education
ACCTG Accounting
AEROS Aerospace Studies
AG Agriculture
AGEC Agricultural Economics
AGED Agricultural Education
AGEN Agricultural Engineering
AGRON Agronomy
ANSI Animal Science
ANTH Anthropology
ARCH Architecture
ART Art
ASTRO Astronomy
ATHL Athletics
AVSED Aviation and Space Education
BCOMM Business Communications
BIOCH Biochemistry
BISCI Biological Science
BOT Botany
BUSAD Business Administration
BUSED Business Education
BUSL Business Law
BUSPR Business Professions
CHEM Chemistry
CHENG Chemical Engineering
CHIN Chinese
CIED Curriculum and Instruction Education
CWEN Civil Engineering
COMSC Computer Science
CONST Construction Management Technology
DHM Design, Housing and Merchandising
EARED Educational Administration and Higher Education
ECEN Electrical and Computer Engineering
ECON Economics
ECT Electronics and Computer Technology
EDUC Education
ENGL English
ENGR Engineering
ENGSC Engineering Science
ENTO Entomology
ENVIR Environmental Science
EPT Electrical Power Technology
FIN Finance
FIRET Fire Protection and Safety Technology
FLL Foreign Languages and Literatures
FNIA Food, Nutrition and Institution Administration
FOR Forestry
FRCD Family Relations and Child Development
FRNCH French
GENAD General Administration
GENE Genetics
GENEN General Engineering
GENT General Technology
GEOG Geography
GEOI Geology
GRAD Graduate
GREEK Greek
GRMN German
HEC Home Economics
HIST History
HLTH Health
HONOR Honors
HORT Horticulture
HPEL Health, Physical Education and Leisure
HRAD Hotel and Restaurant Administration
IDS Interdisciplinary Studies
INDEN Industrial Engineering and Management
JAPAN Japanese
JB Journalism and Broadcasting
IA Landscape Architecture
LATIN Latin
LEIS Leisure
Accounting (ACCTG)

2103 Principles of Accounting. Prerequisite: 2103. Managerial accounting concepts and objectives, planning and control of sales and costs, analysis of costs and profits.

3013 Federal Income Taxation. Prerequisite: 2203. Federal income tax and its relationship to business decision-making; primary emphasis on recognition of the important tax consequences that attach to business transactions and the impact on business decision making.

303 Survey of Accounting Principles. Elementary financial and cost accounting with special emphasis on statement interpretation and industrial problems. No credit for students with credit in 2103 or 2203.

3203 Cost Accounting. Prerequisites: 2203 with a grade of ‘C’ or better and STAT 2023. Cost accumulation systems, allocating product costs, planning and controlling costs, standard costing, and profitability analysis.


3403 Financial Accounting II. Prerequisite: 3003 with a grade of ‘C’ or better. Continuation of financial accounting theory and problems.

3603 Accounting Information Systems. Prerequisite: 2203. Accounting system design and installation.

4010 Accounting Projects. 1-6 credits, maximum 6. Prerequisites: consent of instructor and 3200 and 3403. Special topics, projects and independent study in accounting.

4013 Advanced Federal Income Taxation. Prerequisite: 3013 with a grade of ‘B’ or better. Federal income tax law applicable to individuals, corporations, partnerships, trusts and estates, and other specialized topics.

4203 Topics in Management Accounting. Prerequisites: 2203 with grade of ‘C’ or better and MGMT 3223. Integrated course in cost and management accounting; use of accounting information for internal decision making.

4303 Non-business, Fiduciary and Institutional Accounting. Prerequisite: 3403 with grade of ‘C’ or better. Fund and governmental accounting, bankruptcy, receiverships, estates and trusts.

4453 EDP Auditing. Prerequisite: 4503 or consent of instructor. EDP auditing as it applies to the business environment. Impact of computer-based systems on control and auditing; total systems control analysis, and specific EDP auditing techniques as they apply to computer-based systems.

4503 Auditing. Prerequisite: 3403, 3603. Auditing theory, procedures and practices.

4713 International Accounting. Prerequisite: senior level standing. Present-day multinational accounting problems, including world-wide differences in financial reporting, efforts at harmonizing these differences, and planning and control in multinational enterprises.

5000 Thesis. 1-6 credits, maximum 6. For students writing reports and theses in accounting.

5013 Seminar in Tax Research. Prerequisite: 4013 or consent of instructor. Development and administration of federal tax law with emphasis on the development of tax research skills.

5023 Seminar in Estate and Gift Taxation. Prerequisite: 5013 or consent of instructor. Federal tax law applicable to estate and gift taxation and income taxation of estates and trusts.

5033 Seminar in Oil and Gas Taxation. Prerequisite: 5013 or consent of instructor. Federal income tax laws applicable to the petroleum and other extractive industries.

5043 Seminar in Partnership Taxation. Prerequisite: 5013 or consent of instructor. Federal income tax applicable to partnerships and other entities within their capacity as corporate shareholders.

5103 Financial Accounting and Analysis. Prerequisite: admission to MBA program or consent of MBA director. Development of the ability to read and to analyze financial statements and to use this information along with other types of information in decision making.

5110 Graduate Reading or Individual Work in Accounting. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Individual work on special topics, projects, or readings selected to acquaint students with significant accounting literature.

5113 Managerial Accounting. Prerequisite: 5103. Interpretation of accounting data in planning, controlling and decision making.

5133 Seminar in Oil and Gas Accounting. Financial accounting and reporting rules and practices in the petroleum industry.

5203 Seminar in Contemporary Accounting Theory I. Prerequisite: 3403. Origin and development of accounting and a critical study of modern accounting theory.

5303 Seminar in Contemporary Accounting Theory II. Prerequisite: 3403. Critical study of contemporary accounting theory.

5400 Practicum in Professional Accounting. 1-6 credits, maximum 6. Prerequisite: 30 semesters credit hours of accounting. An accounting policy course studying auditing, tax, systems, internal and external reporting and international aspects of business cases.

5503 Advanced Auditing. Prerequisite: 4503. Emphasis on auditing aspects of EDP, use of statistical sampling techniques in connection with audits of financial data, filings with the SEC and other regulatory agencies and other public accounting related topics.

5603 Accounting-based Information Systems. Prerequisite: 18 credit hours of accounting including 4203. Concepts underlying the design and use of an effective accounting information system.

5803 Seminar in Cost-Managerial Accounting. Prerequisite: 18 credit hours of accounting. Intensive study of cost managerial accounting theory relating to problems of an advanced nature.

6902 Research Report. Prerequisite: consent of supervising professor and coordinator of graduate programs in accounting. Methods used in research and report writing in accounting. Independent investigation and writing of an acceptable report on a topic approved by the student’s supervising professor. Restricted to students in the M.S. in accounting degree and not available to students who have credit in 5000.

6900 Research and Thesis. 1-18 credits, maximum 36. Prerequisite: approval of advisory committee. For students working on the doctoral degree.

6110 Graduate Reading in Accounting. 1-3 credits, maximum 10. Prerequisite: consent of supervising professor and coordinator of graduate programs in accounting. Supervised reading of significant literature not included in regularly scheduled courses.

6703 Seminar in Accounting Research. Prerequisites: Doctoral student status and consent of coordinator of graduate programs in accounting. Theoretical literature and research methodology in accounting.

Aerospace Studies-Air Force (AEROS)

1111 The Air Force Today I. Lab. 1. Doctrine, mission and organization of the United States Air Force through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, and aerospace support forces.


2111 The Development of Air Power I. Lab. 1. Growth and development of aerospace power through history beginning with first manned flights and continuing through World War II.

2211 The Development of Air Power II. Lab. 1. Development and growth of aerospace power from the period following World War II through the Vietnam conflict; concepts of peaceful deployment of US air power.

3101 Air Force Leadership and Management I. Lab. 1. The study of the fundamental leader- ship, management, and communication skills required of an Air Force junior officer. Basic managerial processes, management of forces in changing environments, organizational power, politics and managerial strategy and tactics.

3203 Air Force Leadership and Management II. Lab. 1. The application of leadership, management, and communication skills required of an Air Force junior officer. The individual as a leader in the Air Force environment, individual motivational and behavioral processes, group dynamics, leader and management ethics, counseling and evaluating are discussed.
Agricultural Economics (AGEC)

1114 (5)Introduction to Agricultural Economics. Economic theory of production, marketing and consumption of agricultural products. The role of the farmer in a global economy. Policy issues to achieve efficiency and welfare goals in agriculture. No general education credit for students taking ECON 1113 or ECON 2013.

2103 Principles of Economics Applied to Agriculture. Prerequisite: 1114. Macroeconomic theory and national economic problems, monetary inflation, unemployment, and monetary and fiscal policies and their impacts on agricultural industries and farms.

3010 Internship in Agricultural Economics. 1-6 credits, maximum 6. Prerequisite: approval of internship committee and adviser. Supervised work experience with approved public and private employers in agricultural economics including banks, farm credit services, agricultural chemical firms, Soil Conservation Service, congressional offices and other opportunities. Credit will not substitute for required courses. Graded on pass-fail basis.

3203 Agricultural Price Analysis. Prerequisites: 1114, 3213 or AG 2112, MATH 1513. Economic theory, statistics and data combined to describe, understand and forecast agricultural crop relationships and variation. Quantitative techniques developed to determine the factors causing price variation and to measure trend, cyclical, seasonal and random price variation.

3213 Quantitative Methods in Agricultural Economics. Lab 2. Prerequisites: 1114, MATH 1513. Indices, graphics, budgeting, discounting, basic statistical measures, use of micro-computers, and price analysis. Basic background methods for some courses involving analysis.

3303 Agricultural Marketing. Prerequisites: 1114, 3213, 3413. The agricultural marketing system, its importance to the economy and the role of the individual firm manager: Futures contracts, hedging, and the use of decision aids.

3313 Agribusiness I. Prerequisites: 1114, ACCTG 2103. Managerial functions and applications in agribusiness. Alternative forms of ownership and principles of agricultural cooperatives. Acquisition, organization and management of personnel, financial assets, and physical assets for agribusiness firms, including cooperatives. Procurement and merchandising strategies under different economic conditions and business structures.

3403 Agricultural Business Records and Analysis. Lab 2. Prerequisites: 3413 and ACCTG 2103. Financial accounts, production and statistical records and their practical application to the successful management of the farm or ranch and other agricultural businesses.

3413 Farm and Ranch Management I. Lab 2. Prerequisites: 1114, MATH 1513. Production planning with budgeting, financial records and income tax management for the individual farm or ranch business.

3503 Natural Resource Economics. Prerequisite: 1114. Economic, social, physical, institutional factors in a framework for analyzing problems and policies related to natural resources, externalities, ownership rights, government regulation.

3602 Agricultural Finance. Prerequisites: 3313 or 3413, ACCTG 2103. Farm financial management; preparation and analysis of net worth, cash flow and income statements, including budgeting, ratio analysis, financial intermediaries; serving agriculture; procedures for evaluating investments; alternative means of acquiring control of farm resources.

3690 Special Problems in Agricultural Economics. 1-3 credits, maximum 3. Directed study of selected agricultural economics topics.

4313 Agricultural Marketing and Prices. Prerequisite: 3313. Analyzing the marketing and pricing of agricultural products based on supply, demand and equilibrium. Analyzing issues with emphasis on system-wide approaches. Economic tools and techniques for making marketing decisions.

4323 Agribusiness II. Prerequisites: 3313; 3603 or FIN 3113. Strategic planning in a risky environment for agribusiness firms including core operations. Integration of the principles of agricultural economics, finance, marketing, management, and economics to develop effective agribusiness policies and strategies. Evaluation of changes in the agricultural environment that will affect the future agribusiness planning environment.


4343 International Agricultural Markets, Trade and Development. Prerequisites: 2103 and 3303. International trade of agricultural products with emphasis on theory of trade and monetary flows, national trade policies and world market structures for agricultural products. Impact of trade on the domestic agricultural sector and the role of trade in agricultural economics.

4403 Farm and Ranch Management II. Prerequisites: 3413 and MATH 1513. Production planning with linear programming and other tools and methods of planning under uncertainty; economic analysis, decision models and decision making in agricultural industries and farms. Contract law, tort law, property law, real estate transactions, oil and gas leases, business organization, estate planning and credit.

4413 Agricultural Law. Prerequisites: 1114 and junior standing. Concepts of law and legal philosophy related to agricultural problems and applications. Contract law, tort law, property law, real estate transactions, oil and gas leases, business organization, estate planning and credit.

4503 Environmental Economics and Resource Development. Prerequisite: 1114 or ECON 2102. Analysis of market and non-market aspects relating to conservation, natural resource development and environmental quality. Legislation and role of governmental agencies in resource conservation and development. Recreational, aesthetic and other qualitative considerations relating to natural resources and environment.

4513 Farm Appraisal. Lab 2. Prerequisite: 3413. Estimating the market value of agricultural real estate using the three approaches to value. Determining the feasibility and profitability of land purchases.

4703 American Agricultural Policy. Prerequisites: 1114 and upper-division standing. Economic characteristics and problems of agriculture: evolution and significance of programs and policies.

4723 Rural Economic Development. Prerequisite: 1114. Concepts and theories of regional and community economics, including input-output, economic base, simulation, budget location, and routing. Oklahoma applications.

4902 Agricultural Economics Seminar. Prerequisite: senior standing in agricultural economics. Contemporaneous problems in agricultural economics; career exploration; agriculture in the economics of the nation and the world.

4911 Agricultural Economics Seminar. Prerequisite: senior standing in agricultural economics. Understanding and interpreting politics and policies related to the quality of the environment, including land, water and related resources, analyzed in an economic framework.

4920 Problems of Agricultural Economics. 1-6 credits, maximum 6. Open to students with consent of instructor only. Research on special problems in agricultural economics.

5000 Thesis or Report in Agricultural Economics. 1-6 credits, maximum 6. For students working for a M.S. degree in agricultural economics. Requires an original research project under the direction and supervision of a major professor.

5010 Professional Experience in Agricultural Economics. 6 credits, maximum 6. Prerequisites: approval of internship committee and adviser. Supervised professional experience with approved public and private employers in agricultural economics including banks, production credit associations, federal land banks, soil conservation service, and other agricultural related firms. Credit will not substitute for required courses. Designed for Master of Agricultural program.

5101 Research Methodology. The philosophical bases for research methods used in agricultural economics. Alternative research methods compared. Alternative approaches to planning, managing and performing research.
Agricultural Economics (AGED)  
3103 Foundations and Philosophies of Teaching Agricultural Education. Lab 2. Prerequisite: 21 semester credit hours of agriculture with a 2.50 GPA. Roles and responsibilities of the agricultural education teacher; types of program offerings; steps of the teaching-learning process; place of agricultural education in relation to other educational programs in school systems.  
3203 Planning the Community Program in Agricultural Education. Lab 2. Prerequisite: 3103. Determining resources and trends of local communities with respect to agricultural production and agribusiness. Emphasis on agricultural education program policies, FAA chapter advisement, planning and managing the integrity of responsibilities and authorship of completion of records and reports required of a teacher of agricultural education in Oklahoma.  
3302 Organizing Agricultural Programs for Rural Groups. The nature of adult learning; methods of organizing and implementing educational programs for adult individuals and groups, dynamics of group action; application of the most effective methods and techniques for organizing adults to solve problems in agriculture and community living.  
3403 Programs and Personnel of the Cooperative Extension Service. Enabling legislation, program areas, teaching methods used, staffing patterns, funding and program administration. Special emphasis on entry-level positions and responsibilities of each.  
3510 History, Functions and Clinical Experiences in Agricultural Education. 1-2 credits, maximum 1. Planned experiences in agricultural education career areas to acquaint students with the diversity of responsibilities and audiences served. Course planning to satisfy requirements for admission to teacher education and student teaching and to develop technical competencies.  
4103 Methods and Skills of Teaching and Management in Agricultural Education. Lab 2. Prerequisites: 3203, junior standing in the College of Agriculture, full admission to the University Teacher Education program and concurrent enrollment in 4103. Facets of the teaching-learning process including teaching methods, basic teaching skills, proper classroom management techniques and motivational techniques and ideas. Preparation for student teaching which is to be completed during the same semester.  
4200 Student Teaching in Agricultural Education. 10 credits. Lab 30. Prerequisites: 3203, junior standing in the College of Agriculture, full admission to the University Teacher Education program and concurrent enrollment in 4200. Full-time directed experience in an approved agricultural education department. Application of techniques and skills in agricultural education as related to selecting, adapting, utilizing, evaluating, curriculum materials and experiences to meet educational goals and facilitate learning for individual students. Roles, responsibilities, interactions, of school personnel and parents. Study of professional organization and planning and operation of school systems.  
4300 Agricultural Education Internship. 3-10 credits. Prerequisites: professional course sequence and consent of adviser/internship coordinator. Supervised full-time internships in approved county extension offices, businesses or governmental agencies, for students preparing for agricultural education. Not intended for teacher certification. Maximum of 12-credit internship in addition to a report.  
4713 (1) International Programs in Agricultural Education and Extension. World hunger and its root causes. The function of international agencies, organizations, foundation and churches in improving the quality of life for people of the developing nations. Roles of agricultural education and extension at all levels for enhancing the effectiveness of indigenous programs of rural development and adult education.  
4990 Seminar and Problems in Agricultural Education. 1-3 credits, maximum 6. Group small group and/or individual study and research in problems relating to programs of occupational education in agriculture.  
5000 Research and Seminar. 1-6 credits, maximum 6. Independent research and thesis under the direction and supervision of a major professor.  
5100 Organizing Curriculum and Programs of Agricultural Education. 1-3 credits, maximum 6. Studies of student and community agricultural needs as bases for localizing, personalizing and utilizing a basic core curriculum and other components essential to effective local agriculture educational programs.  
5122 Adult Education: Organization and Method. Determining the adult education needs and interest of the community. Securing and organizing the information needed for adult education programs and planning teaching activities.  
5300 Extension Teaching Methods. 1-3 credits, maximum 6. Teaching methods applicable to extension work, their interrelationships and relative effectiveness. Result demonstration, method demonstration, meetings, tours, field days and exhibits.  
5402 Managing Farmer Organizations. Purposes and objectives of young farmer groups. Procedures for establishing and operating local chapters and analysis of the role of the agricultural education teacher as adviser. Determining educational needs and interests of members. Securing and organizing information for individual and group instruction, planning training activities, tours and/or field trips to observe programs in operation.  
5500 Directing Programs of Supervised Experience. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Determining the supervised training needs and opportunities of individuals. Planning for supervision of agricultural education training pro grams and 4-H club projects. Analysis of training opportunities in production agriculture, agricultural businesses and individual career development.  
5712 Guidance and Leadership Development of Agricultural Youth. Providing for guidance of agricultural and agricultural occupations. Sponsoring and advising youth groups; developing leadership through the local FFA chapter, 4-H Club and other youth organizations.  
5822 Advanced Methods of Teaching Agriculture. Developing facility in the use of conferences, demonstrations, field trips, individual instruction, laboratory projects, supervised or directed study, surveys, visual aids and forms of programmed learning.  
5862 Curriculum Design and Methodology for Alternative Agriculture. The methodology, development and utilization of curriculum for instructional programs focusing upon alternatives in agriculture and agricultural enterprises. Roles and components of curriculum for teaching about new and emerging occupations and careers in agriculture.  
5940 Agricultural Education Workshop. 1-3 credits, maximum 8. For experienced teachers. Curriculum problems, farm practices adapted to classroom and development of farm projects in Oklahoma. Development of units of instruction and methods of teaching or special concerns in agricultural education.  
5950 Research Design in Occupational Education. 1-3 credits, maximum 6. Research tools as aids in decision making. Literature, logic, survey techniques, data analysis and design and the computer are emphasized. Studies in vocation and technical education are reviewed and recommendations for graduate research papers prepared.  
5990 Problems in Agricultural and Extension Education. 1-3 credits, maximum 6. Securing and analyzing data related to critical problems and investigation in designated areas of agricultural education.  
6000 Research in Agricultural Education. 1-16 credits, maximum 16. Prerequisite: approval of major adviser. Open to students pursuing graduate study beyond the requirements for a master’s degree. Independent research and thesis under the direction and supervision of a major professor.  
6100 Developments in Agriculture and Extension Education. 1-3 credits, maximum 6. Developing and teaching methods, their interrelationships and relative effectiveness. Survey techniques, research design, statistics and the computer are emphasized. Studies in vocational and technical education are reviewed and proposals for graduate research papers prepared.  
6212 Teaching Agriculture in Higher Education. 1-3 credits, maximum 6. The teaching-learning matrix functioning in both undergraduate and advanced study in the field of agriculture. Discriminate review and assessment of recently developed instructional methods and trends.  
6200 County Extension Program Development. 1-3 credits, maximum 6. A systematic study and use of methods of developing county extension programs, giving attention to sources of essential basic information, determination of problems and needs of people, functions of lay people and the various groups of extension workers. Uses of committees, step-by-step procedures, coordinated county and state plans and characteristics of effective programs.  
6220 Assessment and Evaluation of Educational Programs in Agriculture. 1-3 credits, maximum 6. Prerequisites: professional course sequence to educational programs. Instructional extension and other educational programs are assessed and the systems approach used to revise current programs and re-direct effort.
AGEngineering (AGEN)

1011 Introduction to Surveying. Lab 3. Prerequisite: trigonometry. Fundamentals of surveying including leveling, topographic surveying, cadastral surveys and the layout of engineer- ing facilities.


2012 Agricultural Energy Conversion. Prerequisite: PHYS 2114. Energy use in the U.S. food and fiber system, supply and demand for energy from various sources, thermodynamic constraints on energy sources, use and limi- tation of alternate energy sources.


3113* Environmental Engineering. Prerequisites: 3013, PHYS 2114. Physiologic mechanics by which plants and animals adjust to their environment, environmental control for ani- mal and plant structures, equipment and faci- lities used for environmental control of ani- mals and plant structures.

3212* Agricultural Machinry. Prerequisites: 2012 and ENGSC 2122. Function and operation of agricultural machinery, soil dynamics and till- age machinery, selection and management of agricultural machinery.

3323 Hydraulic Applications in Soil and Water. Prerequisite: 3013. Design of irrigation sys- tems, open channel flow systems, and con- servation structures. At least one-half devoted to design methodology for hydraulic systems involved in soil and water conservation.


4001 Seminar. Prerequisite: senior standing. Tech- nical and professional literature including preparation and presentation of papers.

4023* Agricultural Equipment Design. Lab 3. Pre- requisites: 3023, 4212. Design of complex agricultural equipment: Project selection, patent search, market evaluation, and design of machine elements. Stu- dents will participate as design team mem- bers through prototype construction and evaluation.


4212* Agricultural Power. Prerequisites: 3013, 3212, ENGSC 2213. Tractors in agricultural power units; fuel; accessories; and their relation- ship to tractor performance; tractor stability and traction. Design of power systems for agricul- tural applications.


4313* Introduction to Hydrology. Prerequisite: CHEM 1515, PHYS 2014, LIVEN 3833 or AGEN 3013. Surface and groundwater hydrol- ogy and their application in engineering prob- lems. The hydrolologic cycle, weather and hy- drology, precipitation, evaporation, transpara- tion, subsurface waters, stream flow hydrographs, hydrologic and hydraulic stream routing, probability of hydrologic events, ap- plication of hydrologic models. Same as LIVEN 3843.

4400* Special Problems. 1-4 credits, maximum 4. Investigation of specialized areas of agricul- tural engineering.


5000 Thesis and Research. 1-6 credits, maximum 6. Prerequisite: consent of major professor.

5030* Engineering Practice. 1-12 credits, maximum 12. Prerequisite: B.S. degree in agricultural engineering. The identification, analysis and synthesis of an authentic problem in agricul- tural and biological engineering. Solution of the problem will involve making engineering decisions tempered by real-time restraints, economic realities, and limited data with due consideration for environmental and social im- plications.

5412* Instrumentation in Biological Process Con- trol System. Prerequisite: 3023 or equivalent. Analysis of transducers for on-line measure- ment and control of biological processes. Em- phasis on selection of measurement tech- niques and transducers to sense physical properties of biological materials. Application to agricultural and food processing industries.

5501* Seminar. Discussion of current literature with special emphasis on research and experimen- tal techniques.

5512* Experimental Engineering Analysis. Prerequi- site: STAT 4023. Design and analysis of engineering experiments, error sources and prediction equations using statistical theory.

6000* Research and Thesis. 1-10 credits, maximum 30. Prerequisite: approval by the student's advisory committee. Independent research and doctoral thesis preparation under the cogni- tance of a graduate faculty member in the student's field of specialization.

6313* Stochastic Methods in Hydrology. Prerequisite: 4313 or CIVEN 5843 and STAT 4035 or equivalent. Stochastic and statistical hydro- logic analyses of surface water and ground- water systems. Analysis of surface drainage and detention systems. Same as LIVEN 5843.

6323* Advanced Irrigation Engineering. Prerequi- site: 3333 or equivalent. Hydraulic theory and design and operation of center pivot and trickle irrigation systems. Management of water and energy in irrigated agriculture.

6333* Fluid Hydraulics. Prerequisites: 3013 or equivalent. Principles of sediment detachment and transport in fluvial systems. Design of stable channels and flow resistance relations of sediment-laden flows.

6503* Similitude in Research. Prerequisite: MATH 2613. Theory of similitude and its use in plan- ning, conducting and analyzing experiments in engineering and biological sciences.

6520* Problems in Soil and Water Engineering. 2- credits, maximum 6. Prerequisite: consent of instructor. Literature review and analytical studies of selected farm power and machinery problems. Written report required.

6550* Problems in Transport Processes. 2-6 credits, maximum 6. Prerequisite: consent of in- structor. Literature review and analysis of heat and mass transport and interflow in biological materials. Transport phenomena at interfaces, thermal and cryogenic processing, drying, packed and fluidized bed systems. Thermal and moisture control processing af- fecting quality of food products. Written re- port required.

6610* Advanced Research and Study. 1-10 credits, maximum 20. Prerequisite: approval by the student's advisory committee. Research and study at the doctoral level on the topic related to the student's doctoral program and field of interest.

Agriculture (AG)

1011 Orientation. Required of all freshman in the college of agriculture. Methods of study, ad- visement system, organization of curriculum and discussion of requirements and career opportunities in various fields of agriculture. Includes project work on pass-fail basis.

2003 (N)Agroecosystems: A Basis for Life. A study of natural and plant animal processes, for the re-creation of agriculture major. Issues such as factory farming, animal welfare, forest clear cutting, water quality and global warming, as the basis for applying the understanding of the prin- ciples.

2112 Microcomputer Techniques in Agriculture. Lab 2. Operation and capabilities of micro- computers in agricultural applications. Simple computer analysis, graphical display, spreadsheet word processing.

3010 Internships in Agriculture. 1-3 credits, maxi- mum 12. Supervised internships with busi- ness, industry and government agencies in- cluding cooperating veterinarians. Graded on pass-fail basis.

4010 Honors Seminar. 1-6 credits, maximum 6. Role of agriculture in society and adjustments to change in the economy.

4453 Communications in Agriculture. Fundamen- tals of newswriting and other communication methods; the role of the news media in agricul- ture and related fields. Same course as JB 4453.

Agronomy (AGRON)

1213 Crop Production. Soils and cropping prac- tices necessary for crop production systems. Production of modern crops and their management, as well as the adaptation of major agronomic crops to varying edaphic and climatic conditions. Importance of crop production to the producer and the consumer.

2123 Crop Production Laboratory. Lab 2. Prerequi- site: 1213. Hands-on experiences with crop plants. Identification of crops in seed, seed- ing, mature stages; crop morphology, seed quality, grain grading, growth stages of crops.

2401 Agronomic Orientation. Prerequisite: sopho- more standing in agronomy. Development and improvement of written and oral communica- tion skills; orientation to agronomic research and extension activities; application of experi- ments and procedures. Graded on pass-fail basis.

2124 Fundamentals of Soil Science. Lab 2. Pre- requisite: CHEM 1215. Physical, chemical and biological properties of the soil related to plant growth; soil testing and fertili- zer usage; soil classification of soils, rural and urban land use.

3111 Weed Control Laboratory. Lab 2. Prerequi- site: 1213 and 3112 (or concurrent enroll- ment). Identification of common weeds, prin- ciples and practices of herbicide application, and application equipment, handling and proper use of herbicides.

3112 Principles of Weed Control. Prerequisite: 1213. Weed control principles and practices included in cultural and chemical weed con- trol. Current weed control practices in crops, rangeland and crop situations.

3213* Pasture Management and Forage Produc- tion. Prerequisites: 1213, 2124, and MATH 1213. Pasture systems, livestock management and forage crop production for maximum eco- nomical production of introduced forage spe- cies.

3433* Soil Genesis, Morphology, and Classifica- tion. Lab 3. Prerequisite: 2124. Basic prin- ciples dealing with how and why soils differ, their descriptions, geographic distributions and modern classification of soils. Soil gen- esis and classification a prerequisite to sound land use planning and land management.

3585* Plant Genetics. Lab 2. Prerequisites: BISC 1304. Basic principles of heredity. Interrela- tionship between classical genetics and mo- lecular genetics emphasized. Mendelian ge- netics, cytogenetics, mutations, gene regula- tion and genetic engineering.

3781 Market Grain Technology. Lab 2. Prerequisite: 1213. Quality characteristics of grain for commercial use; identification of different market classes of grains, quality factors, and administrative and grading of the commercial grade; practice in grading grain using the federal grain standards.

3792 Seed Technology. Lab 6. Prerequisite: 1214. Techniques, factors and practices in deter- mining seed purity and germination; principles of seed testing; laws and regulations govern- ing the production, processing, handling and marketing of seed.

3893* Soil Chemistry. Prerequisite: 2124. The chemical and mineralogical properties of soils, weathering of rocks, soil chemical exchange and plant nutrition, mecha- nisms of ion uptake by plants and the role of the soil-borne elements in plant nutrition.
AGRONOMY

4113* Advanced Weed Science. Prerequisites: 3111 and 3112. Integrated approach for weed management. Weed life cycles and biology, weed crop interactions, herbicide families and their characteristics, and finally a systematic and integrated weed management system. Methods of conducting and interpreting research results in appropriate topics.

4123* Describing and Interpreting Soils. 1 credit, maximum 3. Lab 3. Prerequisite: 2124. Describe and classify soil properties in the field and interpret for suitable agriculture, urban, and other land uses.

4234* Soil Fertility and Management. Lab 2. Prerequisite: 2124. Soil fertility and use of fertilizers to maintain, enhance, and improve soil productivity and to minimize environmental concerns.

4263* International Agriculture and Food Production. 1 credit, maximum 6. Pre-requisite enrollment in BOT 5232. Behavior of chromosomes, concepts of plant breeding and production, distribution, classification, utilization and improvement of the major cereal crops. Integrated application of genetic and molecular genetics to study and manipulate plants and animals; place of human beings in the biological world and their effects on the environment. Effects of environmental factors on crop development and reported in consultation with a major professor.

4353* Plant Breeding. Prerequisite: 3554 or equivalent. Basic principles dealing with the improvement of plants through application of genetic principles.

4360* Soils of Oklahoma and Their Utilization. 1-3 credits, maximum 3. Open to anyone interested in using soil information. Discussion of Oklahoma soils and their interpretation for agricultural and non-agricultural users for increased food production and for environmental management. Preparations of interpretative maps, soil judging in the field, evaluations of work-and-do reports.


4470* Problems and Special Study. 1-3 credits, maximum 12. Prerequisite: consent of the instructor. Problems in agronomic crops which include range and turf, plant breeding and genetics, weed control, soil chemistry and fertility, soil physics, soil biology, soil conservation and soil morphology; spring travel course.

4483* Soil Biology. Prerequisite: 2124. Soil ecology of microorganisms, biological transformations, humus complexes, pesticide decomposition, plant nutrient cycles, microflora of rhizosphere.

4571 Senior Seminar. Prerequisite: senior standing. Career opportunities (talks and field trips); preparation of resumes and interviews. Graded on a pass-fail basis.

4673* Grain Crops. Lab 2. Prerequisite: 1213. Production, distribution, classification, utilization and improvement of the major cereal crops.

4683* Physical Properties of Soils. Prerequisites: 2124 and PHYS 1114. Soil physical properties and processes, and their influence on plant growth.

4772* Oilseed, Pulse and Mucilaginous Crops. Prerequisite: 1213. Production, utilization and improvement of oilseed, pulse and mucilaginous crops with special emphasis on peanuts and soybeans.

4934* Ecological Ecology. Prerequisite: 3914. Ecological principles pertaining to rangelands with emphasis on soil, plant and animal relationships. Characteristics of major range ecosystems and range plants.

4954* Range Vegetation Management. Lab 3. Prerequisites: 3914, AG 2112. Methods of managing rangeland vegetation for optimum sustained yield of improved ground cover and maximum soil and water conservation. Techniques for range vegetation management plan. Field trips and reports in laboratory. No credit for students with credit in 4954.

5703* Evapotranspiration. Prerequisites: knowledge of calculus and basic physics. Evaporative demands by radiant and advective energy; transport by wind and turbulent mixing; Water movement from soil through plant to air to region. Water budget in bare and vegetated fields including phreatophytes and in region. Methods of water budget and energy budget measurement and instrumentation.

5853* Management of Agricultural Research Systems. Organization, management and budgeting of agricultural research systems with emphasis on developing countries. Analysis of research and training priorities, budgeting, staffing and management of projects.
Animal Science (ANSI)

1124 Introduction to the Animal Sciences. Lab 2. Species adaptability, product standards and requirements, areas and types of production, processing and distribution of products, includes meat animals, dairy and poultry.

1133 Fundamentals of Food Science. Food industry from producer to consumer and the current U.S. and world food situations.


3002 Dairy Production. Lab 2. Prerequisites: 1124 and 2123. Basic principles of milking and management practices for dairy cattle operations. No credit for animal science students with credit in 4120, 4121, 4123 or 4461.

3012 Beef Production. Lab 2. Prerequisites: 1124 and 2123. Modern production and management practices for beef cattle operations. No credit for animal science students with credit in 4542.

3023 Poultry Science. Lab 2. Prerequisites: 1124, 2123 or 3543. The relationship of the biological concepts and functions of poultry to management practices, incubation procedures, and economic factors utilized by poultry in the commercial production of table and hatch ing eggs, broilers, turkeys and other poultry meat.

3031 Poultry Production. Lab 2. Prerequisites: 1124 and 2123. Modern production and management practices for swine operations. No credit for animal science students with credit in 4643.

3033 Meat Technology. Lab 3. Prerequisite: organic chemistry. The basic characteristics of meat and meat products as they relate to quality. Product identification, economy, nutritive value, preservation and utilization. No credit for students with credit in ANSI 2253 or 3333.

3101 Undergraduate Seminar. Lab 4. Prerequisite: 2253. Classifying and grading carcasses and wholesale cuts of beef, pork and lamb; factors influencing quality and value.

3120 Animal and Product Evaluation. 1-2 credits. maximum 4. Prerequisite: consent of instructor. Advanced instruction in evaluating slaughter and breeding animals, and grading and evaluating meat, poultry and dairy products.

3223 Poultry Plant Systems. Lab 2. Prerequisite: MATH 1513. Food plant design and the application of machines to food processing, packaging and storage.


3201 Food Sanitation Laboratory. Lab 2. Prerequisites: 3302 or concurrent enrollment, and BISC 1502. Exercises to illustrate qualitative or quantitative methods for monitoring foods, food ingredients or processing procedures and equipment for proper attainment of sanitation.

3302 Food Sanitation. Prerequisite: organic chemistry. Principles of sanitation in food production, distribution, preparation and service. Emphasis on control of food spoilage and foodborne illnesses.

3333 Meat Science. Lab 3. Prerequisites: 2253, CHEM 1215 or equivalent. Anatomical and basic chemical and physical characteristics of meat animals studied. The application of scientific principles to the processing and economical utilization of meat animals, as well as in the manufacture of meat products, emphasized in the laboratory.

3370 Food Chemistry. Lab 2. Prerequisites: BIOCH 3543, CHEM 2344. Basic composition, structure and properties of foods and the chemical changes or interactions that occur during processing and handling.

3422 Horse Management and Production. Nutrition. prerequisites include math 1513, 3433. The relationship of the biological concepts and functions of horses to management practices, incuba tion procedures, and economic factors utilized by horses in the commercial production of horses.

3431 Animal Genetics. Prerequisite: BISC 1303. The basic principles of herdity including: kinds of gene action, random segregation, independent assortment, physical and chemical basis for heredity, mutations, sex-linkage, chromosome mapping, multiple alleles and chromosomal abnormalities. Also a brief introduction to quantitative inheritance and population genetics.

3432 Animal Breeding. Lab 2. Prerequisite: 3423. The application of genetic principles to livestock improvement; study of the genetic basis of selection and systems of mating and the development of breeding programs based on principles of population genetics.

3443 Animal Reproduction. Lab 2. Prerequisite: PHSI 3034 or equivalent. Physiological processes of reproduction in farm animals, gonadal function, endocrine relationships, fertility and factors affecting reproduction efficiency. Emphasis on principles of artificial insemination in the laboratory.

3492 Marketing and Utilization of Milk. Lab 2. Prerequisites: 1124 and AGEC 1114. Marketing and utilization of milk, pricing, quality controls, procurement, processing and utilization, product distribution and factors affecting consumption.

3543 Principles of Animal Nutrition. Lab 2. Prerequisite: CHEM 1215 or equivalent. Basic principles of animal nutrition including digestion, absorption and metabolism of the various food nutrients; characteristics of the nutrients; measure of body needs; ration formulation.

3603 Processing Dairy Foods. Lab 3. Prerequisite: BISC 1502 and organic chemistry. Theory and practice in formulation and processing: butter and margarine, cottage cheese, blue and processed cheeses; evaporated and sweetened condensed milk; ice cream; ice milk and other frozen desserts.

3612 Range and Pasture Utilization. Lab 2. Prerequisite: AGRON 2974 or 3213. Integration of livestock production with range and pasture management practices.

3653 Applied Animal Nutrition. Lab 2. Prerequisite: 3543. Composition, characteristics and nutritive value of feeds and ration additives; qualitative and quantitative nutrient requirements of each of the classes of livestock; formulation of rations for each of the classes of livestock.

3763 Analysis of Food Products. Lab 2. Prerequisite: organic chemistry. Application of quantitative chemical and physical methods of analysis to the examination of foods.

3903 (Agricultural Animals of the World. The production and utilization of agricultural animals by human societies.

4323 Processed Meat. Lab 4. Prerequisite: 3333 or 4033. Meat and meat product composition, techniques in the molding and forming of meat, sausage formulation; curing; quality control; and cost analysis.

4343 Avian Nutrition. Prerequisite: 3543. Nutritive requirements, feed ingredients, ration formulation and feeding practices for various classes of domestic fowl.

4423 Horse Science. Lab 2. Prerequisites: 3433, 3443 and 3653. Current concepts and production principles related to the horse industry including nutrition, reproduction, herd health, functional anatomy and impediments, social behavior, and applying principles of psychology in horse management and training.

4441 Cattle Breeding and Reproduction. Lab 2. Prerequisites: 3443. Advanced concepts in cattle reproduction management with emphasis on artificial insemination techniques in cattle.

4542 Sheep Science. Lab 2. Prerequisites: 3433, 3443 and 3653. Breeding, feeding, management and marketing of commercial and purebred sheep.


4612 Beef Cow-Calf Management. Lab 2. Prerequisites: 3433, 3443, 3612 and 3653. Application of scientific knowledge, management principles and research advances to modern commercial cow-calf production.

4620 Stocker and Feeder Cattle Management. Lab 2. Prerequisites: 3612, 3653. Application of scientific knowledge, management principles and research advances to modern stocker and feeder cattle operations.

4641 Purebred Beef Cattle Management. Lab 2. Prerequisite: 4612 or concurrent enrollment. Production, selection, management and merchandising considerations in purebred beef cattle operations.

4643 Swine Science. Lab 2. Prerequisites: 3433, 3443 and 3653. Application of genetic, physiological, microbiological, nutritional and engineering principles to the efficient production of swine.

4672 Livestock Sales Management. Lab 2. Prerequisite: 3433. Advertising of purebred livestock, performance data and breeding values in the merchandising of purebred livestock, photography and ad copy layout; conduct of an actual livestock auction, including animal selection, advertising, catalog and animal preparation, clerking of payments, sale and checks and transfer of registration papers.

4803 Animal Growth and Performance. Prerequisite: PHSI 3034 or equivalent. Physiological and endocrine factors affecting growth and performance of domestic animals.

4853 Interpretation of Research. Lab 2. Prerequisites: 4612, 4613 or consent of instructor. Introduction to the methods of sr ence, descriptive statistics and literature org. lization. Students review the literature and make oral and written reports.

4900 Special Problems. 1-6 credits, maximum 5. Prerequisite: consent of instructor. A detailed study of an assigned problem by a student wishing additional information on a special topic.

4910 Animal or Food Industry Internship. 3-12 credits, maximum 12. Prerequisite: consent of instructor. Full-time internship at an approved production, processing or agribusiness unit or other agency serving animal agriculture. Maximum credit requires a six-months internship in addition to a report and final examination. Graded on a pass-fail basis.
ANIMAL SCIENCE

4973* Range and Ranch Planning. Lab 4. Prerequisites: 3612 and AGRON 4854. Range resource survey, inventory and monitoring. Inventory of ranch resources, survey and evaluation of ranch practices, and economic analysis. Development of a comprehensive ranch management plan. Field trips and reports in laboratory. Same course as AGRON 4973.

5000* Research and Thesis. 1-6 credits, maximum 6. Independent research planned, conducted and reported in consultation with a major professor.

5010* Special Problems. 1-3 credits, maximum 6. Special problems in areas of animal science other than those covered by the individual graduate student as a part of his research and thesis program.

5110* Seminar. 1 credit, maximum 3. A critical review and study of the literature; written and oral reports and discussion on select subjects.

5113* Basic Reproductive Physiology. Prerequisites: ZOOL 3204. Female and male reproduc- tive processes, the influences of environmental factors upon these processes and the application of reproductive physiology to animal production. Same course as PHSI 5113.

5120* Special Topics in Food Science. 1-4 credits. Maximum 4. Prerequisites: graduate standing and/or consent of instructor. Advanced topics and new developments in food science especially with reference to foods of animal origin.


5303* Advanced Animal Breeding. Prerequisites: 3433 or equivalent and STAT 4013. Basic con- cepts of population genetics as related to theo- retical animal breeding including heritability, genetic correlations, selection methods, in- breading and heterosis.

5623* Experimental Methods in Animal Research. Lab 2. Prerequisite: STAT 4023. Methods used in large animal research including the selec- tion of experimental material, record keeping, interpretation of results and a critical review of existing investigations.

5752* Carbohydrate and Lipid Nutrition. Prerequisites: BIOCH 5753. An in-depth study of the digestion, absorption and metabolism of car- bohydrates and lipids as related to energy requirements, productive function, health and disease.

5772* Protein Nutrition. Prerequisite: BIOCH 5753. Nutritional, biochemical and clinical aspects of protein metabolism as it relates to nutrition status.

5782* Vitamin and Mineral Nutrition. Prerequisite: BIOCH 5753. Development of the concept of dietetical essentials and vitamins. Indi- vidual minerals and vitamins discussed for animal species from the standpoint of chemi- cal form, availability, requirements, biochemi- cal mechanisms of deficiencies and excesses, and estimation in foods and feed.

5923* Livestock Systems. Lab 2. Prerequisites: AG 2112 or consent of instructor. Application of computer, linear programming and simul- taneous techniques in animal research and live stock production.

6000* Research and Thesis. 1-10 credits, maximum 30. Prerequisite: M.S. degree. Open only to students continuing beyond the level of the M.S. degree, independent research, planned, conducted and reported in consultation with and under the direction of a major professor.

6003* Population Genetics. Prerequisites: 5303 or equivalent and STAT 4023. Population concept of genetics with emphasis on qualitatively in- herited traits and statistical techniques uti- lized in population genetics. Gene and geno- typic frequencies, estimation of genetic parameters within a population and the forces which can alter the magnitude of these genetic parameters and inbreeding.

6010* Special Topics in Animal Breeding. 1-3 cred- its. Prerequisite: consent of instructor. Ad- vanced topics and new developments in ani- mal breeding and population genetics.

6110* Seminar. 1 credit, maximum 3. A critical analy- sis of the objectives and methods of research in the area of animal science. Review of the literature, written and oral reports and discus- sion on select topics.

Anthropology (ANTH)

2353 General Anthropology. Anthropology, empha- sizing the study of human physical evolution (physical anthropology) and cultural evolu- tion (archaeology).

3353* Cultural Anthropology. Introduction to cul- tural various subdisciplines of cultural anthro- pology, anthropological concepts and capsule ethnographies of assorted ethnic groups.

3823 North American Indian Cultures. Precontact and traditional subsistence patterns, con- sumerization and ideology with emphasis on spe- cific groups in each cultural area.

4123* Archaeology of North America. Factors influ- encing the spread and diversification of hunting and gathering economies, the rise of agricultural systems, and emergence of extensive and com- plex political units.

4633* Racial and Cultural Minorities. Ethnic and racial groups in contemporary pluralistic soci- ety, including a cultural-historical perspective on their origins, social relations, value sys- tems and goals.

4643* Women: A Cross-cultural Perspective. Com- pares the roles of women in different types of societies (hunting and gathering, horticultural, pastoral, agrarian, and urban). Social, familial, eco- nomic and legal status of women in American society. Same course as SOC 4643.

4823* Contemporary Native Americans. Cultural adaptations of North American Indians within both contemporary ‘traditional’ communities and urban settings. Federal programs and cur- rent problems as they relate to the adapta- tional processes.

4853* Comparative Cultures. Compares environ- ments, economies, social and political organi- zations and other aspects of culture among selected literate and preliterate societies.

4953* Anthropological Theory. Significant theoret- ical formulations in cultural anthropology. Re- lationship between theoretical developments and research emphasis.

4990* Special Topics in Anthropology. 1-3 credits, maximum 6. Prerequisite: consent of instruc- tor. Directed readings or research on signifi- cant topics in anthropology.

4993* Anthropology of Aging. Study of aging using anthropological theory and methods; includes aging in different societies, effect of culture change on aging and role culture plays in aging process.

Applied Behavioral Studies in Education (ABSED)

1112 World of Work. Assists students in exploring career options through increased understand- ing of self and expanded knowledge of occupa- tional information. Includes a study of the decision-making process and a look at the present and future changing world of work.

3013 Leadership Concepts. Prerequisites: 12 credits of selected and approved courses. For un- dergraduate student competence through the study of leadership concepts. Stresses com- munications, decision-making, leadership styles and theories and group dynamics. At- tempts integration of theoretical concept with reality of application within the university com- munity.

3092 Counseling and Guidance for Dormitory Per- sonnel. Principles and practices involved in counseling and supervising students.

3113* Educational Foundations of Childhood. Prerequisite: PSYCH 1113. The child from con- ception to puberty with focus on educational implications of development in cognitive, af- fective and psychomotor domains.

3202 Education of Exceptional Learners. Learning characteristics, needs and problems of edu- cating the exceptional learner in the public schools. Implications of the learning, environ- mental and cultural characteristics; planning and program assistance available for accom- modation of the exceptional learner in regular and special education programs; observation of exceptional learners.

3213* Psychology of Adolescence. Prerequisite: PSYCH 1113. The adolescent from pubes- cent to adulthood with focus on educational implications of development in cognitive, af- fective and psychomotor domains.

3240* Observation and Participation in Special Edu- cation. 1-3 credits. Prerequisite: 6 credits of supervised activities with various types of ex- ceptional learners and the educational provisions for them.

3413 Child and Adolescent Development. Prereq- uisite: PSYCH 1113. The person from concep- tion through adolescence with focus on edu- cation implications of development in cognitive, affective, social, and physical do- mains.

3633* Assessment and Intervention for Exceptional Children-Behavioral Age 6. Prerequisite: 3202. Assessment techniques and intervention strategies appropriate for ex- ceptional infants and young children. Basic theo- ries of development and research supportive of various intervention strategies and assess- ment techniques.


4063* Exploration of the Creative Experience. Prereq- uisite: senior standing. The creative expe- rience in art (visual to performing), articula- tion (oratory to literature), thought (philosophy to psychology), business (practices to prod- ucts), leisure (procreation to recreation). West- ern and Eastern viewpoints. Personal creative development fostered by modeling and in- vestigation of proven techniques. A wide range of creative endeavor with an experiential ap- proach. Future-oriented applications.

4223* Human Learning in Educational Psychology. Prerequisites: 3113 or 3213, an approved ob- servation or field experience course, and for students pursuing teacher certification, full admission to Teacher Education required. In- structional psychology focusing on the study of learning and teaching theory as part of an instructional program to deal with individual, cultural, and environmental differences. Case study approach emphasizing motivation, planning, evaluation, classroom problems and management.

4453* Educational Diagnosis and Remediation. Prereq- uisites: 4052, MATH 2413 and CIED 3283. Provides skills in the application of standard- ized and informal assessment information for educational planning. Includes analysis of commonly used achievement, perceptual, motor and language tests and behavioral analysis techniques.

4513* Instruction to the Emotionally Disturbed. Prerequisite: 3202 or 5633. Characteristics, identification and teaching of the emotionally disturbed or behavior disordered student; a variety of theoretical approaches to the sub- ject.


4640 Student Teaching in Special Education-12 credits, maximum 32. Prerequisite: 3202 and full admission to Teacher Education. Supervised teaching experience in the area of spe- cial education in which the student is prepar- ing to qualify for a teaching certificate.
5053* Introduction to Gifted and Talented Education. Concepts, techniques and strategies for providing differentiated educational programs and experiences for the gifted and talented. Prerequisites: consent of instructor. Human development; teaching techniques and methodologies. Policy issues, motor and cognitive development; methods development; teaching techniques and methodologies.

5103* Human Development in Psychology. Introduction to basic research and theories of cognitive, emotional and social development. Applications to educational and family settings.

5123* Medical Information in Counseling. Prerequisite: graduate standing or consent of instructor. Orientation to medical information and medical aspects of disability. Application to clinical problems in human service professions such as rehabilitation counseling, counseling psychology, and related disciplines.

5163* Counseling Techniques for Teachers of Gifted and Talented Students. Prerequisites: 5063 and admission to the graduate program in applied behavioral studies. Techniques for dealing with the problems experienced by gifted and talented students. Strategies for consulting with teachers, parents, and parents regarding student development of goals. Counseling techniques, dealing with self-concept, social and emotional concerns, problem solving and decision making, referral procedures and self-analysis for teachers related to learning and teaching philosophy and style.

5173* Gerontological Counseling. Prerequisites: graduate standing or consent of instructor. Examination of mental health treatment modalities and approaches to counseling with older adults. An elderly component is included.

5183* Introduction to Rehabilitation Counseling. Background, legal aspects and philosophy of rehabilitation. Overview of current practices in rehabilitation and related areas.

5213* Advanced Educational Psychology. Learning and its effect upon coping and adjustment. How learning and learning disabilities interact to change human behavior.

5223* Psychology of Disability. Psychological and sociological implications of physical disability and illness. Methods of dealing with disability including issues in rehabilitation, psychology, counseling, and special education.

5230 Seminar in Applied Behavioral Studies. 3-6 credits. Maximum 6. Prerequisite: consent of instructor. In-depth exploration of contemporary problems of applied behavioral studies.

5363* Differentiated Curriculum Techniques and Materials for Gifted and Talented. Prerequisite: 5063. Development of curriculum content experiences for the gifted and talented. Commercial and teacher-generated materials in imagination; imagery; analysis; metaphor; inductive, deductive and abductive thinking; science; philosophy; psychology; logic systems; problem solving; concept learning; creativity; creative dramatics, etc. Conceptual approaches to the use of the preceding in various interest-based and non-interest-based formats.

5364* Educational Measurements. Appropriate applications of tests in the schools. Development of teacher-made tests, selection of standardized tests, interpretation of test results, understanding of the statistics reported in testing literature, uses of test results and recent developments in educational measurement.

5382* Family-School Involvement Processes. For teachers, administrators, counselors, school psychologists and other school personnel concerned with improving communication between the home and school in an attempt to better meet the needs of children and youth.

5443* Theories and Problems in Educational Psychology. Theoretical foundations and nature of the problems studied in educational psychology; current issues and historical overview.

5453* Vocational and Career Information. Prerequisite: 5553 or 5572. Local and national problems in the counseling of students. Focus on jobs and sociological factors related to career planning and worker effectiveness.

5463* Psychology of Learning. Application to education of the principles and theories of the psychology of learning.

5473* Introduction to Counseling Practice. Prerequisite: consent of instructor. Orientation to counseling practice through observation and participation. The supervised experiences permit the student and the counselor education staff to evaluate the student's strengths and weaknesses as a potential counselor or student personnel administrator.

5483* Community Counseling and Resource Development. Prerequisite: 5562. Application of educational, preventive, and crisis intervention in a variety of human service settings, including the development and evaluation of community health resources.

5503* Multicultural Counseling. Prerequisite: 5562. Emphasis on effective communication skills in cross-cultural counseling. Examination of relationships and the integration of theoretical knowledge with experimental learning. Psycho-social factors, life styles, etc. Variance of cultural and ethnic groups and their influence on the helping relationship.

5510* Practicum in Educational Psychology. 1-6 credits. Maximum 6. Prerequisite: consent of instructor. Supervised application of the principles and procedures of educational psychology in institutional settings for the preparation of students in the areas of their specialization.

5512* Secondary School Counseling and Development. Prerequisite: 5523. Focus on career education programs and resources available to exceptional individuals. Counseling principles and practices of the principles of play therapy. Theories and applications of career education in special education children. Supervised clinical experiences in various school and non-school settings. Group member competencies are stressed during the laboratory period.

5520* Counseling Practicum. 3-12 credits. Maximum 12. Prerequisites: 5323, 5553, 5562 or 5562 or 5552 or 5582 and admission to the counseling or student personnel program. Supervised experience in human interaction processes of counseling and consulting with the major goal of facilitating positive growth processes through individual supervision. May be conducted in a variety of settings with a wide range of developmental levels.

5613* Instructional Systems Design. A practically-oriented coverage of analyzing, defining, sequencing and validating instructional systems. Developing educational objectives, course development, matching instruction to individual differences and evaluation of systems. Techniques of developing and validating instructional components.

5620 Practicum with Exceptional Learners. 1-8 credits. Maximum 8. Lab 1-8. Prerequisites: 5612 and consent of instructor. Supervised individual and group experience with exceptional learners. The particular experience (learning disability, mental retardation, gifted, etc.) is determined by the student's field of specialization.

5623* Introduction to Learning Disabilities. Pre-requisite: survey course in special education. Problems that students experience during their preschool, school, and adult years; historical and contemporary perspectives; cultural, environmental and psychophysiological contributions to earning style differences; and issues related to individualized educational planning and instruction. Practical experience with individuals having earning problems.

5633* Behavior Characteristics of Exceptional Individuals. The characteristics of exceptional individuals. The characteristics that exceptional individuals experience. Educational programs and resources available to assist administrators, teachers and parents in dealing with unique individual needs.

5643* Counseling Parents of Exceptional Children. Aid the classroom teacher and other professional personnel in the understanding of the unique activities and interpersonal relations involved in counseling with parents of exceptional children.

5653* Play Therapy in Special Education. Theories and practices of the principles of play therapy. The application of play therapy for special education purposes. The use of play therapy with children with emotional, social and psychological problems.
172

COURSES

5633* Creativity for Teachers. Theoretical origins of creativity; characteristics, components, and creative problem solving in the learning environment. Blocks to creative thinking, imagination, imagery, creativity testing, diagnostic feedback, and intervention. Course and laboratory problem solving and teaching techniques and methods to maximize creative potential in all kinds and types of students.

5670 Rehabilitation Counseling Practicum. 1-12 credits, maximum 12. Prerequisites: graduate standing and consent of instructor. Applied experience for graduate students in counseling.

5673* Developmental Language for the Exceptional Individual. Prerequisites: 3502 or 5633; and 5TH 2513. Normal language development and variations from non-normal demonstrated by handicapped learners. Theoretical approaches to language training, formal and informal assessment techniques, and instructional methods.

5680* Internship in Counseling. 1-12 credits, maximum 12. Prerequisites: 5590 and admission to the counseling and student personnel program. Supervised experience working and studying in a counseling agency or setting.

5863* Methods of Teaching Students with Learning Disabilities. Prerequisites: 5202 or equivalent, 5623. Current techniques and approaches used to teach students with learning disabilities and the theoretical bases for these techniques and approaches. Adapting curriculum for use with learning disabled students. Professional roles of the teacher of learning disabled students including communications with other teachers.

5713* Transpersonal Human Development. Human development in terms of individual consciousness, focusing on the implications of such extraordinary states of consciousness as those associated with hallucinogenic drugs and mystical religious experience. Integration of psychological and religious interpretations of development. Applications to practical problems in education and psychology.

5720* Workshop. 1-8 credits, maximum 15. Professional workshops of various topics and levels of difficulty. Each workshop designed to meet unique or special needs of individuals concerned with education, helping professions, and behavioral studies.

5732* Seminar in Education. Prerequisite: consent of instructor. Preparation of seminar study.

5733* Teaching Strategies for the Physically Handicapped. Prerequisite: 4613. Types of physical handicaps, their educational implications and various adjustments for optimal functioning.

5743* Curriculum Modifications for Exceptional Individuals. Materials and resources designed for use by teachers and other professionals, paraprofessionals and parents in working with exceptional individuals. Includes commercial and teacher-student-made materials.

5753* Teaching Methods and Techniques for the Gifted and Talented. Prerequisite: 5593. Subject and skill-related teaching facilitation that is process-oriented and other individual, group, and classwork. Practical application of research and principles of research. The role of the teacher as facilitator, counselor and non-directive change agent. Individualized educational plans, involving independent study, tutoring, correspondence, clustering, mentors, learning centers, resource centers.

5783* Psycho-educational Testing of Exceptional Individual. Prerequisites: 5593 or equivalent. Teaching: selection of appropriate instruments, test administration, interpretation of individual tests, appropriate for exceptional individuals.

5823* Characteristics and Identification of the Emotionally Disturbed Learner. Prerequisites: 4513 and PSYCH 3443. Characteristics and identification of the emotionally disturbed and behavior-disordered learner. Trains the teacher to identify the emotionally disturbed/behavior-disordered learner.

5825* Advanced Methods for Teaching the Mentally Retarded. Prerequisite: 4653. A review of research and methodological developments related to the instruction of mentally retarded children, adolescents, and adults.

5863* Developing Programs for the Gifted and Talented. Prerequisites: 5063 and 5633. Programs based on various philosophies and structural concepts of gifted and talented education, e.g., mainstreaming, self-contained, pullouts, magnet schools, time blocking, accelerated and enriched instruction. Programs are designed for general and specific academic ability; however, exposure will be provided to creative and productive thinking programs, leadership programs, and visual and performing arts programs. Specific models included.

5873* Instructional Strategies and Resources for the Emotionally Disturbed Learner. Prerequisite: 5823. Instructional procedures and resources available for working with the emotionally disturbed/behavior-disordered learner. A wide range of theoretical approaches explored.

5883* Behavior Management and Affective Education. Prerequisite: 4733. The utilization of various approaches to the management of individual and group behavior; affective education in a wide range of instructional settings.

5933* Altered States of Consciousness in Human Development. Theory and research concerning the role of altered states of consciousness in human development. Practical techniques for facilitating healthy human development which might be used by counselors, teachers, and other human services workers. Techniques include guided imagery, progressive relaxation and, especially, meditation.

5953* Elementary Statistical Methods in Education. Elementary statistical methods needed by consumers of educational research. Descriptive and inferential statistics. No credit for students with credit in 5015.

5962* Developing Support Resources for Gifted and Talented Programs. Prerequisite: 5863. Development, management, and evaluation of volunteer programs in intra- and extra-class settings. Program types include parentaid, volunteer-aid, mentors, tutors, group sponsors. Developing community interest, finding external resources, external funding and resource information sources.

5983* Intermediate Research Techniques in Education. Prerequisites: 5013 and 5953 or 5015. Independent experiment design and behavioral sciences. Fundamental and advanced analysis of variance designs in controlled experiments and related data analysis strategies.

5993* Identification and Behavior Characteristics of the Gifted and Talented. Prerequisites: 5370 and 5953 or equivalent. Characteristics and behavioral characteristics of the gifted and talented. Selection of tests and interest inventories. Selection of norms and adjustment forms/models, inferences, checklists, rating scales, sociograms as well as data abstraction from cumulative and anecdotal records. Familiarity with gifted/talented identification committees.

6000* Doctoral Thesis. 1-25 credits, maximum 25. Prerequisite: permission of advisory committee chairperson. Required of all candidates for doctorate in applied behavioral studies. Credit given upon completion and acceptance of thesis.

6013* Advanced Research Techniques in Education. Prerequisite: 5983. Applications of multiple regression as a general data analysis strategy for experimental and non-experimental research in behavioral sciences.

6043* Adult Development. Theory and research concerning human development over the adult years. Practical applications for serving adult populations in education and education-related settings.

6053* Professionalism and Ethics in Counseling Psychology. Principles and issues of professionalism and ethics. Legal and ethical implications derived from statutes and case law for the practice of counseling psychology in case studies.

6083* Principles of Counseling Psychology. Prerequisite: 5533 or equivalent. Development, theoretical foundations and applications of therapeutic models of counseling and psychology.

6110* Seminar in School Psychology. 1-3 credits, maximum 6. Prerequisite: concurrent enrollment in 6210. An assessment of psychological techniques applied to problems encountered in the internship.

6173* Higher Education Student Personnel Administration. Develops an understanding of the history, philosophy, student life, critical issues and administration of student personnel work in higher education.

6210* Internship in School Psychology. 3-6 credits, maximum 12. Prerequisite: enrollment in school psychology program. Supervised field experience in the duties of a school psychologist consisting of one semester participation under the direction of a certified school psychologist or other qualified field personnel approved by the supervising faculty member.

6213* Higher Education Student Personnel Services. Prerequisite: 6173. Higher education student personnel services such as: admissions orientation, student activities, financial aid, housing and counseling.

6220* Internship in Higher Education Student Personnel. 2-6 credits, maximum 6. Prerequisites: 6173 or 6213 and admission to the student personnel and guidance program and consent of supervisor. Provides work and personal opportunities under supervision in areas of student housing, student activities, financial aid, foreign student advisement, student personnel administration, student union, group facilitation and other appropriate work situations.

6310* Advanced Practicum and Supervision. 3-12 credits, maximum 12. Prerequisites: 5933 and matriculation into prospective counseling psychologists, counselor educators and supervisors, and practicing counselors. Supervised off-campus experiences related to counseling, consulting and supervising competencies.

6373* Program Evaluation. Prerequisite: 5013 or 5015. Contexts, purposes and techniques of evaluation. Counseling psychology and educational programs. Evaluation design, information collection, analysis, reporting and uses of results for programs ranging from individual lessons to nation-wide multi-year projects. Techniques useful in evaluation requirements of federally funded programs.

6460* Internship in Educational Psychology. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Supervision and guidance of teaching and service in educational psychology. May be repeated for credit when work assignment varies. Required of all teaching assistants in educational psychology during the first semester of each academic term. Includes cooperative planning and evaluation.

6533* Human Motivation. A theoretically oriented approach to the concept of motivation: essential prerequisites to human behavior and applications to the solution of real and hypothetical problems.

6553* Advanced Practice in Marital and Family Treatment. Prerequisites: 6523, concurrent enrollment in counseling or clinical practicum or consent of instructor. Advanced methods in assessment, diagnosis and treatment of marital and family problems. Skill development, professionalism, ethics and case management. Dynamics of co-therapy and joint treatment. Case consultation format. Same as PSYCH 6533.

6600* Advanced Internship in Counseling. 1-3 credits, maximum 6. Prerequisite: admission to the doctoral program in counseling and student personnel or applied behavioral studies emphasizing counseling and development and consent of instructor. Designed to facilitate counseling effectiveness and to set the stage for a productive life of professional practice.

6603* Current Trends and Issues in Special Education. Current research and literature regarding the education of exceptional children.

6650 Applied Behavioral Studies Research Seminar. Prerequisite: admission to advanced graduate program. Critical analysis of current research.

6580* Directed Reading. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Directed reading for students with advanced graduate standing.

6880* Internship in Education. 1-8 credits, maximum 8. Lab 3-24. Prerequisites: admission to advanced graduate program and consent of student department head. Directed off-campus experiences designed to relate ideas and concepts to problems encountered in the management of the school program.

3117 Site: grade of "C" or better in 2116. Architectural engineering of thermal comfort, energy concerns and architectural behavior. Matrix applications, finite element, finite differences, stability consider considerations and three-dimensional structural modeling.

2114 Architectural Design Studio III. Lab 16. Pre-requisite: grade of "C" or better in 2114. Problems in architectural design.

2234 Environmental Control: Thermal Systems and Safety. Lab 2. A survey of the fundamentals of thermal comfort, energy concerns and mechanical systems for buildings as well as the basic principles of life safety.

2263 Building Systems and Materials. Pre-requisite: grade of "C" or better in 2116. Architectural engineering of thermal comfort, energy concerns and architectural behavior. Matrix applications, finite element, finite differences, stability consider considerations and three-dimensional structural modeling.

3100 Special Topics. 2-6 credits, maximum 6. Subjects to be selected by the faculty in architecture from advances in state-of-the-art areas.

3117 Architectural Design Studio IV. Lab 16. Pre-requisite: grade of "C" or better in 2216 and admission third year. Problems in architectural design.

3123 Structures: Elementary Analysis. Lab 2. Pre-requisite: grade of "C" or better in 2114. Structural theory for applications in architecture.


3246 Structures: Elementary Steel and Timbers. Pre-requisite: grade of "C" or better in 3123. Analysis and design of steel and timber structures used in architecture.

3283 (H)History and Theory of Architecture II. Pre-requisite: 2003. Specific course content varies from year to year; exploration of some aspect of 19th and 20th century architecture in the Western world.

4133 Advanced Architectural Acoustics Design. Prerequisite: 3133. Analysis and design of acoustically-critical spaces, including open-plan offices, use facilities, theaters, and a design project of the student's choice.


4193 Marketing Professional Services. Pre-requisite: Site: 3117. Business development aspects of design firm management, including: marketing plan development; marketing organization; strategies and tools; selling techniques and contract negotiating.

4217 Architectural Design Studio VI. Lab 20. Pre-requisite: grade of "C" or better in 4117. Problems in architectural design.


4273 (H)History and Theory of Architecture IV. Pre-requisite: 2003. Specific course content varies from year to year; exploration of some aspect of 19th and 20th century architecture in the Western world.

4370 Field Study in Europe I. 1-4 credits, maximum 8. Pre-requisite: senior standing in architecture or consent of instructor. On-site analysis and study of European architecture, culture and urban design.

5000 Special Problems. 1-6 credits, maximum 6. Lab 3-18. Pre-requisite: consent of instructor and head of the School. Theory, research or design in related disciplines. Plan of study to be determined jointly by student and graduate faculty.

5083 Japanese Architecture. Pre-requisite: admission to the professional School of Architecture or consent of instructor. Historical Japanese architecture from 200 BC to 1890. Shin, Buddhist, Zen, Sukiyaki, Zuki, Minka and contemporary subjects.

5100 Special Topics. 3-6 credits, maximum 15. Subjects to be selected by the graduate faculty in architecture to cover state-of-the-art advances.


5120 Passive Design. Prerequisite: 2234. A design-oriented course in passive environmental control strategies for use in contemporary architecture. Discussions of passive design theory will be interspersed with practical design exercises.


5193 Management of Architectural Practice. Pre-requisite: five-year standing in architecture or architectural engineering or consent of instructor. Principles of management as applied to the practice of architecture and architectural engineering.

5217 Architectural Design Studio VII. Lab 20. Pre-requisite: grade of "C" or better in 5119. Problems in architectural design.

5223 Structures: Intermediate Analysis. Pre-requisite: Site: 6117. Independent projects or competition. May be combined with 6206 with approval of adviser.

6123 Structures: Advanced Steel. Prerequisite: grade of "C" or better in 4244. Plastic analysis and design of structural steel frames utilizing load and resistance factor design.


6193 Architecture Seminar I. Seminar for graduate students only. Must be taken concurrently with 5117.

6193 Financial Management for Architects and Engineers. Prerequisite: 3117. Financial aspects of design firm management, including: fundamentals of finance; profit planning and control; cash management and analysis of financial statements.

6206 Creative Component in Architectural Engineering. Lab 18. A design project based on a program previously developed by the student, to include a written report and supporting documents when appropriate. Must be approved by the project adviser and completed in the final semester of the graduate program.

6207 Creative Component in Architecture. Lab 20. Pre-requisite: 6117. A design project based on a program previously developed by the student to include a written report and supporting documents when appropriate. Must be approved by the project adviser and completed in the final semester of the graduate program.

6214 Graduate Design Studio. Lab 12. Pre-requisite: 6117. Independent projects or competition. May be combined with 6206 with approval of adviser.

6223 Structures: Advanced Concrete. Prerequisite: grade of "C" or better in 5144. Design of prestressed concrete structures, including pre-and post-tensioning.

6224 Structures: Advanced Analysis. Prerequisite: grade of "C" or better in 5232. Analysis techniques for architectural structures including stability, space frames, computer applications, gusseted towers and project research.

6283 Architecture Seminar II. Seminar for graduate students only. Architectural criticism.


Art (ART)

1103 Drawing I. Lab 6. A freehand drawing experience designed to build basic skills and awareness of visual relationships. A sequence of problems dealing with composition, shape, volume, value, line, gesture, texture and perspective. A variety of media explored.

1113 Drawing II. Lab 6. Prerequisite: 1103. Objective and subjective approaches to visual problem solving in a variety of techniques and media. The analysis and manipulation of form, light, space, volume, and the formal aspects of perspective.

1203 Design I. Lab 6. An introduction to visual problem solving. Organization of the two-dimensional plane using the elements and principles of design: line, shape, value, texture, and color. Use of black and white and color media.
ART

1803 (H)Introduction to Art. An introduction to the analysis and interpretation of art. Emphasis on visual arts. Visual, emotional and intellectual aspects of art in painting, sculpture, printmaking and architecture.

2103 Drawing I. Lab 6. Prerequisite: 1113. The development of formal and expressive aspects of drawing by direct observation of the figure and environment. Emphasis on the use of materials, techniques and media to create truthful and expressive drawings.

2203 Three-dimensional Design. Lab 6. Prerequisite: 1113. Development of three-dimensional form and space stressing organization of design elements, development of concepts and manipulation of materials. Investigation of linear space, modular ordering, mass, volume and color through projects of a conceptual and applied nature.

2213 Design II. Lab 6. Prerequisites: 1103, 1203. Color theories and their application to visual problem solving, distinctions between pigment and light and between additive and subtractive color. The nature and properties of color, its expressive qualities, symbolic potential, and psychological impact.

3100 Advanced Drawing. 3 credits, maximum 9. Lab 6. Prerequisite: 2103. Investigation of drawing stressing thematic development, abstract ideas, and individual imagery.

3123 Oil Painting. Lab 6. Prerequisites: 1103, 1113, 1203, 2203, 2213, 2603, 2613 or permission of instructor. The development of skills in oil painting stressing form and content, visual perception and individual expression. Technical instruction applicable to individual problems and needs.


3300 Sculpture. 3 credits, maximum 9. Lab 6. Prerequisites: 1533 and 3503. Sculpture in any material.


3343 Jewelry and Metals. Lab 6. Prerequisites: 1103, 1113, 1203, 2203. Metalworking, holloware construction and die forming. Emphasis on the proper use of reference material to complete sample problems in editorial, advertising, and technical illustration.

3413 Lettering and Typography. Lab 6. Prerequisite: 3133. The study of symbolic communication including the practice of calligraphy, reproduction lettering, typography and experimental typographic design. Emphasis on innovative typography and the use of pictorial symbols as forms of communication.

3423 Graphic Design. Lab 6. Prerequisite: 3413. Aspects of graphic communication: ideation, production skills, selection and use of materials and reproduction processes. Sequential course must include all of the following systems: information organization, layout, comprehensive, mock-ups, and mechanical preparation.

3431 Applied Graphic Design. Lab 6. Prerequisite: 3423. Design problems with special attention to signage, exhibition design, packaging, display, and point of purchase. Use of model-building tools and study of form and function to introduce the student to problem-solving and finishing techniques. Development of concepts into models.

3503 Ceramics. Lab 6. Prerequisites: 1103, 1113, 1203, 2203, 2215, 2603, 2613, or consent of instructor. Methods of clay building, wheel forming methods, methods of decoration and glazing, firing and kiln construction. Involvement with ceramic materials and processes.

3603 History of Classical Art. Stylistic, philosophical and formal qualities of art in the Classical world. The creation of the Greek ideal and its dissemination in the Roman world through architecture, sculpture, and painting.

3613 History of Medieval Art. A survey of European architecture from the fall of Rome to the end of the Gothic period, approximately 400-1400. Includes a study of the late Middle Ages as emerging from the blending of earlier traditions of the Roman, Byzantine, barbaric, Byzantine, and Moslem.

3623 History of Renaissance Art. A survey of Italian painting, sculpture and architecture from the thirteenth through the sixteenth centuries. Includes painting in northern Renaissance Europe, Jan van Eyck to Pieter Bruegel.

3633 History of Baroque Art. Painting, sculpture, and architecture in Counter-Reformation Italy, Spain, and Flanders. The second half of the course focuses on seventeenth-century Protestant Holland, analyzing the popularization of non-religious themes in painting including portraits, landscape, still life, and genre.

3653 History of 19th Century Art. Art of 19th century Europe-ideals, conflicts, successes and triumphs, beginning with the French Revolution and ending in 1900.

3663 (H)History of American Art. Prerequisite: 2603 or 2613. Visual arts in America from the Colonial period to the present. Major styles, ideas and uses of material in architecture, painting, sculpture and design.


3703 Printmaking. Lab 6. Prerequisite: 1103, 1203. Projects in printmaking processes and techniques, including linocut, woodblock, etching, aquatint, and lithography.

3710 Printmaking: Screenprinting. 3 credits, maximum 9. Lab 6. Prerequisites: 1103, 1113, 1203, 2203, 2213, 2603, 2613, or permission of instructor. Understanding and control of stenciling techniques and the printing of editions. Development of concept and images through the medium of screenprinting.

3720 Printmaking: Intaglio. 3 credits, maximum 9. Lab 6. Prerequisites: 1103, 1113, 1203, 2203, 2213, 2613 or permission of instructor. Understanding and control of intaglio techniques; preparation, processing, and editioning of images from metal plates. Development of concepts and images through traditional and contemporary approaches to the intaglio process.

3730 Printmaking: Lithography. 3 credits, maximum 9. Lab 6. Prerequisites: 1103, 1113, 1203, 2203, 2603, 2613 or permission of instructor. Understanding and control of the procedures of drawing, processing and printing editions from stones and metal plates. Development of concepts and images through the medium of lithography.

4120 Oil Painting Studio. 3 credits, maximum 6. Lab 6. Prerequisite: 3123. Oil painting with emphasis on personal development of visual ideas and technique.

4130 Watercolor Studio. 3 credits, maximum 6. Lab 6. Prerequisite: 3133. Structured assignments of exploration of the fall of concetto ideas and imagery to reinforce growth of technical skills and personal painting style in watercolor.

4330 Sculpture Studio. 3 credits, maximum 9. Lab 6. Prerequisite: 3333. A broad-based course which allows students to pursue individual interests using a variety of materials and processes. Emphasis on further development of concepts, skills and techniques.

4340 Jewelry and Metals Studio. 3 credits, maximum 6. Lab 6. Prerequisite: 3340. 3433 or 4343. Metalworking processes including casting, rubber modeling, and advanced stone setting. Consideration of non-metal media. Emphasis on development of materials and ideas through conceptual problems.


4420 Graphic Design Studio. 3 credits, maximum 9. Lab 6. Prerequisite: 3423. Design problems suited to the professional portfolio. Discussion of practical issues including career options, resume and portfolio preparation, and interview techniques. Investigation of historic precedent in graphic design.

4430 Illustration Studio. 3 credits, maximum 9. Lab 6. Prerequisite: 3403. 4420. Developing and finishing illustrations for advertising, editorial, reportorial, and technical use. Emphasis on visual control of a two-dimensional composition to relate the intent of the client/artist. Line, black and white, limited and full color. All media.

4500 Ceramics Studio. 3 credits, maximum 9. Lab 6. Prerequisite: 3503. Continuing exploration of ceramic arts: glasses, clay bodies, methods of forming, decorating and finishing. Continued emphasis on the relationship between visual unity and individual expressive concepts as these apply to both utilitarian and conceptual forms.

4613 Art Since 1945. Art and art theory from 1945 to the present. Major trends of abstract expressionism, pop art, minimalism, photocollage and conceptual art. Theories and intellectual bases of each movement as well as major critical responses.

4633 (H)Survey of African Art. Art products of traditional sub-Saharan African societies as they have evolved in relation to human needs, social organization, technology, history, geography and anthropology. The contribution of African art to world art and approaches toward esthetic evaluation.

4667 (H)Survey of East Asian Art.. Arts of China, Korea and Japan in their historical and cultural settings. Major emphasis on painting, sculpture, and architecture, but other arts including porcelain, furniture and prints.

4800 Special Studies in Art. 1-3 credits, maximum 9. Prerequisite: junior standing and consent of instructor. Courses in media exploration, special subjects and current issues. Offered on campus or through extension workshops.

4900* Directed Study. 1-3 credits, maximum 9. Lab 1-3. Prerequisites: junior standing and written permission of department head. Self-designed special topics in studio art or art history. By consent only.

4993 Senior Honors Project. Prerequisites: departmental invitation, senior standing. Honors program participation. A guided reading and research program ending with an honors thesis or project under the direction of a faculty member. Required for graduation with departmental honors in art.

Arts and Sciences (A&S)

1103 An Introduction to the Arts: Literature, Music and Painting. Formal relationships among painting, music and literature. An introduction to the several arts.

1111 Freshman Orientation. Orientation for freshmen. Study techniques, evaluation of one's abilities and the making of proper educational and vocational choices.

1221 Honors Freshman Orientation. Prerequisite: Honors program participation. Orientation for freshmen to Arts and Sciences Honors program. Introduction to University academic expectations, techniques for achieving academic success, and substantive introduction to material in selected academic disciplines. No credit for students with credit in A&S 1111.

2000 Arts and Sciences Lower-Division Honors Seminar. 1-3 credits, maximum 6. Prerequisite: Honors program participation. Topical seminars in various academic disciplines in the College of Arts and Sciences for freshman and sophomore students in the Honors program.

2123 Language of Art Appreciation. Appreciation of art, music, use of specific art offerings available on campus.

3000 Arts and Sciences Honors Supervised Research. Prerequisites: Honors program participation, consent of instructor and A&S Honors program director. Research to introduction to research or other creative activity in student's major field through participation in professor's research or creative activities.
Aviation and Space Education (AVSED)

1113 Theory of Flight. A ground school course covering Federal Aviation Regulations, theory of flight, power plant operation, service of aircraft, principles of navigation and meteorology. Fulfills the ground school training needed for a Private Pilot Certificate.

1220 Flight Training. 1-2 credits, maximum 2. Lab 4. Meets the flying requirements for a Private Pilot Certificate. Includes all maneuvers and cross-country flying required by the Federal Aviation Administration for the issuance of a Private Pilot Certificate. Requires a minimum of 20 flight hours with an instructor and 15 hours of solo flight. Training conducted at the Stillwater Airport under the direction of Federal Aviation Administration certified instructors. Special fee required.

3333 Advanced Aircraft Systems Control. Prerequisites: 1113, 1222, 2122, 3222, or consent of instructor. Study of modern, complex aircraft systems: airframe, turbine engines, electrical, avionics, pressurization, fuel and icing. Operations and control of these systems as well as the concept of crew resource management. High performance IFR flight, special weather environments, stability augmentation, monitoring systems, aerodynamics, laser inertial reference systems, electronic flight instrument systems, and advanced aircraft performance.

3441 Aerobatic Flight Laboratory. Prerequisites: 1113 and 1222. A minimum of ten hours dual flight time toward the Private and Advanced aerobatic flight maneuvers including sequencing and dimensional box spacing. Special fee required.

3442 Advanced Flight. Lab. 4. Prerequisite: 2332. The final phase of flight training in preparation for the Commercial Pilot Certificate. Requires 20 flight hours with an instructor and 10 flight hours of solo on precision maneuvers. Special fee required.

3443 Introduction to Aviation Law. Prerequisite: 50 credit hours. Introductory overview of aviation law. Insight pertinent to federal governing bodies in addition to local and international laws forming the present and future aviation law. Practices and pitfalls in aviation activities and provides a basic legal research capability.

3551 Multi-engine Flight Laboratory. Lab. 2. Prerequisite: Private Pilot Certificate. Dual flight training in preparation for the Multi-engine Flight Examination. The student will obtain the experience and skill necessary to add an Airplane, Multi-engine Pilot Class Rating to his or her private or commercial pilot certificate. Study of airplane systems, emergencies, single-engine flight and performance characteristics. Special fee required.


3661 Aircraft Traffic Control. Lab. 5. Prerequisites: Flight Instructor Certificate and valid FAA first class or second class medical certification. Dual flight training to meet the Federal Aviation Administration (FAA) criteria for the Instrument Flight Rating to the Flight Instructor Certificate. Special fee required.

Aviation Safety. Prerequisites: 1113 and 50 credit hours. Overview of flight safety including studies in human factors, weather, aircraft crash investigation, accident investigation, and aviation safety programs. Student will be introduced to elements of aviation safety in ground and flight operations.

Intership in Aviation. 1-3 credits, maximum 6. Prerequisites: junior or senior standing, consent of instructor. Individually supervised internships in aviation career areas. Directed field experiences related to the participants area of concentration.

Astronomy (ASTRO)

1223 General Astronomy. Prerequisite: PHYS 1214 or equivalent. More rigorous treatment of material in 1104 for majors in physical sciences and other areas.

1253 Advanced Astronomy. Prerequisite: 1104 or 2253. Topics such as pulsars, quasars, neutron stars, black holes and interplanetary space probes.

1403 Basic Aeronautics. A survey of the fundamentals of flight, history of aviation, and government regulations.

1503 History of Manned Space Flight. Significant historical concepts and events leading to the current status of space exploration.

2113 History of Aviation. History of aviation from its early developments to the present. Historic events and the role of government as they relate to the evolution of the regulatory infrastructure of the aviation industry.

2122 Secondary Flight. Lab. 4. Prerequisite: 1222 or Private Pilot Certificate. First of three courses, 2122, 2322, and 3442, which terminate in the issuance of a Commercial Pilot Certificate or benefit the pilot who wants to improve flying skills. Includes maneuvers and ground-to-air flying. Requires 10 flight hours with an instructor and 30 flight hours solo. Special fee required.

2203 Impact of Aviation and Space Exploration on Society. Survey of significant events and ideas and their economic and social impact on society.

2332 Intermediate Flight. Lab. 4. Prerequisite: 2122. Special flight instruction in night flying, instrument flying, and cross-country flying. Includes training in use of radio navigation and the flight deck. Requires 20 flight hours with an instructor 15 flight hours of solo maneuvers and 20 flight hours of solo cross-country. Special fee is required.

2633 Air Traffic Control and the National Airspace System. Prerequisite: 1113. In-depth knowledge in the subject of air traffic control and the national airspace system facilities, equipment and services, enroute and terminal control areas, computerization and automation, flight service systems, and integrated telecommunications networks.

3223 Advanced Theory of Flight. Special course in the flight sciences, aircraft systems and performance problems, maintenance, operation and inspection of airplanes, and aircrew power plants. Review of aerodynamics, theory of flight, and Federal Aviation Regulations. Prepares the student for the Commercial Pilot Written Examination.

3232 Theory of Instrument Flight. Prerequisite: 1113 or passage of FAA Private Pilot Written Examination. Instrument flight rules, the air traffic system and procedures, and elements of forecasting weather trends.


3332 Advanced Aircraft Systems Control. Prerequisites: 1113, 1222, 2122, 3222, or consent of instructor. Study of modern, complex aircraft systems: airframe, turbine engines, electrical, avionics, pressurization, fuel and icing. Operations and control of these systems as well as the concept of crew resource management. High performance IFR flight, special weather environments, stability augmentation, monitoring systems, aerodynamics, laser inertial reference systems, electronic flight instrument systems, and advanced aircraft performance.

3410 Specialized Studies in Aviation. 1-3 credits, maximum 6. Prerequisites: junior or senior standing and 6 hours credit in AVSED courses. Independent studies, seminars, and training within selected areas of aviation.

3413 Aviation Safety. Prerequisites: 1113 and 50 credit hours. Overview of flight safety including studies in human factors, weather, aircraft crash investigation, accident investigation, and aviation safety programs. Student will be introduced to elements of aviation safety in ground and flight operations.

3420 Internship in Aviation. 1-3 credits, maximum 6. Prerequisites: junior or senior standing, consent of instructor. Individually supervised internships in aviation career areas. Directed field experiences related to the participants area of concentration.
AVIATION AND SPACE EDUCATION

4213 Current Trends and Issues in Aviation. Prerequisite: 3663. Analysis of current issues facing management in various segments of the aviation industry. Specific areas include issues affecting the airline industry and general aviation. Application of previous learning concepts to case studies of practical problems to develop deeper understanding of the subject.

4231 Flight Instructor/Airplanes. Prerequisite: 4133 or concurrent enrollment. Dual flight training to meet the requirements for an FAA Flight Instructor Certificate with an Airplane Category Rating and a Single Engine Class Rating. Approximately 20 dual flight hours including maneuvers practice and practice instruction.

4711 Flight Instructor: Multi-engine. Lab 1. Prerequisites: 3331, 3551, 3562; valid Flight Instructor Certificate and valid first or second class medical certification. Dual flight training to meet the requirement of adding a Multi-engine Flight Instructor rating to the Flight Instructor Certificate. Requires 10 dual flight hours which includes maneuvers practice and giving maneuvers instruction.

5200 Seminar in Aerospace Education. 1-3 credits. maximum 6. Prerequisite: consent of instructor. Individual research problems in aerospace education.

5730* Workshop in Aerospace Education. 1-3 credits. maximum 6. Prerequisite: consent of instructor. Professional workshop in aerospace education for teachers and administrators.

5850* Directed Readings in Aerospace Education. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Directed studies in aerospace education.

5910* Practicum in Aerospace Education. 1-3 credits. maximum 6. Prerequisite: consent of instructor. Directed observation and supervised clinical experiences in aerospace education.

Biochemistry (BIOCH)

3543 General Biochemistry. Prerequisite: CHEM 2344 or 2463. Descriptive survey of the chemistry of living systems. A terminal course for students in applied biological sciences. Not recommended for preprofessional students or for students planning graduate work in biochemistry. No credit for students with credit in 3653.

3653* Survey of Biochemistry. Prerequisite: CHEM 3015 or 3030. An introduction to the chemistry of living systems. Chemical properties of the constituents of living organisms. Mode of formation, reactions and function of these compounds in microorganisms, plants and animals. No credit for students with credit in 3543.

3725 Biochemical Laboratory. Lab 3. Prerequisite: 3653 or 3543 or concurrent enrollment in either. Qualitative and quantitative examination of biochemical materials and reactions.

4113* Biochemistry. Prerequisite: 3653. An extension and expansion of 3653.

4224* Biophysical Chemistry. Prerequisite: CHEM 1515, MATH 2373. Classical and statistical thermodynamics, transport processes, electrochemistry, and kinetics, with emphasis on biological applications.

4900* Special Problems. 1-5 credits, maximum 5. Lab 3-15. Training in independent work, study of relevant literature and experimental investigation of an assigned problem.

5000* Research. 1-6 credits, maximum 6. For M.S. thesis.

5753* Biochemical Principles. Prerequisite: CHEM 3153 or equivalent. Chemistry of cellular constituents; introduction to the chemical processes in living systems. The first in a series of courses for graduate students in biochemistry and related fields.

5823* Biochemical Laboratory Methods. Lab 8. Prerequisites: 4113 or 5753, or concurrent enrollment in either, and CHEM 2113 and 2122, or 3324. Quantitative experiments illustrating biochemical principles and basic laboratory methods. No credit for students with credit in 5930.

5853* Metabolism. Prerequisite: 5753 or 4113. Action sequences and cycles in the enzymatic transformations of fats, proteins and carbohydrates; energy transfer, biosynthesis and integration in the metabolic pathways.

5930* Advanced Biochemical Techniques, 1-5 credits, maximum 5. Prerequisites: 5753 or concurrent registration, and consent of head of department. Comprehensive lecture and laboratory course in advanced research techniques covering chromatography, isotope, enzymes, macromolecules and metabolism. Offered in 5 consecutive parts in a semester. Any or all parts may be taken separately, each for one hour credit. Reduced credit for students with credit in 5823.

6000* Research. 1-15 credits, maximum 60. For Ph.D. dissertation.

6110* Seminar. 1-2 credits, maximum 2 for Ph.D. candidates or 1 for M.S. candidates. Prerequisite: 5853. Graded on pass-fail basis.

6720* Biochemical Regulation. Prerequisite: 5853 or 4113. Mechanisms by which biochemical reactions, pathways and processes are controlled. Qualitative and quantitative behavior of various biochemical systems analyzed.

6742* Physical Biochemistry. Prerequisite: one semester of biochemistry, calculus and physical chemistry. Physical principles underlying molecular phenomena of biological systems for their study. Besides core of topics, additional items may be chosen for individual or group study.

6752* Enzymes: Kinetics and Mechanism. Prerequisite: 5753 or 4113. Theory of and methods for study of enzyme catalysis, including kinetics, chemical modification and model studies, illustrated with examples from the current literature.

6762* Nucleic Acids and Protein Synthesis. Prerequisite: 5753 or 4113. The encoding of information into base sequences of nucleic acids and the expression of this information by means of protein synthesis. Structures, mechanisms, enzymatic synthesis and modification, reaction sequences, and control emphasized.

6772* Protein Structure. Prerequisite: 5733 or 4113. Protein structure (sequence, conformation, quaternary structure) illustrated by examples of selected proteins.

6782* Membranes and Transport. Prerequisite: 5853 or 4113. Components, organization and biosynthesis of cellular membranes, emphasizing structure/function relationships of plasma membranes. Mechanisms and techniques of transport of substances across various membranes including plasma membranes and organelles.

6792* Plant Biochemistry. Prerequisites: 4113 or 5753. Biochemistry of processes and structures of special importance to plants, such as photosynthesis, cell walls, nitrogen fixation, secondary metabolites and storage proteins.

6820* Selected Topics in Biochemistry, 1-2 credits, maximum 6. Prerequisite: 5853. Subject matter will vary from year to year; students should inquire at the department office before enrolling.

Biological Science (BISC)

1114 (L) Introductory Biology: Populations and Ecosystems. Lab 2. Ecological principles, populations, man and environment; genetics, reproduction and development; concepts of evolution, selection, adaptation, speciation and taxonomy. For the nonmajor.

1214* (L) Biochemical Laboratory: Organisms. Lab 2. Cellular organization and function, energy relations, maintenance of living systems, coordination and behavior. For the nonmajor.


1603* (N) Animal Biology. Lab 2. Prerequisites: 1304, morphology, physiology, ecology, embryological development behavior, life histories and importance to man of representatives of major groups. Evolution of systems and mechanisms which have allowed animals to survive and adapt to diverse habitats.

2220 Current Topics in Biology. 2 credits, maximum 8. Prerequisite: 1114 or 1304 equivalent. Topics of current interest especially designed for nonmajor majors.

2222 Survey of Human Diseases. Prerequisites: 1114 or 1304 or equivalent. Types of diseases, such as infectious or genetic, and diseases of major organ systems. How diseases are diagnosed and treated; biological processes involved in disease. For the nonbiology major.

2232 Human Reproduction. Prerequisite: 1114 or 1304 or equivalent. Human reproduction, and the responses of organisms to stimuli. Emphasis on how natural and artificial reproductive processes deal with in terms of anatomy, physiology, embryology, genetics and evolution. Birth control, and teratogenic substances as well as pregnancy and childbirth. For the nonbiology major.

2252 Environment and Society. Prerequisite: 1114 or 1304 or equivalent. The impact of human activities on the natural world and an analysis of the potential of technological and societal changes on the environment. For the nonbiology major.

2272 Human Origins. Prerequisite: 1114 or 1304 or equivalent. The scientific evidence for the evolution of human morphology, technology, behavior and ecology. For the nonbiology major.

2283 Microbes and Society. Lab 2. Prerequisite: 1114 or 1304 or equivalent. Cheiros of bacteria and techniques used in their isolation, cultivation and identification. Food sanitation, disease transmission and immunity. Water treatment and chemical and physical control of bacteria. For the nonbiology major.

3014* Cell and Molecular Biology. Lab 3. Prerequisites: 1403, or 1603, or equivalent. Inheritance in plants, animals and microorganisms. Molecular and cellular aspects.

3034* General Ecology. Lab 3. Prerequisite: 1403, or equivalent. Physical and biotic environment, and its relationship to the existence and distribution of biological complexity in the community, community ecology, natural ecosystems, and man's interaction with ecosystems.

3263 Plants and People. Prerequisite: 1114 or 1304 or equivalent. Types of plants, form and function, history of uses of plants and plant products for food and beverages, fiber, medicinal purposes, and in people's surroundings. For the nonbiology major.

3604 Biological Principles for Teachers. Lab 2. Prerequisites: 1304, CHEM 1314, ZOOL 3204. Coverage of aspects of potential science teacher reviewing biological phenomena and principles as related to the curriculm.

4100 Problems and Special Study. 1-4 credits, maximum 4. Prerequisite: approval of instructor. Participation in research problems involving library, laboratory or field studies.

5100* Current Topics in Biology for Teachers. 1-4 credits, maximum 4. Prerequisite: approval of instructor. Acquaints the primary or secondary teacher with recent advances in biology. May include lecture, laboratory or field work.

Botany (BOT)

3005 Field Botany. Lab 6. Prerequisite: BISC 1114 or 1304 or equivalent. Collecting and identifying vascular plants including use of keys and terminology. Field recognition of native dominant Oklahoma plant and plant communities on sight, and discussion of the ecological factors that control them. For students in range management, wildlife ecology, animal science, forestry and agronomy, and for non scientists interested in learning the plants of Oklahoma. Three or four weekend field trips required.

3013* Biological Microtechnique. Lab 3. Prerequisite: 1403 or 1603. Techniques for preparation of biological materials for microscopic examination. Same course as ZOOL 3013.

3024* Plant Diversity. Lab 4. Prerequisite: BISC 1114 or 1304 or equivalent. Forms and life histories of selected plants with emphasis on some of the less familiar forms. The diversity of plant forms as well as basic similarity of life histories; importance of each form to man and its environment. Field trips required.
Business Report Writing. Prerequisite: six credits of English. Fundamentals of writing business reports, including coverage of mechanics, content, and structure of business reports. Practice in writing business reports as well as oral presentations of reports.

Seminar in Administrative Communication. Understanding and application of valid and relevant communication principles and theories. Designed to develop management-level personnel who can effectively and efficiently use oral and written communications as administrative tools to organizational functioning.

Business Communication Applications. 1-3 credits, maximum 3. Application of communication techniques to the business setting. Interpersonal communication skills necessary for the manager in a business organization. Problems and applications within the modern business setting.

Business Professions (BUSPR)

2313 Production Typewriting. Lab 2. Prerequisite: 1100 or equivalent. Continued skill development in correct techniques, speed and accuracy with major emphasis on the application of skill.

2630 Automated Office Applications. 1-3 credits, maximum 3. Lab 4. Prerequisites: 2313 or equivalent and 24 semester credit hours. Application of automated office equipment to work processes in the office. Operation and use of word-processing equipment for text entry and output of output from the microcomputer in text editing and other office information systems, and transcription of office communications.

2923 Office Problems in Typewriting. Lab 2. Prerequisite: 2313 or equivalent. Problems in office situations requiring application of typing knowledge and skills. Emphasis on quality work at high speeds.

3633 Teaching Bookkeeping and Accounting. Prerequisites: ACCTG 2203, ABSED 3213, CIED 2313. Knowledge of accounting subjects, and full admission to Teacher Education. Teaching bookkeeping and accounting including development of objectives; organization, assignment and preparation of instructional resources and materials. Administration and interpretation of assessment techniques; design and use of diagnostic and achievement examinations; interaction patterns and instructional modifications.

4737 Teaching Business Education Skill Courses. Prerequisite: full admission to Teacher Education. Instructional methods in the teaching of skill development courses, including classroom interaction patterns, instructional modality evaluations.

Chemical Engineering (CHENG)

2033 Introduction to Chemical Process Engineering. Lab 3. Prerequisite: CHEM 1515. Application of mathematical and scientific principles to solving chemical engineering problems. Simple material and energy balances applied to process design. The nature and application of unit operations and unit processes to the development of chemical processes.

3013 Rate Operations I. Lab 3. Prerequisites: 2033 and ENGS 3233. Basic rate equations for heat, mass and momentum transport; the transport analogies, solutions and correlations for predicting transport rates for practical applications in design and analysis of process equipment.

3113 Rate Operations II. Prerequisites: 3013, 3473. Continuation of CHEG 3013.


4737 Chemical Engineering Thermodynamics. Lab 3. Prerequisites: ENGS 2213; concurrent enrollment in 2033 and CHEM 3434. Application of thermodynamics to chemical process calculations. Behavior of fluids, including estimation of properties by generalized methods. Study of chemical thermodynamics, including heats of reaction, chemical reaction and phase equilibria.

4002 Chemical Engineering Laboratory I. Lab 6. Prerequisites: 3013 and 3473. Applications of heat, mass, and momentum transfer, unit processes and unit operations principles to the analysis of bench and pilot-scale equipment. Interpretation of experimental data and the presentation of results are emphasized.

4122 Chemical Engineering Laboratory II. Lab 6. Prerequisite: 4002. A continuation of 4002.

Chemical Process Instrumentation and Control. Prerequisites: 3013 and MATH 2613. Instruments for measuring temperature, pressure, composition and other process variables; different modes of control and their influence on process stability. System analysis and design through linearization techniques.

4990 Special Problems. 1-5 credits, maximum 5. Lab 15. Prerequisite: senior standing. Training in independent work, study of relevant literature and experimental investigation of an assigned problem.
5000* Master’s Thesis. 1-6 credits, maximum 6. Prerequisite: approval of major professor. Methods used in research and thesis writing.

5030* Professional Practice. 2-6 credits, maximum 8. Prerequisite: senior standing and consent of instructor. Application of professional engineering principles to the solution of real-life engineering problems in an actual or simulated industrial environment. Includes application of design and testing procedures, economic evaluation and reporting on one or more assigned projects.

5100* Special Topics In Chemical Engineering. Lab 2-6, 2-3 credits, maximum 6. Prerequisite: consent of instructor, Small group and individual projects in unit operations, unit processes, chemical kinetics, computer applications, process modeling or any of a wide range of chemical engineering topics. May be repeated for credit if subject matter varies.

5123* Advanced Chemical Reaction Engineering. Prerequisite: 4473. Advanced principles and applications of chemical kinetics in catalysis, heterogeneous systems, non-ideal reactions, polymerization and biological reactions.

5213* Selected Diffusional Unit Operations. Mass transfer in fluids. Diffusion in liquids and gases. Equilibrium stage and transfer unit concepts. Mass transfer concepts of diffusional unit operations such as absorption, adsorption, distillation, drying, humidification and liquid extraction.

5283* Biochemical Engineering. Prerequisite: consent of instructor. Application of fundamental chemical engineering principles to challenges posed by biotechnology. Fermentation technology, biological mass transfer and kinetics, design of biodesigning processes and scale-up.

5320* Introduction to Nuclear Engineering. 3-4 credits, maximum 4. Principles and application of nuclear energy. The fission reaction, the behavior of neutrons, nuclear reactor theory and nuclear reactors.

5423* Process Heat Transfer. Application of fundamental principles of single- and two-phase thermodynamics and heat transfer to the design and analysis of process heat transfer equipment.

5463* Two Phase Flow and Heat Transfer. Prerequisite: 2122, 2153 or one and one-half units of high school algebra. The beginning chemistry course recommended for students in the broadest sense which includes the modern technologically important materials, organometallics, and inorganic substances of biological significance.

6343* Advanced Topics in Chemical Engineering. 2 credits, maximum 9. Topics in chemical engineering unit operations in design. Advanced mathematical techniques in chemical engineering problems. May be repeated for credit if subject matter varies.


Chemistry (CHEM)

1014 (L,N)Chemistry in Civilization Lab 2 Sym. methods and contributions to society of the chemical sciences. Includes polymers, pollution, energy, consumer chemicals, drugs, nuclear science and other topics. No credit for students with credit in 1215, 1314.

1215 (L,N)General Chemistry. Lab 2. The beginning chemistry course recommended for students in the broadest sense which includes the modern technologically important materials, organometallics, and inorganic substances of biological significance.

1225 (N)General Chemistry. Lab 2. Prerequisite: 1215 or advanced placement. A continuation of general chemistry. No credit for students with credit in 1215.

1314 (L,N)General Chemistry. Lab 2. Prerequisite: MATH 0123 or one and one-half units of high school algebra. The beginning chemistry course recommended for students in the broadest sense which includes the modern technologically important materials, organometallics, and inorganic substances of biological significance.

5000* Thesis. 1-6 credits, maximum 6. Prerequisite: senior standing. Training in independent work, study of relevant literature and experimental investigation of an assigned problem.

5011* Graduate Seminar. Preparation and presentation of seminars, usually on subjects of current interest taken from the literature. Completion of 1 credit hour required for M.S. degree.
CHEMISTRY

5103* Physical and Chemical Separations. Prereq: one year of physical chemistry. Principles of bulk and multi-stage separation methods: chromatography, liquid-liquid extraction and zone melting.

5113* Equilibrium and Kinetics in Analytical Chemistry. Prerequisite: one year of physical chemistry. Physical and chemical principles of equilibria and kinetics as applied to analytical problems.

5220* Modern Topics for Teachers. 1-6 credits, maximum 6. Prerequisite: teaching experience. Designed to help elementary and secondary science teachers improve their subject matter competence in chemistry. Content varies, depending on the needs of specific groups of teachers.

5222* Chemistry of High Polymers. Prerequisites: 3153 and 3434 or equivalent, Preparation and polymerization of organic monomers; properties and uses of resulting high polymers; the theoretical framework of the modern polymer industry. A continuation of 5260.

5260* Inorganic Chemistry I. 1-3 credit hours, maximum 3. Prerequisites: 3353 or equivalent, and 3 hours of physical chemistry. Bonding theory, molecular symmetry and structure, characterization of inorganic compounds, coordination chemistry, crystal field theory, solution chemistry, and mechanisms of inorganic reactions in solution.

5283* Solid-state Chemistry. Prerequisite: 5260. Structure, bonding, and properties of crystalline and amorphous inorganic solids. Emphasis on the characterization of inorganic materials and phase transitions in inorganic solids.

5323* Reactions of Organic Compounds. Prerequisite: 3153. Products and mechanisms of inorganic reactions; prediction of their course.

5324* Heterocyclic Compounds and Medicinal Chemistry. Prerequisite: 5362. Preparations and syntheses of cyclic organic compounds containing atoms other than carbon in the ring. Modern synthetic techniques as well as industrial methods for the preparation of heterocycles, especially those with medicinal properties and uses as related to structural characteristics of the compounds.

5353* Chemistry of Natural Products. Prerequisite: 5323. Complex naturally occurring organic compounds such as alkaloids, terpenes and steroids.

5420* Special Topics in Organic Chemistry. 1-9 credits, maximum 9. Prerequisite: 3153. Deals with topics not covered in other courses.

5453* Chemical Kinetics. Prerequisite: 3535. Theories and applications of chemical reactions and their theoretical interpretation.

5523* Quantum Chemistry II. Prerequisite: 5623 or PHYSC 3613. Molecular quantum mechanics and chemical bonding.

5553* Molecular Spectroscopy. Prerequisite: 5623. Spectra and structure of molecules.

5623* Chemical Thermodynamics I. Prerequisite: 3535. Statistical and classical thermodynamics applied to chemical systems.

5624* Quantum Chemistry I. Prerequisite: 3535. Fundamentals of quantum mechanics, including classical mechanics, wave representation of matter, the Schroedinger equation and atomic structure.

5723* Solutions of Electrolytes. Prerequisite: 3533. Thermodynamics of solutions of electrolytes; cell potentials, transference coefficient, diffusion, electrical conductivity and their theoretical interpretation.

5960* Inorganic Chemistry II. 1-3 credits, maximum 3. Prerequisite: 5260. Chemistry of main group and transition metal organometallic and coordination compounds, metal clusters, and catalysis by organometallic polymers, bioinorganic chemistry, and materials chemistry.

Research. 1-12 credits, maximum 55. Prerequisite: M.S. degree in chemistry or permission of instructor. Independent investigation under the direction and supervision of a major professor.

6011* Advanced Seminar. Prerequisite: 5011 or M.S. degree. Preparation and oral presentation of critical reviews on chemical subjects. Usually related to the student’s research area. Completion of 1 credit hour required for the Ph.D. degree.


6103* Electroanalytical Chemistry. Prerequisite: 4204. The theory, practice and instrumentation in various aspects of modern electroanalytical chemistry.

6113* Analytical Spectroscopy. Prerequisite: 4204. Survey of selected topics in analytical applications of spectroscopic techniques. Fundamentals concepts as well as current trends in research, including instrumentation.

6153* Mechanism of Organic Reactions. Prerequisite: 5324. Preparations and syntheses of cyclic organic compounds containing atoms other than carbon in the ring. Modern synthetic techniques as well as industrial methods for the preparation of heterocycles, especially those with medicinal properties and uses as related to structural characteristics of the compounds.

6353* Chemistry of Natural Products. Prerequisite: 5323. Complex naturally occurring organic compounds such as alkaloids, terpenes and steroids.

6420* Special Topics in Organic Chemistry. 1-9 credits, maximum 9. Prerequisite: 3153. Deals with topics not covered in other courses.

6453* Chemical Kinetics. Prerequisite: 3535. Theories and applications of chemical reactions and their theoretical interpretation.

6523* Quantum Chemistry II. Prerequisite: 5623 or PHYSC 3613. Molecular quantum mechanics and chemical bonding.

6553* Molecular Spectroscopy. Prerequisite: 5623. Spectra and structure of molecules.

6623* Chemical Thermodynamics II. Prerequisite: 5523. Continuation of 5533.

6650* Selected Topics in Advanced Physical and Inorganic Chemistry. 1-6 credits, maximum 12. Prerequisite: consent of instructor. Supervised study of selected topics and fields not otherwise covered.

Chinese (CHIN)


1225 Intermediate Chinese II. Prerequisite: 1115 or equivalent proficiency. Continuation of 1115. Mastery of basic grammatical patterns and conversational principles, and increasing repertory of Chinese characters.

2123 Intermediate Chinese I. Prerequisite: 1225 or equivalent proficiency. A continuation of 1225. Emphasis on fluency in spoken Mandarin Chinese, structures of greater complexity, a greater repertory of characters and vocabulary, themes, and reading ability.

2223 Intermediate Chinese II. Prerequisite: 2123 or equivalent proficiency. A continuation of 2123. Continuing stress on fluency in spoken Mandarin Chinese and also introduction to a variety of written materials, in both classical and simplified characters.

Civil Engineering (CIVEN)

2613 Surveying I. Lab 3. Prerequisite: MATH 1613 or 1715. First course in a measurement science. Introduction and application of plane surveying procedures. Field problems related to I.R. and Topographic surveying, topographic surveying and topographic surveying and computer applications to surveying calculations.


3413 Structural Analysis. Prerequisite: 3114. Analysis of internal forces and deflections of structures. Kinematics of statically indeterminate structures.

3513 Structural Steel Design. Lab 3. Prerequisite: 3114. Introduction to the design of structural steel members and connections in accordance with AISC specifications.

3523 Reinforced Concrete Design. Lab 3. Prerequisite: 3114. Introduction to the design of reinforced concrete elements in accordance with the design strength requirements of the ACI Building Code.

3613 Surveying. Lab 3. Prerequisite: MATH 1613 or 1715. For students not majoring in civil engineering. Basic course in plane surveying techniques, linear and angular measurements, traverses, differential leveling, horizontal and vertical curves and earthwork calculations.


3533 Transportation Engineering. Lab 3. Prerequisite: 3613 or consent of instructor. Planning, design and operations of transportation facilities. Vehicle characteristics and human factors in design. Traffic stream variables and their measurement, traffic flow models, Highway and street intersection capacity and level of service, Traffic control concepts, Traffic systems management.

3713 Introduction to Geotechnical Engineering. Prerequisite: ENGS C 2114. Physical and mechanical properties of soils, including: specific gravity, grain size distribution, plasticity, permeability, consolidation, and shear strength. Use of physical and mechanical properties to calculate stresses in a soil mass, lateral earth pressures, bearing capacity, and slope stability.

3813 Environmental Engineering Science. Prereq- uisite: CHEM 1515. Engineering aspects of the life support system; the carbon-oxygen cycle, cycling of nitrogen, sulfur and phos- phorus; and the hydrologic cycle. Concepts of environmental pollution and degradation. Techniques for mitigation; water and waste- water treatment, solid and hazardous waste management, and air pollution abatement. Calculation of pollution potential and treatment system parameters.

3823 Human Impact on the Environment. The activ- ities of humans and how they affect the aqueous, terrestrial and atmospheric environ- ments.

3833 Hydraulics. Prerequisites: CHEM 1515, PHYSC 2014. Basic hydraulic principles and their applications in civil engineering problems. Use of physical and mechanical properties of water, water pressure and force, water flow in pipes and networks, water pumps, water flow in open channels, hydraulics of wells, hydrau- lic similitude and model studies, and water measurements. Basic principles and concepts will be highlighted by laboratory demonstration and computer solution techniques.

3843 Introduction to Hydrology I. Prerequisites: CHEM 1515, PHYSC 2014, LIVEN 3833 or AGEN 2012. Basic principles of surface and groundwater hydrology and their application in engineering problems. Topics include the hydrologic cycle, weather and hydrology, precipitation, evaporation, transformation, subsur- face waters, surface flow hydrographs, hydrologic and hydraulic stream routing, probability of hydrologic events, application of hydro- logical models. Same course as AGEN 4131.

4010* Civil Engineering Research. 1-4 credits, maxi- mum 12. Prerequisite: senior standing or consent of instructor. Research and investigation of civil engineering problems.

4042 Engineering Practice. Prerequisite: senior standing or consent of instructor. Topics of management administration and law of civil engi- neering projects. Specific areas include project management, verbal and written communica- tions, bidding documents, bidding procedures, professional ethics, and professional liability. Also advantages of professional registration and membership in professional organizations.

4043 Senior Design. Prerequisites: 3519, 3523, se- nior standing. Major comprehensive design experience using the team approach. Industry practitioners provide design projects and ana- lyze the results. Emphasis is placed on the under- graduate experience and provides the student with opportunities to analyze and design com- plex structures.

4273* Construction Planning and Scheduling. Lab 3. Prerequisites: senior standing and consent of instructor. Critical-path methods of plan- ning, scheduling and controlling construction projects. Includes both computer and noncomputer techniques.

4711* Basic Soils Testing Laboratory. Prereq: 3613, 3614, 3616 or 3713 or equivalent. Includes laboratory measurement of the physical and mechanical properties of soils: specific gravity, grain size distribution, plasticity, compaction, compressibility, and shear strength.
4763* Construction Estimating. Lab 2. Prerequisite: senior standing. The construction industry, its make-up, operation, estimating and bidding procedures. Theory and practice of estimating materials, labor, equipment and overhead costs for various types of construction. Emphasis on preliminary cost estimates during the conceptual design phase of a construction project.

4833* Unit Operations in Environmental Engineering. Prerequisites: 3813 and 3833. Basic theory of water and wastewater unit operations. Calculation of treatment system parameters based on theory.

5000* Master’s Thesis or Report. 1-6 credits, maximum 6. Prerequisite: graduate standing. A student studying for a master’s degree may enroll in this course for 2 credit hours if a report is to be written; 6 credits if a thesis is to be written.

5013* Civil Engineering Seminar. 1-3 credits, maximum 6. Prerequisites: graduate standing and approval of major professor. Review of literature of major fields of civil engineering.

5020* Civil Engineering Research. 1-6 credits, maximum 6. Prerequisites: graduate standing and approval of major professor. Research and investigations other than thesis studies.

5030* Engineering Practice. 1-6 credits, maximum 9. Prerequisite: approval of adviser. Professional supervised civil engineering practice involving authentic projects for which the student assumes a degree of professional responsibility. Activities must be approved in advance by the student’s adviser and may consist of experience on-campus or off-campus, or both. Periodic reports both oral and written are required as specified by the adviser.

5080* Engineering Problems. 1-3 credits, maximum 6. Prerequisite: graduate standing. Problems of particular interest to graduate students in the field of applied science.


5143* Project Engineering and Management. Prerequisite: graduate standing or consent of instructor. Management of the design and construction of civil engineering projects. Topics include owner’s study, formation of project teams, design coordination, construction, and project closeout.

5153* Contract Administration. Prerequisite: graduate standing or consent of instructor. Methods and techniques of tracking and control of construction projects. Evaluation of current research findings to contract implementation.

5163* Construction Equipment Management. Prerequisite: graduate standing or consent of instructor. Analysis of construction equipment. Performance under various operating conditions. Application of engineering fundamentals to construction projects. Selection and costs of equipment, prediction of equipment production rates, and unit costs of work in place.

5173* Concrete Construction. Prerequisite: graduate standing or consent of instructor. Design and construction of concrete structures, control of loads, deflections, and stresses of forming systems. Evaluation of economics of formwork designs.

5263* Traffic Analysis. Prerequisites: Basic courses in soil mechanics and geology. Prediction of geotechnical engineering characteristics of soil and rock. Evaluation of social, environmental, and traffic impacts. Emphasis on traffic volume and capacity and urban design, construction, management, and environmental and ecological problems.

5303* Systems Analysis for Civil Engineers. Prerequisite: senior or graduate standing. Systems theory of procedures, analytical work and models for performance. Application of systems analysis techniques to the generation, evaluation and selection of alternative transportation systems.


5353* City Planning and City Organization. Lab 3. Prerequisite: senior or graduate standing. Study and extension in city growth, civic, legal and engineering aspects. Subdivisions, zoning, park system, water front, street systems, airports and landing areas. City engineering organization, city planning, structural design, construction, management, and environmental and ecological problems.


5373* Design of Traffic Control Systems. Prerequisite: 3633. Traffic control systems design, available technological options and range of agency needs. Design of vehicle detectors, controllers, communications links, signal display hardware and wiring. Design of traffic signal timing plans using computer simulation models. Freeway surveillance and control: ramp metering, incident detection and motoring in transit systems. Preparation of transportation control documents and construction supervision.


5403* Advanced Strength of Materials. Prerequisite: 3114. General stresses of stress and strain, theories of failure, energy principles, beam bending, plasticity, stress and strain in prismatic shafts, beams on elastic foundations, pinions and shells, elastic stability.

5414* Classical Methods of Structural Analysis. Credit 3. Advanced analysis of indeterminate frames, trusses and arches by classical, numerical, and energy methods with emphasis on methods for hand computations.


5500* Computer-aided Structural Design and Analysis. Prerequisite: senior or graduate standing. Application of analysis and CAD software to the design of structural systems.

5512* Advanced Reinforced Concrete Design. Prerequisite: 5323. Advanced topics in reinforced concrete design with emphasis on frames, slabs, and earthquake-resistant structures.

5523* Advanced Steel Structure Design. Prerequisite: 5313. Advanced topics in steel design such as design of beam, plate girders, composite design, fatigue and fracture, stability, and bracing design.


5543* Bridge Design. Prerequisites: 3513 and 3523. Structural design of steel and concrete highway bridges, including bridge types, parts of a bridge, load and load distribution, analysis, design, and bridge rating. Emphasis on topics of special interest to students.

5563* Pavement Evaluation and Rehabilitation. Lab 3. Prerequisite: senior or graduate standing. “State-of-the-art” pavement evaluation procedures and rehabilitation techniques. Field and laboratory methods of evaluating in situ pavement performance. Rehabilitation techniques including resurfacing, recycling, reconstruc tion, and restoration. Selection of the most feasible rehabilitation method based on life cycle costs.


5573* Concrete Materials and Mix Design. Lab 3. Prerequisites: 3523. Methods of concrete mix design and the aggregate components of concrete and their effect on concrete strength and durability. Experimental investigation of physical properties.

5843* Hydrology II. Prerequisite: 3843. Physical phenomena of the surface water hydrologic processes. Derived and empirical models for evaporation, infiltration, basin runoff and unsteady flow routing will be presented. Basic flood analysis techniques will also be studied.

5853* Fundamentals of Biochemistry and Microbiology. Microbial and biotechnology. Microbiological and biochemical principles applied to environmental engineering analysis and design.

5863* Advanced Unit Operations in Environmental Engineering. Prerequisite: 4833. Theory and design of advanced physical-chemical water and wastewater treatment processes applied to municipal, industrial, and hazardous waste situations.

5873* Air Pollution Control Engineering. Causes, effects and control of atmospheric pollution.

5883* Residuals and Solid Waste Management. Theory, design and operation of systems for handling, treatment, and disposal of process sludges (water treatment, wastewater treatment, industrial) and solid wastes. Potential material reclamation options.


5923* Water Resources Planning and Management. Application of engineering economics and microeconomic theory to the planning and management of water resources projects including: flood control, hydroelectric, water supply, and urban stormwater. Systems analysis approaches, primarily linear and dynamic programming, and their application in water resources.

5933* Water Treatment. Prerequisite: 4833. Theory, design and operation of water treatment plants. Sizing of various unit processes. Water treatment plant control procedures.

5943* Unit Operations and Processes Laboratory. Lab 3. Prerequisite: 4833, 5813 or equivalent. Bench and pilot-scale experiments as physical models of water and wastewater treatment processes. Techniques of data collection and analysis applied to design of physical, chemical and biological processes.

5953* Biological Waste Treatment. Lab 3. Prerequisite: 4833 or equivalent. Fundamentals of microbial systems applied to waste treatment processes. Standard suspended-growth and fixed biotol wastewater and sludge suspensions and treatment system design calculations.

5963* Open Channel Flow. Prerequisite: 3833. Open channel hydraulics, energy and momentum concepts, resistance, channel controls and transitions, flow routing, and sediment transport.

5973* Water Quality. Prerequisite: graduate standing or consent of instructor. Ground water pollution legislation. Fate and transport of nutrients, metals, other anions and cations, organics, bacteria and viruses in the subsurface environment. Pollution containment, abatement techniques. Aquifer restoration.

5983* Groundwater Pollution Control. Theory, design and operation of groundwater pollution control systems. Includes examples from site specific applications as well as regional or national focus.

6000* Ph.D. Research and Thesis. 1-16 credits, 30. Independent research under the direction of a graduate faculty student by students working beyond the level of Master of Science degree.

6100* Seminar. 1-6 credits, maximum 12. Prerequisites: consent of instructor and approval of the student’s advisor committee. Analytical study with suitable reports on problems in one or more of the subfields in civil engineering by students working beyond the level of Master of Science degree.


6413* Introduction to Plate and Shell Structures. Prerequisite: 5113. Bending of thin plate structures to include rectangular and circular plates. Analysis of orthotropic plates by classical and numerical methods. Introduction to shell bending theory.

6433* Structural Dynamics. Prerequisites: 5113 and 5413. Analysis of bars, frames, towers, multi-story building and truss structures subjected to dynamic disturbances; investigation of lumped and distributed mass systems; natural frequencies, response spectra, applications to blast loading and earthquake analysis.

6434* Finite Element Analysis in Engineering, Lab 2. Prerequisite: consent of instructor. Finite element methods from an advanced viewpoint. Matrix mechanics: approximation theory; weight functions and shape functions; different types; parametric mappings; convergence criteria and error analyses; nonlinear and transient methods; eigenanalysis; programming techniques; applications to solid mechanics, structures, fluids mechanics, and thermal problems.

6444* Boundary Element Methods in Engineering. Lab 2. Prerequisite: consent of instructor. Matrix formulation and solution of complex two- and three-dimensional problems cast as boundary integral equations. Synthesis of integral relationships; elementary and advanced applications in solid mechanics, acoustics, fluids, and thermal problems; coupling with finite element analysis.

6533* Behavior of Reinforced Concrete Structures. Prerequisite: 5513. Influences of creep, shrinkage, strain, and repeated and dynamic loads, high temperatures and complex states of stress on the performance of reinforced concrete structures.

6543* Plastic Steel Design. Plastic steel design in accordance with AISc specifications. Design of single and multistory frames. Limit analysis using energy methods of analysis.


6723* Advanced Geotechnical Engineering. Prerequisites: 5713 and GEOI 3024. Geologic occurrence and engineering significance of ground failure hazards such as slope movements, streambank erosion, subsidence, metal and soil failures. Emphasis on qualitative identification of ground failure hazards with quantitative assessive and remedial actions.

6733* Selected Topics in Geotechnical Engineering. Prerequisite: graduate standing in major area of geotechnical engineering, or consent of instructor. Recent developments in geotechnical engineering and selected geotechnical areas only briefly dealt with in prior courses.

6823* Environmental Concepts and Analysis II. Prerequisite: 5853. Advanced application of physical, chemical and biological principles in establishing quantitative relationships in control of the aqueous environment and in sanitary engineering analysis and design.

6843* Stochastic Methods in Hydrology. Prerequisites: 5843 or AGEN 4313 and STAT 4053 or equivalent. Stochastic and statistical hydrologic analyses of surface water and groundwater systems. Analyses of urban and rural drainage, and detention systems. Same as AGEN 6513.

6853* Modeling of Water Resources Systems. Prerequisites: 5843 and 5913. Application of fi- nite elements and fine-scale elements to predict water flow and chemical and biological water quality in saturated-unsaturated ground waters, streams, lakes, urban areas, and reservoirs.

6913* Advanced Environmental Laboratory Analysis. Lab 3. Prerequisite: 5813. Instrumental analysis of environmental contaminants. Process samples, effluents, residuals, and environmental samples. Use of gas and liquid (ion) chromatography, atomic absorption and analytical methods.


6933* Operational Control of Wastewater Treatment Plants. Prerequisites: 5853 and 5953 or consent of instructor. The use of scientific and engineering principles for the management of wastewater treatment facilities.

6953* Advanced Biological Waste Treatment. Prerequisite: 5953. Advanced biological treatment processes and the role of the computer system. Nutrient management, anaerobic wastewater treatment, hazardous waste bioremediation, land treatment systems. Use of kinetic models for system design.

---

**Computer Science (COMSC)**

2113 (A) Computer Programming. Lab 2. Prerequisites: MATH 1513. Programming in a high-level programming language. Introduction to algorithmic design, problem-solving techniques, and structured programming. Examples of applications from various areas such as business, science, or engineering.

2123 (A) Computer Science I. Prerequisites: 2113, concurrent enrollment in MATH 2265. Nonnumerical algorithms, string processing, program control structures, data structure. Introduction to internal searching and sorting methods; linear linked lists.

2133 Computer Science II. Prerequisite: 2123. Description and implementation of non-numerical problems. The concept of an algorithm in narrative, symbolic and PDL format. Application of iterative and recursive algorithms and elementary data structures.

2203 Discrete Mathematics I. Prerequisite: MATH 1113 or 1115. Logic, set theory, proof techniques, probability and combinatorics, relations and functions, matrix algebra, graphs, Boolean algebra and lattices. Same course as MATH 2203.

2301 FORTRAN 77 Programming. Lab 2. Prerequisites: 2113. FORTRAN 77 control structures, arrays, subroutines, functions, input/output. A major programming assignment will be completed by each student enrolled in the course.

2311 PASCAL Programming. Lab 2. Prerequisite: 2123. PASCAL control structures, data structures, procedures, functions, recursive procedures, input/output.

2321 PL/I Programming. Lab 2. Prerequisite: 2113. PL/I control structures, data procedures, functions, recursive procedures, based variables, input/output.


2351 UNIX Programming. Lab 2. Prerequisite: 2123. The UNIX programming system. The programming environment. The UNIX file system and the shell. Use of pipes and filters.

3000 Industrial Practice in Computer Science. 1-6 credits, maximum 12. Prerequisites: 3443, MATH 2365, junior standing, consent of departmental advisor. Applied computing in industry. Topics vary with cooperating employers. Written reports will be specified by advisor.

3023 Discrete Mathematics II. Prerequisite: MATH 2203 or 2213. PASCAL vector analysis, algebraic structure, coding theory, finite state machines, machine decomposition, compiler design, data representation, theory. Same course as MATH 3203.

3213 Microcomputer Principles and Applications. Lab 2. Prerequisites: junior standing or above. Introduction to microprocessors. Digital logic elements and number systems, memory components and organization. Microprocessor and operating system organization, assembly language programming, software development, interfacing techniques. Same course as ECEN 2213.

3322† Programming. Lab 4. Prerequisite: 2123. ADA-R control structures, data structures, subprograms, types, parallel processing, exception conditions. Special fee required.

3311 MODULA-2 Programming. Lab 2. Prerequisites: 2123 and 2301 or 2311. MODULA-a control structures, data structures, types, procedures, functions, modules, concurrent processes, coroutines.

3321 APL Programming. Lab 2. Prerequisite: 2123. APL symbolism, scalar, vector and array operations, functions, procedures.

3323 ALGOL 68 Programming. Prerequisite: 2333. Programming in the algorithmic language ALGOL 68. Simple modes, user defined modes, logical units, routines and procedures, transput.

3434* Logic Programming for Artificial Intelligence. Prerequisite: 2203 or MATH 2003 or PHIL 1931 (required); CONSC 4344 (recommended). Propositional and first-order logics. Resolution based automated theorem proving. Programming in Prolog. Artificial intelligence topics with a logic programming perspective.

3363* Organization of Programming Languages. Prerequisites: 2133, 2302. Programming language constructs. Run time behavior of programs. Language definition structure. Control structures and data flow. Examples from ALGOL 60, 68, APL, SNOBOL 4, LISP and RPG.

3401 VAX Assembler. Lab 2. Prerequisite: 2123. VAX assembler instructions, addressing modes, macro, pseudo instructions, control and data registers, register conventions, virtual memory concepts.

3411 IBM Assembler. Lab 2. Prerequisite: 2123. IBM assembler instructions, addressing modes, macros, pseudo instructions, control and data register conventions, virtual memory concepts.

3421 PERKIN ELMER Assembler. Lab 2. Prerequisite: 2123. PERKIN ELMER assembler instructions, addressing modes, macros, pseudo instructions, control and data register conventions, virtual memory concepts.

3424* File Structures. Lab 2. Prerequisite: 2133. Basic physical characteristics of peripheral storage devices. File organization and processing methods for sequential, direct, indexed, tree structured and inverted files. Application of data structure concepts to logical and physical file organization: Performance analysis. Elements of advanced data base systems.

3431* C Programming Language. Lab 2. Prerequisite: 2123. C programming language types, operators, expressions, control flow, functions, structures, pointers, arrays, UNIX interface.

3443 Computer Systems. Prerequisite: 2123. Functional and register level description of computer systems, computer structures, addressing modes, machine language, parallel and sequential operations. Introduction to file processing operations and auxiliary storage devices. Programming assignments are implemented in C language. Same course as MATH 4513.

4513* Numerical Mathematics: Analysis. Prerequisites: MATH 2613, 3013, knowledge of FORTRAN. Computer arithmetic and rounding errors; numerical methods and error analysis associated with interpolation, least square approximation, roots of equations, integration, finite differences and ordinary differential equations, systems of linear algebraic equations. Same course as MATH 4513.

4570* Special Topics in Computing. 1-3 credits. Prerequisite: 2133. Advanced topics and applications of computer science. Typical topics include operating systems, multiprocessor systems, program synthesis and systems; various mathematical and statistical packages. Designed to allow students to study topics not provided in existing courses.

4993 Senior Honors Project. Prerequisites: departmental invitation, senior standing, Honors program participation. A guided reading and research program ending with an honors project under the direction of a faculty member, with a second faculty reader and an oral examination. Required for graduation with departmental honors in computing and information science.

5000* Research and Thesis. 1-6 credits. Prerequisite: consent of major professor. A student studying for a master's degree who elects a thesis or a report must enroll in this course.

5013* Linear Programming. Prerequisites: MATH 3013, 4142 or EE 4141. Linear programming algorithms to solve deterministic linear optimization models considering maximization and minimization objectives; degeneracy, alternative optimal solutions and sensitivity analysis. Special cases of linear optimization problems and underlying mathematical foundations. Large-scale models including computational considerations. Same course as INDEN 5013.

5030* Professional Practice. 1-9 credits. Prerequisite: consent of major professor. A student studying for a master's degree who elects a thesis or a report must enroll in this course.

5070* Seminar and Special Problems. 1-6 credits. Prerequisite: consent of instructor. Designed to allow students to study advanced topics not provided in existing courses.


5253* Digital Computer Design. Prerequisite: ECE 3233. Design and analysis of digital computer systems. Algorithmic techniques and the design of the instruction set and periphery. Parallelism in the design of high-speed parallel processing systems. Advanced topics in parallel data processing: control and timing systems; microprogramming; memory organization alternatives; input/output interfaces. Same course as ECEG 5553.

5273* Advanced Software Engineering. Lab 2. Prerequisite: 4273. Continuation of 4273. Advanced techniques for implementing concurrent and parallel software. Special emphasis on methodology. Large-scale design and implementation problems. Experimental design for software engineering. Same course as ECE 5273.


5323* Operating Systems II. Lab 2. Prerequisites: 4503, STAT 4013. Task systems and concurrent programming, synchronization and inter process communication. Theoretical investigations of course topics using Unix. Operating systems, memory management, strategies, and scheduling algorithms, queuing theory, distributed operating systems. System accounting, user services and utilities.


5413* Data and Storage Structures. Prerequisite: 4344. Data structures and their application in recursive and iterative algorithms. Static and dynamic data structure representations and processing algorithms. Dynamic and virtual storage management.

5423* Information Organization and Retrieval. Prerequisite: 4342, 4343. Storage, classification, and retrieval of information, data bases, errors, multi-key files, indexing; indexing of file reorganization, search strategies.


5513* Numerical Analysis I. Prerequisite: 4253 or MATH 4253. Algorithms and error analysis; solution of nonlinear equations and interpolation and approximation theory. Same course as MATH 5513.

5543* Numerical Analysis II. Prerequisites: 4253 or MATH 4253 and MATH 4853. Convergent methods in ordinary differential equations including single-step and multistep methods. Iterative techniques for numerical solution of partial differential equations. Same course as MATH 5543.

5553* Numerical Analysis III. Prerequisites: MATH 3013, 4253. Advanced concepts and theoretical and computational methods associated
with matrix algebra, linear algebraic equations and algebraic eigenvalue problems. Same course as MATH 5553.

5653* Automata and Finite State Machines. Prerequisites: 5313 or 5113 and 5213 or MATH 3113. Finite state machines, state diagrams and flow tables, equivalent states and equivalent machines. Formal grammars, context-free languages and their relation to automata. Turing machines, computability and recursive functions. Same course as MATH 5653.

5663* Computability and Decidability. Effectiveness, primitive recursion, general recursivity, equivalence of computability, definitions, decidability, and recursive algorithms. Same course as MATH 5663.

5793* Artificial Intelligence and Expert Systems. Lab 2. Prerequisite: graduate standing in computer science. Fundamental concepts: search-oriented problem solving, knowledge representation, logic inference, building, expert system, artificial intelligence languages, specialized machine architectures. Applications to planning, natural language processing and robotics. Development of an expert system or research report required. Common lectures with CS 3386, INDEN 5933, and MAE 5793.

6000* Research and Thesis. 2-15 credits, maximum 30. Prerequisites: graduate standing and approval of advisory committee. Independent research under the direction of a member of the graduate faculty. For students working toward a Ph.D. degree.

6023* Nonlinear and Integer Optimization. Prerequisites: 4014 or 5015; FORTRAN or PASCAL. Theoretical and practical aspects of nonlinear and integer optimization: Development and application of nonlinear optimization techniques for unconstrained and constrained problems; sequential search, gradient, penalty and barrier, and projection methods. Development and application of integer and mixed integer techniques for unconstrained and constrained problems; implicit enumeration, branch and bound, and cutting methods. Same course as INDEN 6023.

6240* Advanced Topics in Computer Organization. 2-6 credits, maximum 12. Prerequisite: 5113 and 5253. Structure and organization of advanced computer systems, parallel and pipeline computers, methods of computation, alignment networks, conflict-free memories, bounds on computation time. Same course as ECEN 6253.

6253* Advanced Topics in Computer Architecture. Prerequisites: 5253 or ECEN 5253. Innovations in the architecture and organization of computers, with an emphasis on parallelism. Topics may include pipelining, multiprocessors, performance measurement and machine simulation. Same course as ECEN 6253.

6300* Advanced Topics in Programming Languages. 2-6 credits, maximum 12. Prerequisite: 5313. Interpreter models of programming languages, semantic theories, abstract syntax and type checking, data abstraction, and related topics. May be repeated with change of topics.

6350* Advanced Topics in Operating Systems. 2-6 credits, maximum 12. Prerequisite: 5323. Design and analysis of operating systems. Concurrent processes, server scheduling, models of auxiliary storage, memory management, virtual systems, performance algorithms. May be repeated with change in topics.

6400* Advanced Topics in Information Systems. 2-6 credits, maximum 12. Prerequisites: 5413, 5420. Design and analysis of computer and other information systems. Hierarchical, network, and relational systems; implementation of database systems; update and retrieval algorithms; distributed security access mechanisms; distributed data base systems. May be repeated with change of topics.


6600* Advanced Topics in Analysis of Algorithms. 2-6 credits, maximum 12. Prerequisite: 5413. Analysis of various algorithms. Sorting, searching, computational complexity, lower bounds for algorithms; NP-hard and NP-complete problems; parallel algorithms; proof of correctness of algorithms. May be repeated with change of topics.

6623* Algebraic Structures of Formal Grammars. Prerequisites: 5313, 5653. Context-free languages, Kleene languages, Dyck languages, context-sensitive languages, use of algebraic systems to define languages; linear bounded automata.

Construction Management Technology (CONST)

1213 Introduction to Building Construction. Lab 3. Fundamentals of light building construction; techniques of architectural drawings; methods of using the developed plan, elevations, sections, details and construction drawings interpretation.

1333 Construction Practice. Prerequisite: departmental approval. Supervised field experiences in construction between the freshman and senior years, emphasizing the wide variety of layout, concrete placement framing and finish techniques employed.

2253 Drawing Interpretation. Lab 4. Prerequisites: 1213, 2334. Interpretation of construction drawings for commercial and heavy construction projects together with fabrication drawing and submittal data review.

2273 Computer Application in Construction. Lab 3. Prerequisites: 1213, 2334, MATH 1513, 1613. Disk operating systems, input to programming in Basic: word processing, spreadsheets. Applications to the construction industry.

2334 Materials and Methods of Construction. Structural and finish materials used in architectural construction, their properties, manufacture and applications. Light, heavy and industrial construction. Foundation layout, framing and finish work, site investigations, excavation, precast concrete, tilt up, structural steel and metal building construction and project management.


2363 Estimating I. Prerequisites: 2252 or 2253. Quantity take-off with emphasis on excavation, formwork and concrete, masonry, rough carpentry and miscellaneous specialty items.

3363 Timber and Form Design. Lab 3. Prerequisite: MECTD 3323. Basic timber structures with emphasis on concrete form construction applications.

3452 Mechanical Equipment of Buildings. Prerequisite: PHYS 1114. Plumbing, heating and air conditioning systems as applied to residences and commercial buildings.

3642 Electrical Equipment of Buildings. Prerequisite: 1-6 credits, maximum 6. Principles and methods appropriate to electrical systems as applied to residences and commercial buildings.


3563 Construction Law and Insurance. Legal and insurance problems as they pertain to the construction industry.

3663 Concrete Design. Lab 3. Prerequisite: MECTD 3323. Analysis and design of reinforced and pre-stressed concrete in accordance with the ACI building code.

3714 Soil Mechanics Technology. Lab 3. Prerequisites: GENT 2323 and MECTD 3323. Physical and mechanical properties of soils and tests appropriate for construction management students.

4050 Advanced Construction Management Problems. I. Prerequisites: junior standing and consent of instructor. Special problems in construction management.

4263 Estimating II. Lab 3. Prerequisite: 3263. Examination for actual contract documents for quality take-off, pricing and assembling the bid for several projects. Use of computers in estimating.


4293 Construction Manager Concepts. Prerequisite: 2463. Principles and applications to management the construction process. The expanding role of the construction manager in the construction industry.

4781 Seminar. Prerequisite: senior standing and consent of instructor. Career placement and promotion within the construction industry. Functions of committees as service to the industry.

Curriculum and Instruction Education (CIED)

1220 Reading and Study Skills for College Students. 1-4 credits, maximum 4. Lab 1-4. Instruc- tion and laboratory experience for the improvement of reading rate, vocabulary, comprehension and study skills. Graded on pass-fail basis.

2113 The School in American Society. Prerequisite: sophomore standing. The school as a major institution in its political, economic and social setting. The nature and extent of quality of educational opportunity in the U.S. Socialization of students, social class and education, the poor and the schools, ethnic groups and their school experiences, the nature of multicultural education, mainstreaming (PL 94-142), the education of women, financing and governing the schools, and the nature of teaching.

2450 Early Lab and Clinical Experience in Elementary Education I. 1-2 credits, maximum 2. Lab 3-6. Prerequisite: declaration of intention to pursue a program in Teacher Education. The initial preprofessional clinical experience in schools, kindergarten through grade eight. Recommended for full admission to Teacher Education. Graded on a pass-fail basis.

3122* Utilization of Instructional Media. Familiarizes students with a broad range of instructional media and with principles and techniques related to their selection, utilization and evaluation.

3132* Microcomputer Technologies for Education. Lab. 2. Literacy level interaction with microcomputer principles and techniques related to selection, evaluation and classroom integration of instructional and tool application software.

3153 Teaching Mathematics at the Primary Level. Lab 2. Prerequisite: MATH 1314,1513 or 1715. Developmental levels in selection and organization of content and procedures for primary mathematics education.

3283 Foundations of Reading Instruction. Prerequisite: full admission to Teacher Education. Current theories of developmental reading instruction in primary and intermediate grades, including appropriate methods and materials.

3430 Early Lab and Clinical Experience in Elementary Education II. 1-2 credits, maximum 3. Lab 3-6. Prerequisite: 2450. Directed observation and teaching in schools, kindergarten through grade eight. Concurrent seminar explores multicultural education and mainstreaming programs. Graded on a pass-fail basis.

3450 Early Lab and Clinical Experience in Elementary Education III. 1-2 credits, maximum 3. Lab 3-6. Prerequisite: 3430. Advanced clinical experiences in schools, kindergarten through grade eight. Concurrent seminar includes a major study of instructional planning. Graded on a pass-fail basis.

3620 Field Experiences in the Middle School. 1-4 credits, maximum 4. Lab 2-8. Prerequisites: 2450 and consent of instructor. Seminars directed observation, and participation in a
particular subject area of the middle school (grades 5-9). Experience in meeting the mental, social, physical and cultural differences among middle school children. Graded on a pass-fail basis.

3710 Field Experiences in the Secondary School. 1-3 credits, maximum 3. Lab 2. Prerequisites: consent of instructor and completion of speech proficiency examination. Same enrollment directed and observation and participation in a particular subject area of the secondary school. Develops experience in meeting the mental, social, physical and cultural differences among children. Graded on a pass-fail basis.

3713* Structure and Utilization of a Mathematics Laboratory. Preparation for full admission to Teacher Education. Historical background, future trends, theoretical and practical considerations, construction of laboratory and evaluation and practical experiences. For experienced and in-experienced classroom teachers, supervisors, and mathematics supervisors.

3813 Topics of Middle School Mathematics. Prerequisite: consent of instructor. Strategies for teaching the topics of the middle grades and the mathematics basic skill areas of the middle grades (grades 5-9).

4000 Field Studies in Education. 1-4 credits, maximum 4. For students who want independent study and/or field experiences, such as spending a semester in an experiential work program working with handicapped children in schools, in-depth studies in research projects, internships with school personnel.

4003* Teaching Fundamental Concepts of Mathematics. Preparation for full admission to Teacher Education. Teaching of the basic skill areas. Study and comparison of contemporary basic mathematics textbooks. Recommended to be taken concurrently in a mathematics laboratory. For experienced and in-experienced classroom teachers, supervisors, and mathematics supervisors.

4013* Humanizing the Educational Process. Provides the student with a greater personal awareness and understanding of the dynamics of human relatedness within the classroom-learning process.

4023* Children’s Literature. Survey, evaluation, selection and utilization of materials for children; extensive reading with emphasis on books which meet the needs and interests of children through grade six.

4033* Alcohol and Drug Education. Use and misuse of alcohol and drugs. Physiological and psychosocial effects of drugs and the attendant problems of abuse. Guest speakers from several disciplines lend an interdisciplinary approach. Current education materials and re habilitation programs.

4043* Classroom Applications of Microcomputers. Lab 2. Prerequisite: 3132 or equivalent. Instructional computing course for educators; principles involved in programming a microcomputer; extended applications of tool software and telecommunications; issues and strategies for planning and implementing computer technologies in the schools.

4053* Teaching Geometry in the Secondary School. Prerequisite: full admission to Teacher Educa tion. Overview of the present secondary geometry curricula and future trends. Axiomatic development of Euclidean geometry, proofs and transformational geometry from the perspective of the secondary mathematics teachers. Study and comparison of contemporary basic mathematics textbooks. Recommended to be taken concurrently with 3710 and MATH 4043.

4063* Teaching Mathematical Modeling. Prerequisites: concurrent enrollment in MATH, full admission to Teacher Education. Strategies for teaching mathematical modeling. Problem classroom topics.

4113* Multi-media Program Production. Prerequisite: 3122. Design and production of synchronized audio and sound mixing programs coordinated with subject matter content. Includes photographic techniques, audio recording and sound-mixing methods, graphics, and synchronizing techniques. Individual projects required.

4123 (S) History of Education. The development of major educational ideas and programs with emphasis on the growth of public education in the United States from the Colonial period to the present.

4142 Teaching Mathematics at the Intermediate Level. Lab 0-2. Prerequisite: 3153. Selection and organization of content, procedures for instruction, and evaluation of outcomes in teaching the mathematics of the intermediate grades. Some attention to instruction in upper grades of the elementary school.

4143 Teaching LOGO in the Schools. Lab 0-2; Prerequisite: 3132 or equivalent. Instructional computing course for educators using LOGO language. Includes methods and integration techniques for teaching LOGO in grades K-12.

4213* Introduction to the Visual Arts in the Curriculum. Lab 4. Provides an understanding of the theoretical basis for the use of art activities in developing sensory perception and aesthetic sensitivity as an integral part of the curriculum. Includes a wide range of opportunities for student involvement in experimentation and exploration with a variety of two- and three-dimensional art media. Emphasis on both creative expression and appreciation of the visual arts in the home, school and community as a vital aspect of instruction in the school, preschool level through grade eight.

4221 Application of Advanced Technologies in Instruction. Prerequisite: 3122 or 3152 or consent of instructor. Production, utilization, application of media available through advanced technologies. Systematic instructional technology approach to teaching-learning process.

4233* Introduction to Reading Problems. Lab 1. Prerequisite: 3283. Identification and treatment of reading problems in the elementary school, including group and individual diagnostic procedures. Laboratory experiences are required.

4250* Language Arts in the Elementary School Curriculum. 1-4 credits, maximum 4. Lab 0-6. Prerequisite: full admission to Teacher Education. The purposes, selection and organization of content, teaching and learning procedures, and evaluation of outcomes in elementary school language arts.

4222 Application of Advanced Technologies in Instruction. Prerequisite: 3122 or 3152 or consent of instructor. Production, utilization, application of media available through advanced technologies. Systematic instructional technology approach to teaching-learning process.

4233* Introduction to Reading Problems. Lab 1. Prerequisite: 3283. Identification and treatment of reading problems in the elementary school, including group and individual diagnostic procedures. Laboratory experiences are required.

4250* Language Arts in the Elementary School Curriculum. 1-4 credits, maximum 4. Lab 0-6. Prerequisite: full admission to Teacher Education. The purposes, selection and organization of content, teaching and learning procedures, and evaluation of outcomes in elementary school language arts.

4270* Reading in Content Areas in the Elementary School. 1-3 credits, maximum 3. Lab 0-4. Prerequisite: 3283. Integration of reading instruction in the elementary school curriculum with emphasis upon application of reading to various content areas.


4290 Reading in the Elementary School. 1-4 credits, maximum 4. Lab 0-8. Prerequisite: 4222 and 4233. Theory, methods and diagnostic procedures of reading in the elementary classroom. Taken concurrently with student teaching.

4320* Field Studies in the Elementary School Curriculum. 1-4 credits, maximum 4. Lab 0-6. Prerequisite: full admission to Teacher Education. Purposes, selection and organization of content, teaching and learning procedures and evaluation of outcomes in elementary school studies.

4343* Science in the Middle School Curriculum. Prerequisites: concurrent enrollment in 3620 and CHEM 3604 and full admission to Teacher Education. Objectives, organization, and selection of content, teaching and learning and evaluation procedures for middle school science.

4350* Science in the Elementary School Curriculum. 1-4 credits, maximum 4. Lab 0-6. Prerequisite: full admission to Teacher Education. The purposes, selection and organization of content, teaching and learning procedures and evaluation of outcomes in elementary school science.

4363* Design and Management of the Elementary School Classroom. Prerequisites: ABSED 3113, FRCD 3253, or consent of instructor, and full admission to Teacher Education. Design and management of the physical, social, instructional, cultural, special needs, and learning materials aspects of the school classroom, kindergarten through grade eight. Purposes, selection, and organization of classroom management systems and teaching approaches.

4450 Internship in Elementary Education. 1-12 credits, maximum 12. Lab 3-36. Prerequisite: 4500 and full admission to Teacher Education. Internship advanced clinical experience as associate (student) teacher in schools, kindergarten through grade eight.

4460* Kindergarten-Primary Education: Methods. 2-3 credits, maximum 3. Prerequisite: full admission to Teacher Education. Purposes, selection and organization of content, classroom management, classroom routine, and selection and organization of content in kindergarten-primary education.

4473* Reading for the Secondary Teacher. Prerequisite: concurrent enrollment in 3710. Materials and procedures in the teaching of reading in secondary schools for content area teaching.

4560* Outdoor Education Competencies. 1-4 credits, maximum 4. Lab 0-4. Prerequisite: 2113 or 2413. Development of (teacher’s) leader competencies in the content, methods, philosophy, and historical perspective of contemporary curricula using the out-of-doors as a multidisciplinary learning laboratory.

4703* Computer Applications in the Middle School Science Curriculum. Prerequisite: 3132 or consent of instructor. Principles and techniques related to teaching computers with emphasis in teaching middle school science; microcomputer interfacing, simulation, and interactive videodisc.

4704* Methods and Materials in the Secondary School I. Prerequisite: full admission to Teacher Education. Purposes, selection and organization of content, teaching and learning procedures, and evaluation of outcomes in grades 7-12 appropriate for the discipline in which the student intends to qualify for teaching certification. Recommended to be taken concurrently with 3710. Available to students in discipline-specialized sections; art, foreign languages, health and physical education, journalism, language arts, mathematics, science, social studies, speech/drama.

4720 Internship in the Secondary Schools. 1-12 credits, maximum 12. Lab 3-36. Prerequisites: 4003, 4013, 3710, ABSED 3113 or 3215, 4723 and full admission to Teacher Education. Supervised observation and student teaching in fields in which the student intends to qualify for teaching certification. Develops awareness of and provides experience with mental, social, physical and cultural differences among adolescents.

4723 Methods and Materials in the Secondary Schools II. Prerequisites: 4723 or equivalent, verification of student teaching internship placement, and full admission to Teacher Education. Continuation of 4723 or equivalent specialized methods course. Taken concurrently with the student students in discipline-specialized sections; journalism, language arts, mathematics, science, social studies, speech/drama.

4730 Methods and Materials in the Schools, K-12 1-3 credits, maximum 3. Prerequisites: 4713 or equivalent, verification of student teaching internship placement, and full admission to Teacher Education. Continuation of 4713 or equivalent specialized methods course. Taken concurrently with the student students in discipline-specialized sections; art, foreign languages, health and physical education.

4913 (I) International Problems and the Role of the School. Prerequisite: junior or senior standing. Extends the student’s intercultural awareness to the focus on foreign languages and expanding their meaning to include the school and its relationship to existing international concerns in other types of societies. Consideration of such international problems as natural resources, environment, food supply,urbanization and conflict resolution.

5000* Master's Report or Thesis. 1-6 credits, maximum 6. Prerequisite: consent of adviser. Summer for a master's degree enroll in this course for a total of 2 credit hours if they write a report or 6 hours if they write a thesis.

5023 Comparative Education. A systematic investigation of educational institutions in various nations for the purpose of an enlarged, critical view of American education.

5033* Teaching Foreign Languages in the Schools. Prerequisite: full admission to Teacher Education. Curricular materials and development of materials related to foreign languages (grades K-12).

5043* Fundamentals of Teaching. Prerequisite:
5103* Advanced Computer Applications in Education. Lab 0-2. Prerequisite: 4043 or equivalent. Includes educational applications involving authoring systems, data-base management, hardware and software, and non-instructional uses within the school environment. Impact of current issues on instructional computing.

5113* Videotape Television for Instruction. Prerequisite: 12 credit hours of general education or completion of videotape using single camera, small studio production and other technology. Individual and team projects.


5230* Advanced Studies in Children’s Literature. 1-3 credits. Lab 0-6. Prerequisite: 4063. The history of children's books against a world background of prevailing political, economic and social factors influencing cultural patterns and values. The tools of research in children's literature and the nature and direction of contemporary children's book publishing in the United States and abroad.

5313* Photography for Instruction. Prerequisite: 3122. Photography skills emphasizing 35mm and instant film and thematic type cameras with application to instruction and other communication situations such as photo-copying, use of high contrast film for graphics, and simple photography projects for school-age students.

5413* Language Arts in the Curriculum. Content and current issues in the language arts. Materials and methods for teaching the communication skills.

5513* Computer-Based Instructional Development. Lab 0-2. Prerequisite: 4043 or equivalent. Examination of curricular strategies, related research issues, and techniques for developing computer-based instruction. Students will develop and evaluate computer-based instruction with case studies.

5573* Kindergarten-Primary Curriculum (K-2). Current kindergarten-primary (K-2) curriculum models and programs including aims, content, methodology and evaluation. Current trends and issues in early childhood education; curriculum design and implementation. Primarily for administrators, supervisors and teachers.


5623* Remediation in School Mathematics. Lab 2. Prerequisite: 4103 or equivalent. Identification of specific learning disabilities in school mathematics. Selection of appropriate remedial measures. Completion of a case report.

5720* Practicum in School Mathematics. 1-3 credits. maximum 6. Lab 2-6. Prerequisite: 5263. Diagnostic and therapeutic procedures in mathematics with students of all ages. Laboratory classes provide for clinical experiences in evaluation and instruction with children experiencing difficulty in mathematics.

5820* Workshop in Science Education. 1-4 credits. maximum 4. Develops and/or implements elementary and secondary science programs.

5923* Teaching Social Studies in the Schools. Curriculum, materials and methods and procedures related to social studies.

5950* The Visual Arts in the Curriculum. 1-3 credits. maximum 6. Lab 2. Prerequisite: 4513. Creative approaches to the use of two- and three-dimensional media as they relate to various aspects of education. Opportunities available for project group and individual evaluation in order to give direction and significance to future growth.

5923* Developmental Reading at the Primary Level. Prerequisites: 3232, 4232 and 4290 or 4473. Analysis of sequential growth in reading from the preschool level through the early elementary years. Examination of the reading process and instructional procedures.

5923* Developmental Reading at Intermediate and Secondary Levels. Prerequisites: 3232, 4232 and 4290 or 4473. Examination of the developmental reading curriculum at intermediate, middle school and secondary levels including evaluation of teaching methods and materials.

5943* Diagnosis and Treatment of Reading Problems. Prerequisite: 5423. Diagnosis of reading disabilities, remedial measures and work with clinical cases.

5943* Clinical Aspects of Reading Disability. Prerequisite: 5463. Refines the diagnostic and remedial skills of the student through study of clinical instruments, research, informal measurements and remedial approaches used in reading clinics.

5943* In-Service in Reading, 1-6 credits. maximum 6. Guidance in the development of reading curriculum, programs, methodology and materials for in-service teacher education groups. Content developed around needs of specific groups.

5970* Practicum in Reading. 1-6 credits. maximum 6. Lab 2-4. Prerequisite: 5463. Application of diagnostic and therapeutic procedures with readers of all ages. Laboratory classes provide for clinical experience in evaluation and instruction in developmental and remedial programs in reading for children.


5973* Curriculum for the Culturally Different Elementary School-Age Child. Procedures, methods, curriculum, techniques, instructional strategies, etc. to aid the teacher in developing an educational program for the culturally different child.

5973* Developmental Reading for College and Adult Learners. Identification of the needs, materials, curricula, and instructional strategies for college and adult readers. The study of literacy. Consideration of the development, organization and supervision of programs for such learners.

5970* Education Workshop. 1-8 credits, maximum 8. For teachers, principals, superintendents and supervisors who have definite problems in instruction or administration. Students must register for a full number of credit hours for which the workshop is scheduled for a particular term.

5972* Seminar in Education. Prerequisite: consent of instructor. Seminar topics may differ depending upon the nature of current interests and topics in American education.

5974* Seminar in Teacher Education. 3-9 credits. maximum 9. For cooperating teachers and university supervisors. Problems and issues in pre-service teacher education. Simulation and laboratory experiences in supervision of student teachers.

5975* Seminar in Mathematics Education. 1-3 credits. maximum 3. Lab 0-2. Prerequisite: consent of instructor. Problems, issues, and trends in mathematics education.

5975* Audiovisual Communication Strategies. Lab 2. Prerequisites: 3122 or 4113 and ABSED 5613. For students majoring in audiovisual education, curriculum development, supervision and administration. Gives students skills in the organization and curriculum integration of audiovisual systems. Some of these systems are electronic student instruction systems, mediated individual learning tasks, multimedia presentation and large class instruction, visual literacy’s role in learning, instructional communications models, microteaching and utilization of instructional television.

5975* Administration and Supervision of Audiovisual Materials. Prerequisite: 3122. Building, planning, selecting and purchasing equipment, maintaining and materials, surveying existing materials, and planning and financing adequate programs. For administrators and teachers who are responsible for audiovisual programs.

5973* Institutional History of Education. History of elementary, secondary, and higher education in Western Civilization with emphasis upon the development of the American educational institution.

5973* Methods in Physical Education. Prerequisite: PE 4712 and 3773. Prior completion of CIED 2001 recommended. Differentiation between teaching methods in physical education; advantages of the electronic student equipment, methods to particular situations in teaching physical education. Same course as HPEELS 5893.

5975* Directed Study. 1-3 credits, maximum 3. Lab 1-3. Prerequisite: consent of instructor. Directed study for master’s level students.

5975* Educational Sociology. The manner in which social forces and institutions influence education and the educational system in the United States.

6000* Principal Thesis. 1-15 credits, maximum 15. Required of all candidates for the Doctor of Education degree. Credit is given upon completion of the thesis.

6033* Analysis of Teaching. Students examine research related to teacher-classroom behavior, classroom climate and student behavior and develop competencies in several observational systems.

6080* Seminar in Science Education. 1-6 credits, maximum 6. Problems and issues in teaching careers in science education. The focus at the pre-service or in-service level.

6113* Curriculum of the Elementary School. Contemporary trends, philosophies and points of view in elementary school education.

6133* Theory to Practice in Education. Prerequisite: consent of instructor. A culminating seminar integrating the theory from several disciplines to the practical problems of education: curriculum development, organization, teaching strategies and evaluations.

6152* Current Issues in Art in the School Curriculum. Problems, issues and trends in art education in the elementary and secondary schools and their relationship to the total curriculum. For teachers, supervisors and administrators.

6433* Seminar in Reading. Prerequisite: 12 credit hours in teaching of reading. Research in reading including evaluation of research proposals. Problems and issues in reading instruction are discussed using knowledge gained through both research and classroom practice.

6663* Developmental Reading and Exceptionality. Prerequisite: 5423 or 5433. Developmental reading needs of various groups of exceptional individuals. Methods and materials of instruction.

6680* Directed Reading. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Directed reading for students with advanced graduate standing to enhance students’ understanding in areas where they wish additional knowledge.

6680* Improvement of Instruction in Reading. Problems and issues related to reading instruction. The roles of various school personnel in effecting change in curriculum and methods.

6680* Internship in Education. 1-8 credits, maximum 8. Lab 3-24. Prerequisite: consent of instructor. Directed off-campus experiences designed to relate ideas and concepts to problems encountered in the management of the school program.

6910* Practicum. 1-6 credits, maximum 6. Prerequisite: consent of adviser. Helps the student carry out an acceptable research problem (practicum) in his/her local school situation. Credit given upon completion of the written report.
Family Clothing. 3153

Needs, individualized clothing decisions. 3113

Credit hours. Principles and techniques of design developed through the medium of flat pattern design. 3013

Wardrobe analysis, professional clothing and dress in creating a professional image for men and women. Figure and form, attitudes, family patterns and environmental factors. 3263

Achieving efficiency in planning and work simplification in planning work areas. 3013

Interactive, civic, and economic aspects of the housing environment in relation to needs, values and goals of individuals and families. 2573

Textiles for Consumers. Lab 2. Consumer-oriented study of textiles emphasizing fibers, care and serviceability of apparel and household fabrics. 3002

Professional Image and Dress. Role of appearance and dress in creating a professional image for men and women. Figure and wardrobe analysis, professional clothing needs, individualized clothing decisions. 3013

Flat Pattern Design. Lab 4. Prerequisites: 2203 and MATH 1513. Interpretation of design within various segments of the clothing industry. 2203

Intermediate Apparel Construction. Lab 4. Prerequisite: "1103. Development of skill in construction of apparel. Problems involving development of a fitting shell, inserting a lining, and couture techniques on special fabrics. 2213

Contemporary Issues in Housing and Interior Design. Contemporary issues affecting the near environment of the family ecosystem and its relation to quality of life, consumer rights and responsibilities, government policies, housing and design decisions and satisfactions. 2223

Presentation Techniques for Interior Design. Lab 6. Interior design majors only. Two- and three-dimensional presentation techniques using various media and formats. 2313

Introduction to Interior Design. Lab 2. Basic interior design theory including aesthetic, social and economic aspects of the housing environment in relation to needs, values and goals of individuals and families. 2343

Design and Space. Lab 6. Prerequisites: 1123, 2223 and 2313. Creative exploration of three dimensional spaces in interior design. 2432

Fashion Innovation and Marketing Processes. The process of fashion innovation; variables of fashion affecting production and distribution of consumer goods; development of present structure in the fashion industry. 2573

Textiles for Consumers. Lab 2. Consumer-oriented study of textiles emphasizing fibers, care and serviceability of apparel and household fabrics. 3002

(S)Professional Image and Dress. Role of appearance and dress in creating a professional image for men and women. Figure and wardrobe analysis, professional clothing needs, individualized clothing decisions. 3013

Flat Pattern Design. Lab 4. Prerequisites: 2203 and MATH 1513. Interpretation of design developed through the medium of flat pattern; introduction to pattern drafting. 3102

Fashion Sketching. Lab 4. Prerequisites: 2113 or 3 credit hours of art and completion of 60 credit hours. Principles and techniques of sketching in the fashion field. 3113

(S)Clothing in an Ecological Framework. Relationship between human beings and their dress within the environment. Relative effects of custom, technology and economic factors in determination of dress in different societies. 3153

Family Clothing. Use of family resources and knowledge of child development needs at various stages of the family life cycle. 3203

Functional Clothing Design. Lab 4. Prerequisites: 2573, 3103 and 4 credit hours of chemistry. Problem-solving approach to functional clothing design for specialized market segments (athletic sportswear, clothing for the handicapped), including performance evaluation of selected materials using standard methods of textile testing. 3233

(H)Heritage of Dress. Prerequisite: 3 credit hours of history. Survey of historic modes of dress as they reflect the social, economic and cultural life of a people. Application of design principles to modern dress. 3233

Design of Interior Components. Lab 4. Prerequisites: 1123 and 2313. Design, materials, construction and production of interior design components including wall coverings, carpets and furniture, lighting, which simulate the responsibilities and duties of a professional interior designer. 3253

Environmental Design for Interior Spaces. Prerequisite: 3243. Design factors and human performance criteria for lighting, acoustics and thermal/ atmospheric comfort as they relate to the practice of interior design. 3263

Interior Design Studio I: Residential. Lab 4. Prerequisites: 1123 and 2223. Studio course utilizing the design process in the analysis, space planning and construction techniques involved in the design of residential spaces to achieve efficient use of energy and space. 3300

Supervised Field Experience. 1-3 credits, maximum 6. Prerequisites: 1123, 2223, 2313. Field experience in specialized residential, commercial and institutional design with both historic and contemporary elements. 3303

Materials and Finishes for Interiors. Prerequisite: 2313. Materials and procedures used in the production and marketing of interior spaces. 3353

(S)(S)Socio-Economic Aspects of Housing. Familiarization with housing needs, present social and economic conditions affecting housing and building processes and the roles of business and government in housing. 3363

Interior Design Studio II: Contract. Lab 4. Prerequisites: 3243, 3263, 3303, 3333 and 3343. Studio course utilizing the design process in the analysis of office planning including systems and specifications. 3373

Computer-aided Design for Interiors. Lab 4. Prerequisites: 3213, 3243, 3263, 3303 and 3343. Studio course utilizing the design process in the analysis of office planning including systems and specifications. 3373

Fashion Retailing. Prerequisites: 2433, 2313 and CENG 2103. Focus on retail apparel merchandising and other retail environments. Discussion of retail operations and management, and advertising and promotions. 3423

Draping. Lab 4. Prerequisite: 2203. Interpretation of garment design developed through the medium of draping on dress forms. 3423

Interior Design Studio III: Commercial and Residential. Lab 4. Prerequisites: 3253, 3263 and 3303. Studio course utilizing the design process in the analysis and planning of commercial, institutional and retail environments with emphasis on materials, codes and accessibility. 3423

Interior Design Studio IV. Lab 6. Prerequisite: 3263. Studio course developing comprehensive interior design concepts in the areas of historical restoration/preservation/adaptive reuse and custom residential planning. 3433

Apparel and Accessories for Special Markets. Prerequisites: 2433, PSYCH 1113, SOC 1113, and completion of 60 credit hours. An analysis of the apparel and accessory needs of specialized market segments and the products designed to meet those needs, with consideration given to both product design and merchandising. 3643

Functional Clothing Design. Lab 4. Prerequisites: 2573, 3103 and 4 credit hours of chemistry. Problem-solving approach to functional clothing design for specialized market segments (athletic sportswear, clothing for the handicapped) including performance evaluation of selected materials using standard methods of textile testing. 3233

(H)Heritage of Interiors I. Religious, civic, commercial, and domestic architecture and furnishings prior to and including the 18th Century with emphasis on the periods which have greatly influenced housing and interior design. 3253

Design of Interior Components. Lab 4. Prerequisites: 1123 and 2313. Design, materials, construction and production of interior design components including wall coverings, carpets and furniture, lighting, which simulate the responsibilities and duties of a professional interior designer. 3263
500* Master's. Thesis. 1-6 credits, maximum 6. Prerequisites: graduate standing and consent of instructor. Research related directly to design, housing and merchandising for the master's thesis.

505* History of Costume. Prerequisite: 3213. The development and preservation of historic costumes including dating criteria, storage and display.

5110* Research Developments in Design, Housing and Merchandising. 1-3 credits, maximum 3. Current development and needs in research in design, housing and merchandising including application of research methods to design, housing and merchandising and research planning.

5232* Experimental Clothing. Lab 4. Prerequisite: 8 credit hours in clothing and textiles. Independent and creative study of current problems in clothing construction.

5233* Contemporary Interior Design Philosophies. Prerequisite: consent of instructor. Interior design philosophies of contemporary designers and trends in interiors.

5240* Studio Design Practicum. 1-3 credits, maximum 6. Prerequisite: consent of instructor. An in-depth application of theoretical design models and philosophies to professional practice.

5250* Theoretical Foundations of the Housing Industry. 1-4 credits, maximum 4. Prerequisite: consent of instructor. An experiential learning environment.

5263* Professional Practices and Evaluation. Prerequisite: consent of instructor. Analysis and evaluation of design business practices and procedures, including client relations, marketing, and legal framework, capitalization and other business functions.

5273* Social and Cultural Aspects of Clothing. Prerequisite: 3113. An exploration of the sociological, economic, psychological and cultural aspects of dress.

5323* Textile Analysis. Lab 4. Prerequisites: 4572 and CHEM 2463. Testing equipment and methods applicable in the determination of certain physical and chemical characteristics of textile materials.

5343* Housing Environment in Relation to Human Behavior. Prerequisite: consent of instructor. Critical evaluation of selected research dealing with the effects of the housing environment on social, psychological and economic aspects of human behavior.

5360* Advanced Studies in Design, Housing and Merchandising. 1-6 credits, maximum 6. Investigation into special areas in the fields of design, housing and merchandising. A minimum of 6 hours must be used by graduate students following Plan III for the master's degree.

5363* Housing and Energy. Prerequisite: consent of instructor. The impact of changing energy supplies and cost on housing. Energy and housing policies, alternative energy sources and future implications.

5383* Design, Housing and Merchandising in Higher Education. Prerequisite: 9 credit hours in design, housing and merchandising. Development and organization of curricula and teaching methods for design, housing and merchandising.

5440* Apparel Merchandising and Design Career Internship. 1-6 credits, maximum 6. Prerequisite: consent of instructor and department head. An individualized career-oriented internship. Selected learning experiences in approved work situations in the fashion industry relevant to the current activities related to apparel merchandising and design.

5453* Total Economics. Prerequisite: 9 credit hours of design, housing and merchandising. Basic economic background of the textiles and apparel industry with emphasis on production and distribution and current national and international problems.

5533* Functional Apparel: Theory and Design. Lab 4. Prerequisites: 2573, 4013, 5110. A holistic approach to the study of apparel design with an emphasis on integrating knowledge of the needs and functions of the individual, the structural properties of textiles and apparel design.

5563* Current Merchandising Trends and Practices. Prerequisite: 9 credit hours in fashion merchandising. Current trends in merchandising policies and procedures. Management level problems approached through in-store observations, activities and interaction with retail executives.

5610* Problems in Design, Housing and Merchandising. 1-3 credits, maximum 6. Prerequisite: consent of instructor and department head. Individual and group investigations and discussions of special problems in the various phases of design, housing and merchandising.

5630* Design, Housing and Merchandising Seminar. 1-6 credits, maximum 6. Prerequisite: consent of instructor. A selected group of current issues in design, housing and merchandising.


6000* Doctoral Thesis. 1-12 credits, maximum 30. Prerequisite: consent of major professor. Research and development in design, housing and merchandising for the Ph.D. degree.


6123* Research Methods in Design, Housing and Merchandising. Prerequisite: consent of instructor. Survey and discussion of research methods, experiences in research design and analysis of data.

6203* Theories of Dress and Communication. Appearance as a type of nonverbal communication related to appearance. Theoretical structures depicting the use of dress in communication.

6303* Consumer Behavior: Apparel and Textile Consumption. Prerequisites: 3113, MKTG 3323. Consumer behavior theories, models and empirical research findings. Construction and testing of consumer behavior models as applied to apparel and textile consumption.

6353* Housing Market Analysis. Prerequisite: 3353. Mechanisms for allocating resources to the construction of housing: supply and demand functions in the housing market, characteristics of the housing industry, the role and responsibilities of the consumer along with influences among the many participants in the operation of the housing market.

6410* Independent Study in Design, Housing and Merchandising. 1-6 credits, maximum 6. Prerequisites: consent of instructor and department head. An individual or small-group study of problems in various areas of design, housing and merchandising for advanced graduate students who are working toward doctorate degrees.

6810* Advanced Problems in Design, Housing and Merchandising. 1-6 credits, maximum 6. Prerequisites: consent of instructor and department head. Intensive individual or small-group study of problems in various areas of design, housing and merchandising for advanced graduate students who are working toward doctorate degrees.

6830* Design, Housing and Merchandising Seminar. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Discussion of special problems in the various phases of design, housing and merchandising.

Economics (ECON)

1113 (S)The Economics of Social Issues. Issues-oriented approach. Basic economic principles introduced and developed through study of important social issues: for example, inflation, unemployment, poverty, discrimination, crime, population growth and environmental quality. Develops the economist’s approach to social problems, and evaluates the contribution of economics to their solution. No credit for students with prior credit in 2013 or 2023. No enrollment restriction for students also taking ECON 1113 or AGEC 1114.

2013 (S)Introduction to Macroeconomics. Prerequisite: 15 semester credit hours. The functioning and current problems of the aggregate economy: determination and analysis of national income, employment, inflation and stagnation; monetary and fiscal policy; and aspects of international interdependence. No general education credit for students also taking ECON 1113 or AGEC 1114.

2023 Introduction to Microeconomics. Prerequisite: 2023. Goals, incentives and outcomes of economic behavior with applications and illustrations from current social issues: operation of markets for goods, services and factors of production; the behavior of firms and industries in different types of competition; income distribution; and international exchange.

3010 Special Topics in Economics. 1-3 credits, maximum 9. Prerequisites: 2023, prior approval of instructor. An analysis of a contemporary topic in economics. Course content will vary to reflect changing social issues and trends in applied economics.

3023 Monetary Economics. Prerequisite: 3023. Application of economic theory and methodology to decisions of private industry, nonprofit institutions and government agencies. Economic indicators, cost analysis, forecasting, pricing and investment.


3123* Intermediate Macroeconomics. Prerequisite: 2023. An introduction to a theoretical approach to work for studying the determinants of national income, employment and general price levels. Macroeconomic theory: accounting, consumption, investment, government spending and taxation, the supply of and demand for money. Monetary, fiscal and incomes policies considered with regard to unemployment, inflation and economic growth.

3313* Money and Banking. Prerequisite: 2023. The economics of money and banking. Operations of commercial banks and structure and competition of the banking industry. Organization and operation of the Federal Reserve System and its effects on interest rates, employment and prices. An introduction to monetary economics and international banking concludes the course.

3423* (S)International Finance. Prerequisite: 3 credit hours in economics. The economics of the government sector. Scope of government activity, efficiency in government expenditures, federal budget, fiscal and debt management policy. Principles of taxation. Major tax sources, tax distribution, tax issues. Current public finance problems such as revenue sharing, negative income tax, urban transport systems and national health insurance.

3513 Labor Economics and Labor Problems. Prerequisite: 3 credit hours in economics. Economic analysis of contemporary labor market problems and survey of U.S. unionism. The labor force, education and training, discrimination, inflation and unemployment problems of the labor movement, economic impact of unions and public policy toward labor.

3523* (S)Property and Economic Insecurity. Prerequisite: 3 credit hours in economics. Problems, programs and proposals for dealing with poverty and economic insecurity.

3613* International Economic Relations. Prerequisite: 3 credit hours in economics. International trade and finance; international economic organizations; the foreign economic policy of the U.S.

3713* Government and Business. Prerequisite: 3 credit hours in economics. Methods of measuring the extent of monopoly power in American industries and ways of evaluating the effects of this power on consumer welfare. U.S. antitrust laws, their enforcement and landmark court decisions under these laws.

3813* Development of Economic Thought. Prerequisite: 3 credit hours in economics. The ideas of great economists with emphasis upon economic concepts and systems of thought in relation to social, ethical and political ideas under evolving historical conditions.

3823 (S)American Economic History. Economic developments and economic forces in American history; emphasis upon industrialization and its impact upon our economic society since the Civil War. Same course as HIST 4513.

3903* Economics of Energy and the Environment. Prerequisite: 2023. Issues related to the development and use of energy resources, and the management of the natural environment.
Copies of basic concepts, data, tools, and models that are relevant to economic problems and the methodologies used in economic analysis emphasizing teaching methods included.

4223 Required of all first-year students in the College of Education. May include field experiences involving teaching and learning, including strategies for development. The role of capital, labor, technological progress and entrepreneurship. Growth models.

4233 International Trade. International trade and commercial policy. Comparative advantage, general equilibrium and modern trade theories; welfare implications of international re-exports, allocation models, the theory of protection and international interdependence.

4523 Monetary Economic Development. Characteristics problems of less-developed countries. Criteria of growth and development with emphasis on strategies for development. The role of capital, labor, technological progress and entrepreneurship. Growth models.

4533 International Finance. Management of payments, portfolio balance and asset market approaches to the determination of exchange rates.


4923 United States Economic Development. Pre-requisite: 2023 or 2123. Changing patterns of trade and raw material utilization in the United States. Market forces and structural and institutional changes that have affected the economy’s growth.

5000 Research and Thesis. 1-6 credits, maximum 6. Workshop for the exploration and development of research topics. Research leading to the master’s thesis.

5050 Research Report. Prerequisite: consent of committee chairperson. Supervised research for M.S. report.

5120 Microeconomic Theory I. Prerequisites: 3113, MATH 2525 or MATH 2713. Contemporary price and allocation theory with emphasis on comparative statics.

5123 Managerial Economics. Economic theory applied to business decision making. Concepts of microeconomics and macroeconomics related to understanding the economic system, policy, forecasting, and international economics. No credit for M.S. and Ph.D. students in economics.

5220 Mathematical Economics I. Prerequisites: 3113, MATH 2265 or equivalent. Mathematical concepts of single variable and multivariable calculus, topological properties of Euclidean space, convergence, linear algebra, optimization theory and the Kuhn-Tucker Theorem with applications from economic theory.

5223 Mathematical Economics II. Prerequisite: 5220. A mathematical approach to general equilibrium and welfare economics.

5243 Econometrics I. Prerequisite: 4210 or STAT 4043. Theory and application of econometric problems and issues related to economic problems. Topics include OLS, GLS, distributed lags, serial correlation, heteroskedasticity, and simultaneous equations.

5253 Econometrics II. Prerequisite: 5243. Advanced econometric theory covering single and multivariate equations models, seemingly unrelated regressions, limited dependent variable models, causality, and pooled models.

5313 Monetary Economics I. Contemporary issues in monetary theory and policy. Demand for money and supply of money theory, interest rate theory and issues in monetary policy.

5323 Monetary Economics II. Intensive analysis of classical monetary theory and individual research on selected problems in monetary economics. The ideas of Patinkin, Wicksell, Fisher and Keynes.

5413 Economics of the Public Sector I. Allocation and distribution effects as well as incidence of governmental budget policies.

5423 Economics of the Public Sector II. Fiscal policy as a means of promoting economic stabilization and growth.

5523 Manpower Analysis. Introduction to the manpower field; recruitment, training, motivation and utilization of human resources both within and outside the economy. Applications of basic concepts, data, tools and techniques of analysis to selected manpower problems.

5543 Labor Market Theory and Analysis. A critical evaluation of the theoretical and empirical literature dealing with labor market processes; wage determination and the impact of factors on relative wages; estimation of aggregate labor supply; resource allocation and labor mobility; the inflation-employment tradeoff and the economics of labor market discrimination.

5613 International Finance. Open economy macroeconomics and the role of devaluation, fiscal and monetary policy in the open economy, monetary policy to the balance of payments, portfolio balance and asset market approaches to the determination of exchange rates.

5623 Economic Development I. Characteristics and problems of less-developed countries. Criteria of growth and development with emphasis on strategies for development. The role of capital, labor, technological progress and entrepreneurship. Growth models.

5633 International Trade. International trade and commercial policy. Comparative advantage, general equilibrium and modern trade theories; welfare implications of international re-exports, allocation models, the theory of protection and international interdependence.

5643 Economic Development II. Major problems of development policy. Inflation and mobilization of capital, investment criteria, agriculture, foreign trade, population and manpower, planning and programming methods.

5713 Industrial Organization I. Organization and operation of the enterprise sector of a free enterprise; interrelations of market structure, conduct and performance; public policies affecting these elements.

5723 Industrial Organization II. Alternative market structures and their relationships to market performance; the empirical evidence concerning these; Public policies toward business, including emphasis on U.S. antitrust laws and economic analysis of their enforcement; theories of public utility regulation.

5813 History of Economic Thought. Economic theories from the 16th century until the present with emphasis on the origin and improvement of analytical tools.

5903 Regional Economic Analysis and Policy. Selected topics in location theory, regional economic growth and policies toward regional development in the U.S.

5913 Urban Economics. The urban area as an economic system. Problems of economic policy in urban areas.
Educational Administration and Higher Education (EAHED)

4223* Community Education: A Synopsis. Lab 1. Prerequisite: 3 hours of one of the following: CRID 2111, EDUC 5433, 4413, 4853, LEIS 2413, or SOC 1113. Introduction to community education through classroom and field-based activities and the history, philosophy, organization, roles, and publications of community education. Perspective of how community education has evolved in relation with adult education, community colleges, public schools, and recreation.

4622* Teachers and the Law. An analysis of school-related areas out of which litigation arises, focusing especially on the legal rights and responsibilities of teachers, administrators and pupils and the generally applicable principles of law.

5000* Thesis or Report. 1-10 credits, maximum 10. Prerequisite: consent of instructor. Master’s students may earn up to two hours of credit for a report or six hours of credit for a thesis. Students working on a specialist’s report may earn a maximum of 10 hours of credit.

5633* Community Education. Purpose, organization and administration of community education and its various components.

5720* Education Workshop. 1-4 credits, maximum 8. Analysis of organizational, administrative, and instructional problems by common schools and higher education personnel.

5813* Public School Administration. The scope and function of public school administration.

5833* Public School Finance. Prerequisite: graduate standing. Development of conceptual bases in economics of education, taxation, distribution systems, policy analysis; application to Oklahoma school finance; and introduction to budget development.

5853* Educational Systems, Design and Analysis. Prerequisite: 5 credit hours of statistics. Current research literature in educational administration, both common school and post-secondary studies. Substantial application of statistical and research skills to educational administration.

5910* Educational Field Experiences. 1-6 credits, maximum 6. Prerequisites: senior or graduate standing and consent of instructor. Guided field experience appropriate to a specific program of study. Field experience preceded and followed by appropriate on-campus seminars, readings and reports.

6020* Seminars in Education. 2-6 credits, maximum 6. Prerequisite: consent of instructor. Limited to graduate students who have experience in the field and knowledge of elementary techniques in research. Students pursue individual research projects under the direct supervision of members of the staff.

6023* Doctoral Seminar. Prerequisite: approval of adviser. Open to all doctoral aspirants desiring preparation for a proposal for the doctoral study. Mechanics and techniques of proposal and dissertation preparation and design of the proposed research.

6473* Practicum in Instructional Supervision. Prerequisite: 5623 or consent of instructor. Application of modern approaches of instructional supervision through practice in recording and analyzing teacher behavior in actual classroom settings. Clinical and group methods for improving instruction are considered.

6573* School Facilities. Prerequisites: 5833 and 6453, or equivalent. Established standards and research in school housing; validity of old and new standards.

6630* Organizational Theory in Education. Prerequisite: 6243. Selected organizational typologies, conceptualizations and theoretical frameworks as they relate to organizational behavior and behavior of personnel in organizations.

6613* Organizing, Developing and Administering Community Education. Relationship between education and the community, with special emphasis on community needs/resources and the development of a total community education program. Skills and competencies for planning, implementing and evaluating community education programs are explored.

6620* The School-Community Survey. 1-3 credits, maximum 6. Basic principles and assessment techniques applied in the field through needs and resource assessment, program planning, and facility evaluation and planning.

6710* Problems in Educational Administration. 1-4 credits, maximum 8. Prerequisite: consent of instructor. Special administrative problems in common schools and higher education, e.g., school plant, school/community relations, administration and the instructional programs, attrition and finance.

6813* The Community Junior College. The American two-year college including historical and philosophical development, curricula, student training, the learning process, faculty and instructional administration, and the role of the college in education.

6823* The Academic Department. Organization and administration in higher education emphasizing an analysis of the academic department and its leader, the department head.

6850* Directed Reading. 1-4 credits, maximum 6. Prerequisite: consent of instructor. Directed reading for students with graduate standing.

6870* Seminar. 1-4 credits, maximum 10. Prerequisite: consent of instructor. Topical issues related to administration and/or higher education, including research techniques available to analyze such topics.

6880* Internship in Education. 1-4 credits, maximum 8. Prerequisite: consent of department head. Directed internship experiences designed to relate ideas and concepts to problems encountered in education by faculty and administrators.

6910* Practicum. 1-5 credits, maximum 9. Required of all candidates for the Specialist in Educational degree. Designed to help the student carry out an acceptable field study or research problem. Credit given upon completion of the written report.

6753* Historical Development of Higher Education. History and development of higher education, studies of objectives and functions of institutional types and of students and faculty.

6803* Administration in Higher Education. Prerequisite: 6753. Functions and principles of administration in higher education from historical and contemporary points of view. Both internal and external forces acting on the institution treated.

6813* Academic Programs: Development and Implementation. Development and implementation of academic programs including curriculum for colleges and universities, investigation of teaching-learning relationships, and instructional emphasis.

6823* Educational Leadership. Prerequisite: 6803. Marshaling scarce resources to achieve institutional goals and objectives congruent with the needs and abilities of persons associated with the institution. Research on leadership models and styles, with consideration given to application in higher education today. May also include value to those in business and industry, politics, and government.

6833* College and University Presidency. Prerequisite: 6803. For those who anticipate a career in college and university administration or a related management position. The role and function of the presidency.

6843* The Academic Department. Organization and administration in higher education emphasizing an analysis of the academic department and its leader, the department head.

6850* Directed Reading. 1-4 credits, maximum 6. Prerequisite: consent of instructor. Directed reading for students with graduate standing.

6870* Seminar. 1-4 credits, maximum 10. Prerequisite: consent of instructor. Topical issues related to administration and/or higher education, including research techniques available to analyze such topics.

6880* Internship in Education. 1-4 credits, maximum 8. Prerequisite: consent of department head. Directed internship experiences designed to relate ideas and concepts to problems encountered in education by faculty and administrators.

6910* Practicum. 1-5 credits, maximum 9. Required of all candidates for the Specialist in Education degree. Designed to help the student carry out an acceptable field study or research problem. Credit given upon completion of the written report.

Electrical and Computer Engineering (ECEN)

3013* Experimental Methods. Lab 4. Prerequisites: 3613 and ENGSC 2613, concurrent enrollment 3113 and in 3313. Basic electrical and electronic measurements, instrumentation techniques and devices. Operating principles and application of various instruments used in the practice of electrical engineering. Experiments in electronics and electromagnetic fields, designed to reinforce principles introduced in ECEN 3313 and ECEN 3613. Data processing and reduction techniques.
1134  Energy Conversion I. Lab 2. Prerequisite: 3612. Concurrent enrollment in 3761 or 3762. Physical principles of electromagnetic and electromechanical energy conversion devices and their application to conventional trans- formers and rotating machines, transistors, thyristors, and phasor models: steady-state performance.

1234  Microcomputer Principles and Applications. Lab 2. Prerequisite: junior standing or above. Intermediate microcomputers. Digital logic elements and number systems, memory com- ponents and organization. Microprocessor and microcomputer system architecture, assembly language programming, software develop- ment, interfacing techniques. Same course as COMSC 2312.


3134  Electronic Fundamentals and Applications. Prerequisites: 3713, ENGSC 2613, MATH 2613; concurrent enrollment in 3113. Design of semiconductor electronic components including MOSFETs, BJTs, JFETs, and OpAmps. Em- phasis on device models and use of solid state electronic devices to analyze, synthesize and design amplifiers and switching circuits. Spice simulations are extensively utilized. Review of basic mathematics and basic principles for analog and digital applications.

3413  Controls I. Prerequisites: ENGSC 2122; ENGSC 2613, MATH 2613; concurrent enrollment in 3413, 3414. Design and analysis of feedback systems, including amplifiers, feedback systems, and control system theory. Applications of control to mechanical, electrical, and process control systems. Emphasis on mathematical modeling, analysis, and design of control systems. Theoretical and practical aspects of feedback control systems. Emphasis on the use of computer software for the analysis and design of control systems. Theoretical and practical aspects of feedback control systems. Emphasis on the use of computer software for the analysis and design of control systems.


3613  Fundamentals of Electromagnetic Fields. Lab 2. Prerequisites: ENGSC 2613, MATH 2613; concurrent enrollment in 3613. Theoretical and practical aspects of electromagnetic fields and their applications to engineering problems in electrostatics, magnetostatics, wave propagation, and transmission line theory. The last three to four weeks of the semester will include two hours of labs and demonstrations per week.

3713  Introduction to Network Analysis. Prereq- uisites: 3713, ENGSC 2613, MATH 2613; concurrent enrollment in 3713. Introduction to network analysis. Laplace and z-transforms, solutions to differential and difference equations. Transfer functions and block diagram manipulation. Modeling of mechanical and electrical systems. Introduction to feedback and control system design using the root loc- us diagram.


4243  Computer Engineering Projects. Lab 2. Prereq- uisites: 3213, 3233, 4013 and 4213. Team projects involving design, construction, and testing of a microcomputer interfaced with a microprocessor and microcomputer in instructional laboratory. Emphasis on software and hardware design of microcomputer systems. Review of logic circuits, integrated circuit transistors, and digital computer systems. Emphasis on the historical development of computer architecture and computer design.

4273  Software Engineering. Lab 2. Prerequisites: COMSC 2123, 3443 or ECEN 3213. Funda- mental characteristics of the software life cycle. Tools, techniques, and management controls for development and maintenance of large software systems. Software metrics and mod- els. Human factors and experimental design. Same course as COMSC 4273.


4313  Linear Circuit Design. Prerequisite: 3513. Theory of linear circuit design. Introduction to linear circuit design, design of linear circuit design, and design of linear circuit design. Introduc- tion to linear circuit design, design of linear circuit design, and design of linear circuit design.

4353  Communication Electronics. Prerequisite: 3113. Design of tuned voltage and power amplifiers, oscillators and mixers, modulation and demodulation and parametric amplifiers. Undergraduate study of communication systems. Introduction to communication systems. Introduction to communication systems. Introduction to communication systems. Introduction to communication systems.

4413  Controls II. Prerequisites: 3413, 3513, 3713. Design of analog and digital feedback control systems, review of functions and state vari- ables models for continuous-time and discrete- time systems, stabilizing control. Same course as COMSC 4413.


4503  Random Signals and Noise. Prerequisites: 3413, 3513 and 3713. Analysis of electrical systems using elementary concepts of probability, random variables and random pro- cesses. Frequency and time domain response of linear systems driven by random inputs. Same course as COMSC 4503.


5203* Parallel Processing. Prerequisite: graduate standing and design of digital computers. Arithmetic algorithms and the design of the arithmetic/logic unit (ALU). Serial and parallel data processing; control and timing systems; microprogramming; memory organization and alternatives; input/output interfaces. Course equivalent to COMSC 5253.

5253* Digital Computer Design. Prerequisite: 3233. Analysis and design of digital computers. Algorithmic techniques and the design of the arithmetic/logic unit (ALU). Serial and parallel data processing; control and timing systems; microprogramming; memory organization and alternatives; input/output interfaces. Same course as COMSC 5253.


5273* Digital Computer. Analysis and design of digital computers. Algorithmic algorithms and the design of the arithmetic/logic unit (ALU). Serial and parallel data processing; control and timing systems; microprogramming; memory organization and alternatives; input/output interfaces. Course is COMSC 5253.

5293* Digital Lab. Analysis and design of digital computers. Algorithmic algorithms and the design of the arithmetic/logic unit (ALU). Serial and parallel data processing; control and timing systems; microprogramming; memory organization and alternatives; input/output interfaces. Course is COMSC 5253.


5533* Modern Communication Theory. Prerequisite: 5513. Noise as a random process, analog and digital signal detection in the presence of noise, optimum receiver design using digital space concepts and introduction to information theory. Trade-offs between bandwidth, signal-to-noise ratio and the rate of information transfer. Example system designs include earth satellite, deep space and terrestrial communication systems and computer communication networks.

5543* Data Transportation and Protection. Data and its representation; finite field matrices, pseudorandom sequences; information protection; network protocols; synchronization, and channel and error control.

5613* Foundations of Electrodynamics. Prerequisite: 3613. A rigorous derivation of Maxwell’s equations utilizing Coulomb’s system of forces; vectors of special relativity; the invariance of Maxwell’s equations under Lorentz transformations, the four-vector form of Maxwell’s equations, scalar and vector potential functions, solutions of the Laplace and Poisson equations, solutions of the homogeneous and inhomogeneous wave equations with applications to guided waves, radiation, and scattering.

5623* Antenna Theory. Prerequisite: 3613. Fundamental antenna parameters, including directive, efficiency, radiation resistance, and pattern. Analysis of dipole, loop, aperture, broadband, and traveling wave antennas. Array theory. Introduction to numerical techniques used in modern antenna design.


5660* Research. 1-3 credits, maximum 30. Prerequisite: consent of major professor. Independent research for students continuing their research work beyond the level of the M.S. degree.

5695* Special Topics. 1-9 credits, maximum 9. Prerequisite: consent of instructor. Subject to be selected by the graduate electrical engineering to cover state-of-the-art research advances.

5713* Introduction to System Theory. State-space techniques of engineering systems analysis. Application of matrix methods to systems modeled by linear vector differential or difference equations. Develops controllability and observability conditions and eigenvalue/eigenvector assignment procedures.

5723* Nonlinear Systems Analysis I. Prerequisite: 5713. Nonlinear differential equations and phase space techniques; method of perturbations, asymptotic, orbital and structural stability; subharmonic generation; generalized approaches to nonlinear systems analysis.

5753* Digital Processing of Speech Signals. Review of digital signal processing; digital models for the speech signal. Short-time Fourier analysis, linear, and quadratic approach to speech, and an introduction to man-machine communication by voice.

5763* Digital Signal Processing. Introduction to discrete linear systems; frequency-domain design of digital filters; quantization effects in digital filters; digital filter hardware, discrete Fourier transforms; high-speed convolution; and correlation with application to digital filtering; introduction to Walsh-Fourier theory.

5853* Digital Processing of Speech Signals II. Introduction to discrete linear systems; frequency-domain design of digital filters; quantization effects in digital filters; digital filter hardware, discrete Fourier transforms; high-speed convolution; and correlation with application to digital filtering; introduction to Walsh-Fourier theory.

5873* Random Systems Modeling and Analysis. Introduction to discrete linear systems; frequency-domain design of digital filters; quantization effects in digital filters; digital filter hardware, discrete Fourier transforms; high-speed convolution; and correlation with application to digital filtering; introduction to Walsh-Fourier theory.

5863* Digital Image Processing. Prerequisite: 5763. Digital image processing including acquisition and characterization of images, coding, encryption, and noise removal. Use of transforms. Use of ECEN VAX/COMTAL image processing system to develop skills in using and writing image-processing software.


5983* Opto Electronics. Hermetic-GaAs beams, optical fibers and waveguides, coupling of modes, nonlinear optical devices: modulators frequency shifters; optical power detectors. Description of optical circuits. Integrated optical circuits.

6005* Research. 1-3 credits, maximum 30. Prerequisite: consent of major professor. Independent research for students continuing their research work beyond the level of the M.S. degree.

6095* Special Topics. 1-9 credits, maximum 9. Prerequisite: consent of instructor. Subject to be selected by the graduate electrical engineering to cover state-of-the-art research advances.

6123* Special Topics in Power Systems. Prerequisite: 5113. Selected recent topics related to power system operation and planning.

6253* Advanced Topics in Computer Architecture. Prerequisite: 5253 or COMSC 5253. Innovations in the architecture and organization of computers, with an emphasis on parallelism. Topics include: superscalar computers, multiprocessors, microprocessors, data flow, and reduction machines. Same course as COMSC 6253.


6450* Control Systems II. 1-3 credits, maximum 6. Prerequisites: 5413 and 5523. Advanced topics in optimal control systems. Dynamic programming and the maximum principle applied to stochastic systems. Optimum state estimation and the separation theorem. Selected topics from recent developments in adaptive and stochastic control.


6550* Topics in Statistical Communication Theory. 1-3 credits, maximum 6. Prerequisite: 5513. Advanced topics chosen from recent developments in adaptive and stochastic systems, optimal adaptive estimation theory, decision theory applied to engineering problems, modulation and detection theory and analysis and processing of seismic data.

6653* Applications of Electromagnetic Theory II. Applications of quantum electrodynamics. Topics of current interest with sufficient mathematical sophistication to equip the student for state-of-the-art research in the area.


6723* Nonlinear Systems Analysis II. Prerequisite: 5723 or MAE 5723. Topics in nonlinear systems theory selected from the current literature. May include nonlinear stability theory, macroscopic input describing functions, nonlinear feedback control theory, the problem of Lure and Popov’s criterion, multiparameter perturbation theory.

6813* Non-linear State Techniques. Prerequisite: 5813. Device fabrication; wafer preparation, etching and masking techniques, alloying, bonding, testing, Epitaxial techniques, special topics.
Electrical Power Technology (EPT)

3103 Introduction to Electrical Power. Lab 3. Prerequisites: junior standing and trigonometry. Overview of the electrical industry with selected topics and laboratory to familiarize the student with electrical power systems. Technical language and symbology of the industry; surveying as applied to the needs of electrical power.

3213 Power Systems I. Prerequisites: MATH 2373 and basic electricity. Voltage, current and power relationships in single-phase and polyphase electric circuits and systems. Power transformers theory, operation, testing, and connection of starting and controlling electrical machines.

3224 Power Circuits and Machinery. Lab 3. Prerequisite: 3103. Balanced operation of polyphase electric circuits, DC and AC machinery and power transformers. Laboratory includes connections, testing and terminal behavior of operating electric circuits, machines and transformers. Control of both DC and AC machinery.


4050 Advanced Electrical Power Problems. 1-4 credits, maximum 4. Prerequisites: junior standing and consent of department. Special problems in the electrical power area.

4113 Power Systems II. Prerequisites: 3213, 3224, MATH 2363. Transmission and distribution of electrical power. Transmission line parameters, system modeling, load flow analysis. Mathematical techniques in the analysis of large networks. Problem procedures are computer assisted.

4124 Switchgear and Protective Relaying. Lab 3. Prerequisite: 3213. Types of switchgear and protective devices discussed as to construction, use, testing, installation and maintenance.

4134 Control Circuits and Systems. Lab 3. Prerequisites: 3224 and basic electronics. Operational amplifiers, synchrons and digital control concepts in control systems. Use and application of computers in control systems. Analysis techniques such as Laplace transforms and control system modeling, using both physical variables and block diagram techniques.

4223 Advanced Topics in Electrical Power. Prerequisites: 4113, 4124. Electric energy systems planning, operation control, and protection. System problem solutions are computer assisted.

4234 Solid State Power Electronics. Lab 3. Prerequisite: 4134. Solid state electronic devices such as thyristors, power switches, rectifiers and switched DC sources. AC voltage controllers, three-phase controllers and controlled rectifier circuits. Choppers, inverters, cycloconverters, and uninterruptable power supplied will be studied.

Electronics and Computer Technology (ECG)


3113 Circuit Analysis II. Prerequisites: 2544, COMSC 2113 and MATH 2373. Application of elementary switching functions and Laplace transforms to electronic circuit analysis. Circuit analysis in the S-plane, transfer functions and computer applications.

3123 Machine Methods in Circuit Analysis. Lab 3. Prerequisites: 2544 and 2634. Use of current commercial software such as Spice and Micrologic in analyzing and solving circuit problems.

3234 Nondestructive Testing. Lab 2. Commonly used nondestructive testing in industry; radiography. Magnelux, liquid penetrating, ultrasonic and eddy current testing.

3354 Electronic Digital Systems. Lab 3. Prerequisite: 2633. Use of both minicomputers and microcomputers in controlling I/O devices. Students required to develop interface circuitry in a project setting to meet assigned specifications.

3363 Electronic Amplifiers II. Lab 3. Prerequisite: 1224. Advanced topics in amplifier bias stabilization, stability of feedback amplifiers, DC amplifiers, different amplifiers and operational amplifiers.

3363 Data Acquisition and Control. Lab 2. Prerequisite: 2213. Data acquisition and the control of automatic test equipment through the IEEE 488 BUS. Transducers D/A and A/D convertors, multiplexers, and sample/hold circuits included. Use of a microcomputer in controlling test equipment. Silicon-controlled rectifiers as power control devices.

3363 Advanced Electronic Problems. 1-4 credits, maximum 4. Prerequisites: junior standing and consent of head of department. Special problems in the electronic area.

4153 Data Communications. Lab 2. Prerequisites: 2633, 2634, and 3263. Data communications including multiplexing concepts, sampling techniques, encoding techniques, telemetry, digitalized voice, TVY, and bulk transmission systems.

4314 Control Circuits. Lab 3. Prerequisite: 3113. Components, principles and techniques basic to electronic control systems...Feedback control theory, transducers, servos and motors.

4504 Microwave Techniques. Lab 3. Prerequisites: 2634, 3113. Communication principles and measurement techniques in the UHF and microwave spectrum, coaxial and waveguide transmission lines, antenna systems and signal transmission, modulation and detectors, oscillators and amplifiers, introduction to signal transmission and modulation methods.

4532 Senior Project. Lab 3. Prerequisite: 20 credit hours of division and electronics courses or consent of instructor. Intended for the last semester, a synthesis of all pertinent skills and knowledge developed in the curriculum. Production of a useful or marketable electronic product or device through design, assembly, test and demonstration phases.

Engineering (ENGR)

1111 Introduction to Engineering. Advisement, counseling and enrollment procedures; methodology in solving engineering problems; engineering ethics and practice.

1212 Introduction to Engineering II. Prerequisite: 1111. Continuation of 1111.

1311 Introductory Engineering Graphics. Principles, techniques and skills of graphics as used in engineering.


1501 Women in Engineering Seminar. Prerequisite: consent of instructor. Opportunities to meet and talk with established women engineers. Potential problems faced by women in engineering and topics of particular interest to women students in engineering.

2030 Co-op Industrial Practice I. 1-6 credits, maximum 12. Prerequisites: sophomore standing and permission of Co-op coordinator. Pre-engineering industrial practice. Written reports as specified by advisor. Application of credit to meet degree requirements varies with level and department.

2100 Orientation Projects. Lab 2-6. 1-3 credits, maximum 3. Prerequisite: pre-engineering standing. Enrollment in independent study or small groups. Projects to assist students with special needs to adjust to engineering curriculum.

2113 Science and Technology in a Modern Society. Prerequisite: MATH 1914 or MATH 1513 or equivalent. Concepts and ideas in science and technology relevant to participation in decisions in our technological age.

3030 Co-op Industrial Practice II. 11.4 credits, maximum 12. Prerequisites: junior standing and permission of Co-op coordinator. Pre-engineering industrial practice. Written reports as specified by advisor. Application of credit to meet degree requirements varies with level and department.

3111 Introduction to Engineering for Transfer Students. Prerequisite: transfer status with 28 or more credit hours. Adjustments from previous college situation needed to select a proper course of studies based on abilities, aptitudes and interests.

3333 Acoustics of Music and Speech. Prerequisite: 4 credits completed. Algebra base treatment of the physical principles of sound in music and speech, and the sense of hearing. Sound production by musical instruments, measurement of sound, and knowledge developed in the curriculum. Production of a useful or marketable electronic product or device through design, assembly, test and demonstration phases.

4030 Co-op Industrial Practice Ill. 1-6 credits, maximum 12. Prerequisites: senior standing and permission of Co-op coordinator. Pre-engineering industrial practice. Written reports as specified by advisor. Application of credit to meet degree requirements varies with level and department.

5010* Studies in Engineering Instruction and Research. 1-3 credits, maximum 6. Prerequisite: current or expected appointment as a graduate teaching or research assistant. Emphasizes the participation of the teaching and research assistant in the procedures and seminars necessary for satisfactory performance of duties. Not to be used on study plans toward a degree in the Graduate College. Graded on pass-fail basis.

Engineering Science (ENGSC)

2112 Statics. Lab 2. Prerequisites: PHYS 2014 and MATH 2265. Resultants of force systems, static equilibrium of rigid bodies and statics of structures. Shear and moment diagrams.

2122 Elementary Dynamics. Prerequisite: 2112. Dynamic equilibrium of particles and bodies. Work-energy and impulse momentum principles.

2142 Strength of Materials. Prerequisite: 2112. Bending moments, deformation and displacements in elastic and plastic deformable bodies.

2213 Introduction to Electrical Science. Prerequisites: PHYS 2014 and MATH 2265. Elements of electrical engineering: AC and DC circuits, mesh and node formulation of network equations, steady-state response to sinusoids, energy, power and power factor.

3233 Fluid Mechanics and Heat Transfer. Prerequisites: MATH 2365 or concurrent enrollment and CHEM 1515. Fluid statics, laminar and turbulent momentum transfer and convective heat transfer at introductory level. Dimensional analysis. Flow analysis of real fluids with the Bernoulli equation. Conduction and radiation of heat; heat exchanger analysis.


Engineering Technology (See specific technology programs listed alphabetically)

English (ENGL)


0123 Basic Composition. Intensive instruction in grammar and error avoidance (especially the differences between spoken and written English), paragraph structure, and essay writing. May be used for skills remediation or to satisfy high school curricular deficiency in English.

1010 Studies in English Composition. 1-2 credits. Maximum 2. Special study in composition to allow transfer students to fulfill general education requirements as established by Regent's policy.

1013 International Freshman Composition I. Lab 2. Restricted to students whose native language is not English. Expository writing with emphasis on structure and development. Special attention to problems of English as a second language. This course may be substituted for 1113.

1033 International Freshman Composition II. Prerequisite: 1013 or 1113. Restricted to students whose native language is not English. Expository composition with emphasis on technique and style in writing research papers. May be substituted for 1213.

1113 Freshman Composition I. The fundamentals of expository writing with emphasis on structure, development and style.

1213 Freshman Composition II. Prerequisite: 1013 or 1113. Expository composition with emphasis on technique and style through intensive and extensive readings.

1313 Critical Analysis and Writing I. Prerequisites: English ACT score of 30 and 3.50 overall high school or transfer GPA. Review of fundamental techniques as necessary. Individualized instruction in writing on topics based on discussion of student's interests. Class size limited. This course may be substituted for 1113.

1413 Critical Analysis and Writing II. Prerequisites: "A" or "B" in 1113 or 1313. English ACT score of 30 and consent of course director. Individualized directed writing projects from discussions of books and ideas. Class size limited. This course may be substituted for 1213.

1923 (H)Masterpieces of Literature. Readings in the great works of the most important writers of Britain and America, such as Shakespeare, Dickens, T. S. Eliot, and others.

2023 Readings in Biological Sciences. Reading and study skills, systematic thinking processes and abilities in organization and expression as applied to the life sciences.

2233 Introduction to Technical Writing. Prerequisite: 1113. Does not meet any part of the six-hour composition requirement for the bachelor's degree. Technical literature and publications in the student's area of specialization. Emphasis on clarity, simplicity and careful organization.

2413 (Introduction to Literature. Fiction, drama, film and poetry. Written critical exercises and discussion.

2443 Languages of the World. A comprehensive survey of world languages. The essential structural and historical organization of languages. The process of languages as a basic human function. Some course, as FLL 2443.

2513 Introduction to Creative Writing. Literary composition with emphasis on techniques and style through readings and writings in fiction, poetry and drama.

2543 Survey of British Literature I. The beginnings through the Neo-Classic Period.

2653 Survey of British Literature II. The Romantic Period to the present.

2773 Survey of American Literature I. The Puritans through the Romantic Period.

2883 Survey of American Literature II. The Romantic Period to the present.

3033 Fiction Writing. Prerequisite: 2513. Directed readings and practice in writing fiction with special attention to techniques.

3043 Poetry Writing. Prerequisite: 2513. Directed readings and practice in writing poetry with special attention to techniques.

3053 Scriptwriting. Prerequisite: 2513. Directed readings and practice in writing scripts with special attention to techniques.

3123 (H) Classical Mythology. The heritage of classical Greek and Roman myths as revealed in selected examples of British and American literature.

3143 (H)Sp0)American Folklore. Historical perspective, traditions, common cultural experiences and varied ethnic contributions to American life before the century as expressed in American folklore.

3163 World Literature I. Selected literary masterpieces exemplifying ideals and values in Western cultures.

3193 (H)World Literature II. Selected literary masterpieces exemplifying ideals and values in non-Western cultures. Emphasis on the study of non-Western literature available in English.

3200 Special Problems in Language and Literature. 1-3 credits, maximum 3. Prerequisite: 9 credit hours of English. Specialized readings and independent study.

3203 Advanced Composition and Rhetoric. Prerequisite: 9 hours of English. Theories of regulative grammar and rhetoric as applied to the writing process.

3240 Criticism. 3 credits, maximum 6. Study and application of critical theoretical in literature, film, or technical writing.

3223 Technical Writing. Prerequisites: 1113, 1213, and junior standing. Applied writing in areas of specialization. Intensive practice in professional writing modes, styles, research techniques and editing for specialized audiences and/or publications. This course may be substituted for 1213 with an "A" or "B" in 1113 and consent of the student's college.

3333 (H)Short Story. Origins, development, theory and craft of the short story.

3353 (H)Film as Literature. Film and literature as narrative forms.

3363 (H)Drama. Origins, development, theory and craft of drama.

3603 British Literature to 1600. Historical development. Major writers and their works.

3633 (H)British Literature 1600-1800. Historical development. Major writers and their works.


3653 British Literature Post 1900. Historical development. Major writers and their works.

3703 (H)American Literature to 1800. Historical development. Major writers and their works.

3713 (H)American Literature 1800-1900. Historical development. Major writers and their works.

3723 (H)American Literature Post 1900. Historical development. Major writers and their works.

4003* History of the English Language. Prerequisite: 9 credit hours of English. The growth of the English language.

4013* English Grammar. Prerequisite: 9 credit hours of English. The traditional terminology and concepts of English grammar leading or evolving into the several current systems of description.

4063* Descriptive Linguistics. Prerequisite: 9 credit hours of English. The methodology of linguistics analysis.

4083* Applied Linguistics. Prerequisite: 9 credit hours of English. The application of linguistic methods to English literary analysis.


4263* The Ethics of Film. Major theoretical approaches to the art of cinema; auteurism, semiotics, structuralism, historicism.

4303* British Drama 1500-1600. Genre development. Major writers and their works.


4323* British Drama Post 1800. Genre development. Major writers and their works.

4333* (H)American Drama. Genre development. Major writers and their works.


4453* Contemporary Literature. Genre development. Major writers in the novel, poetry, or drama genre.

4520* Problems in English. 1-3 credits, maximum 6. Prerequisite: 12 credit hours of English. Specialized readings and independent studies.

4523* Technical Writing Internship. Prerequisite: 6 credit hours of English including 3323. Practice in writing resumes, proposals, abstracts and articles. Concentrated review of mechanics, proofreading, editing and interviewing techniques. Second eight weeks will include research experience.

4533* Advanced Technical Writing. Prerequisite: 6 credit hours of English including 3323. Specialized writing projects growing out of areas of specialization with emphasis on practical and marketable skills.

4543* Technical Editing. Prerequisite: 9 credit hours of English. Scientific and technical editing skills; emphasis on editing project.
4550* Problems in Technical Writing. 1-3 credits, maximum 8. Prerequisite: 9 credit hours of English. Research methods, emphasis on re- search project.

4563* Scientific and Technical Literature. Prerequisite: 6 credit hours of English. Scientific and technical style.

4633* Advanced Fiction Writing. Prerequisite: 3033. Student practice and composition.

4643* Advanced Poetry Writing. Prerequisite: 3043. Student practice and composition.

4653* Advanced Scriptwriting. Prerequisite: 3053. Student practice and composition.

4703* (H)Chaucer. The Canterbury Tales in Middle English.

4713* (H)Milton. The more notable minor poems, prose selections and the major poems—Paradise Lost, Paradise Regained and Samson Agonistes—studied critically in context of the 17th century.

4723* (H)Shakespeare. Major plays and selected criticism.

4730* Single Author or Work. 3 credits, maximum 6. The works of a single author such as Hawthorne, Coleridge, or Faulkner or a single work and selected criticism such as The Bible, The Prelude, Moby Dick, Ulysses.

4773* Literature by Women. The collection of literature written by women in England and America, classical and modern figures.


4933* Minority. Ethnic or Regional Literature. The study of minority, ethnic or regional American literature. Topic varies by semester.

4993* Senior Honors Thesis. Prerequisites: admission to A&S Honors program and 3.50 cumulative GPA. For Honors students in their final semester. Thesis written on a topic of student's choice and directed by a faculty member. Final approval of thesis requires oral defense.


5013* Introduction to Graduate Studies. Principles and procedures in scholarly research.

5023* Old English. Major works in Old English.

5053* Single Author or Work. The works of a single author such as Spenser, Shakespeare, Pope, or Nabokov or a single work and selected criticism such as Hamlet, Huckleberry Finn, or Proust's Cantos.

5063* Seminar in Shakespeare. Intensive study of a limited number of plays. Assignment of prob- lems to individual students.

5073* Old English Poetry. Prerequisite: 5023. Beowulf in Old English and selected criticism.

5083* Seminar in Chaucer. The Canterbury Tales in Middle English; language study, criticism.

5093* Seminar in Milton. Poetry, major prose, and criticism.

5120* Studies in Teaching English as a Second Language. 1-3 credits, maximum 6. Selected topics in teaching English as a second lan- guage; e.g., cross-cultural communication, materials preparation, bilingual education.

5130* Studies in English Grammar. 3 credits, maxi- mum 6. Selected study of current topics in grammatical theory as it applies to the teach- ing of English.

5140* Seminar in Linguistics. 3 credits, maximum 6. Selective study of current topics in linguistics.

5163* Middle English Literature. Major works in Middle English.

5210* Seminar or Directed Study. 1-6 credits, maxi- mum 9. Specialized readings or independent studies.

5213* Teaching Freshman Composition. Materials and methods of instruction in freshman com- position.

5223* Teaching Technical and Business Writing. Materials and methods of instruction in teach- ing technical and business writing.

5243* Teaching English as a Second Language. Theories of second language acquisition. Ma- terials and methods of instruction.

5293* Interdisciplinary Uses of English. Interdisci- plinary study with emphasis on multiple uses of literature and writing: for example film, new media, popular culture, American studies.

5313* Internship, Teaching English as a Second Language. Supervised teaching of beginning through advanced English as a second lan- guage courses.

5333* Seminar in TESL: Testing. Standardized test- ing for teaching English as a second language.

5410* Seminar in British Literature of the 16th Cen- tury. 3 credits, maximum 6. Selected writers and their works, themes and literary develop- ments of the 16th century.

5420* Seminar in British Literature of the 17th Cen- tury. 3 credits, maximum 6. Selected writers and their works, themes and literary develop- ments of the 17th century.

5440* Seminar in British Literature of the 18th Cen- tury. 3 credits, maximum 6. Selected writers and their works, themes and literary develop- ments of the 18th century.

5460* Seminar in British Literature of the 19th Cen- tury. 3 credits, maximum 6. Selected writers and their works, themes and literary develop- ments of the 19th century.

5480* Seminar in British Literature of the 20th Cen- tury. 3 credits, maximum 6. Selected writers and their works, themes and literary develop- ments of the 20th century.

5520* Internship in Technical Writing. 1-3 credits, maximum 6. Practice in writing appropriate documents such as proposals, manuals (soft- ware, hardware, reference, training), articles, functional specifications in job-simulation situ- ations. Review of academic materials as ap- propriate.

5533* Seminar in Advanced Technical Writing. Spe- cialized writing projects growing out of student's special interests and emphasizing the student's career preparation. Coverage of manuals, proposals, and visual aids used to communicate technical information.

5543* Seminar in Scientific and Technical Editing. Managing technical documentation produc- tion; developing scientific and technical edit- ing skills; special emphasis on editing project.

5560* Seminar in Early American Literature. 3 cred- its, maximum 6. Selected writers and their works, themes and literary developments of the 17th and 18th centuries.

5660* Seminar in American Literature of the 19th Century. 3 credits, maximum 6. Selected writ- ers and their works, themes and literary de- velopments of the 19th century.

5680* Seminar in American Literature of the 20th Century. 3 credits, maximum 6. Selected writ- ers and their works, themes and literary de- velopments of the 20th century.

5733* Seminar in Creative Writing: Fiction. Writing fiction at the professional level.

5743* Seminar in Creative Writing: Poetry. Writing poetry at the professional level.

5753* Seminar in Creative Writing: Scriptwriting. Scriptwriting at the professional level.

5990* Special Problems. 1-3 credits, maximum 6. Investigation into a designated area of English leading toward material for creative component option (M.A.), Graduated on a pass-fail basis.


6153* Studies in Creative Writing: Scriptwriting. Prerequisite: 5753. Individual projects in scriptwriting.

6210* Seminar or Directed Study. 1-6 credits, maxi- mum 9. Specialized readings or independent studies.

6220* Studies in Fiction. 3 credits, maximum 6. Selected work in fiction, for example develop- ment of short fiction, contemporary short fic- tion, contemporary novel.

6230* Studies in Poetry. 3 credits, maximum 6. Selected work in poetry, for example modern poetry and contemporary poetry.

6240* Studies in Drama. 3 credits, maximum 6. Selected work in drama, for example Ameri- can, British, Tudor-Stuart, pre-Shakespearean.

6253* Studies in New Media. Selected work in new media, for example film, literary adaptation to film, film and television.

6260* Studies in Literary Criticism. 3 credits, maxi- mum 6. Selected work in literary criticism, for example ancient and neo-classical, 19th cen- tury, 20th century.

6500* Studies in Technical Writing. 1-3 credits, maximum 6. Selected topics in technical writ- ing.

Entomology (ENTO)

2003 Insects and Society. Insect development, be- havior, ecology, and the relationship of in- sects to society.

3003 Livestock Entomology. Lab 2. Economic im- portance, biology and control of pests affecting domestic animals.

3021 Insect Pests of Stored Products. Lab 4. The biology, damage and control of insect pests of stored products.

3022 Agriculture. Biology of the honeybee and other bees.

3333 Insect Pests of Agronomic Crops. Lab 2. Life histories, and behavior of insects with empha- sis on ecology and control of pests in field crops.

3423 Insect Pests of Horticultural Crops. Lab 2. Classification, biology and control of pests attacking horticultural crops with a brief intro- duction on general morphology and develop- ment of insects.

3463 Forest Insects. Lab 2. The biology and control of insects injurious to shade tree, forest and forest products.


4523* Principles of Insect Pest Management. Lab 2. Prerequisite: 3112 or 3332 or 5553. Modern concepts of pest regulation and the influence of alternatives on the agro-megsystem and eco- nomics of crop production. Identification of economically important insect pests in the Southwest.
**Environmental Science (ENVIR)**

**5000** Research for Thesis or Report. 1-6 credits. maximum 6. Prerequisites: approval of advisory committee and departmental steering committee. Research leading to master’s thesis or report.

**5100** Environmental Problem Analysis. 3 credits. maximum 6. Required for environmental science option. Multidisciplinary team investigation of environmental problems. Problem formulation, review of applicable theory from different disciplines, data collection from field, library and laboratory, mathematical modeling and application of appropriate techniques of analysis to selected environmental problems and environmental impact assessments.

**5300** Seminar in Environmental Science. 1-3 credits. maximum 6. Selected environmental problems, individual research, seminar reports and group discussion of reports.

**5600** Research for Dissertation. 1-12 credits. maximum 24. Prerequisite: approval of advisory committee and departmental steering committee. Research leading to the Ph.D. dissertation.

**6200** Seminar in Environmental Problems. 3 credits. maximum 6. Multidisciplinary investigations of current environmental problems that may be either global or local in nature.

**Family Relations and Child Development (FRCD)**

**2003** Dynamics of Family Relationships. An ecological approach to interpersonal relationships through study of the processes in the family that influence the way members relate to each other throughout their lives. Practice in application of principles is included.

**2102** Professional Laboratory Experiences in Home Economics Education and Community Services. Lab 2. Real-life experiences in different professional career areas acquainting students with the diversity of responsibilities as applied to the variety of audiences served. Those entering the teacher certification option need to spend the equivalent of 2 hours per week in the public schools.

**2113** (S)Human Development Within the Family: A Lifespan Perspective. Human development within the family system from a lifespan perspective. Principles of development and dynamics of behavior and relationships. Directed observation.

**2213** Human Sexuality and the Family. Sexual development emphasizing personal adjustment and interaction with family and culture.

**2413** Resource Management for Individual and Family. Principles and procedures of management and their relationships to human and material resources. Emphasis given to the consumer in the marketplace, financial management and time and energy management.

**2611** The Professional in Family Services. Prerequisite: HEC 1111 or equivalent. Builds skills in decision-making, priority-setting, self-assessment, and self-advocacy. Volunteer and field experience options available in the field of family services.

**3013** (S)Early Adulthood. Study of the unique characteristics of young adults, marriage with special emphasis on building a healthy, balanced relationship; communication and decision-making; and coping with such problems as money, sex, role taking, in-laws and children.

**3113** Parent-Child Relationship. For parents, teachers or others who expect to be responsible for young children. Increases understanding of the needs and feelings of both the developing child and the adult caregiver. A wide variety of philosophies and techniques explored out of which individuals can devise their own comfortable, effective parenting styles.

**3143** (S)Marriage. Consideration of courtship and marriage with special emphasis on building a healthy, balanced relationship; communication and decision making; and coping with such problems as money, sex, role taking, in-laws and children.

**3213** Social and Emotional Development in Early Childhood. The social and emotional development of the young child. Utilization of this information in creating appropriately nurturant environments and devising effective guidance strategies. Directed observation in preschool laboratories.

**3223** Early Field Experiences. 1-4 credits, maximum 4. Decision-making, priority-setting, and self-assessment. Participation in Child Development Laboratories, public schools or family services.

**3233** Early Childhood Education: Program Development. Creating learning environments that facilitate children’s physical development; skill in communication, inquiry, creative expression, and interpersonal relations; cognitive development; and emotional development. Planning, implementing, and evaluating developmentally appropriate integrated learning experiences.

**3253** Child Development and Guidance: School Age. Influence of the family experience on the physical, intellectual, social and emotional development of children in the school and pre-adolescent years. The roles and responsibilities of teachers, administrators, parents, and community leaders. Application of principles of development and guidance in actual work with children.

**3303** Development of Creative Expression and Play in Early Childhood. Prerequisite: course in child development. Consideration of appropriate experiences in the areas of art, music for children under six. Observation and participation with children in the Child Development Laboratories and other groups.

**3313** Holistic Economics Curriculum Development and Evaluation. Lab 2. Prerequisite: full admission to Teacher Education. Theory and application of models of curriculum development and evaluation. Administration and interpretation of assessment techniques; design and use of teacher-made tests. Utilization of educational objectives, strategies, resources, and evaluation of learning and programs.

**3333** Child Development and Guidance: Adolescence. Development of the adolescent physically, socially, intellectually and emotionally with emphasis on the search for identity, heterosexuality, vocational choice and interpersonal relationships. Observation of adolescents.

**3403** Language Development, Literature and Literacy in Early Childhood. Prerequisite: 3213 or equivalent. Consideration of appropriate experiences in the areas of literature and language arts. Experiences with nursery school, kindergarten and other children’s groups.

**3413** (S)Family Economic Decision Making. Helping individuals make more effective choices as consumers. Relevant concepts, theories, and techniques from economics, marketing, and statistics. Information- imperfect markets, assessing consumer information, seeking redress, bargaining, inflation, decision-making models, the family life cycle, and measurement of quality and assessment of the performance of markets.

**3423** Technology and the Home. Lab 2. Selection, use and application of equipment in the home, including microcomputers and other technologies for management of the home.

**3433** Family Finance. Prerequisite: junior standing. Problems faced by consumers in the changing economy; impact of family financial decisions on a consumption-oriented society. Management of family resources including financial planning, credit, insurance, savings, investments, tax and estate planning.

**3503** Creative Development in Early Childhood. Prerequisite: 3213 or equivalent. Study of appropriate experiences in physical and natural sciences, mathematics and social studies.

**3613** Professional Services for Children and Families. Study of selected services for children and families.
3623 Fundamentals for the Helping Professional. Prerequisite: 3613. Development of fundamen-
tal skills and techniques used by those in
various helping professions as viewed from the
systems theory perspective. Observation and
interviewing techniques, problem-solving and
advocacy skills, and introduction to grant
writing.

3753 (S)Family Development. Relationships over the life
course within the American family. Variations in
form and function of the family system related to
cultural, economic, and so-
cial contexts.

3810 Practicum or Internship in FRCD. 1-9 credits,
maximum 9. Prerequisites: 3213 and 3233, or
3613 and 3623. Observation and participation
in programs for children, youth, adults and
families. Supervision by FRCD faculty mem-
bers or their designated representatives.

4023 Parent-School-Community Relationships. Prerequi-
site: senior or graduate standing. Ef-
f ective ways for the home, school and the
community to work together to provide for
the optimum development of young children,
including children from other cultures and eth-
groups.

4102 Philosophy of Home Economics Education. Basis for
developing a home economics edu-
cation philosophy as related to present day
teachers of education including multiple-cultural
education, diversity of learners, characteris-
tics of effective teachers, ethical considerations
and other major contemporary issues in pub-
lic education.

4103 Managing Career Decisions. Applications of de-
cision making models for career and life
planning. Self-assessment, career alternatives,
career mobility, work/family issues and re-
source identification. All students seeking teaching certification will complete a module on meth-
ods of teaching career education.

4113 Home Economics: Professionalism, Issues and
Actions. History and philosophy of home
economics. Current issues and strategies for
professional development, integration of core
concepts and theories, and involvement in public
policy.

4133 Organizing and Administering Programs for
Families and Young Children. Development,
management, and evaluation of programs
serving families and children.

4203 Strategies for Teaching. Learning theories and
strategies for planning, teaching and evaluat-
ing formal and nonformal programs. Not applicable for teaching license.

4210 Seminar in Vocational Home Economics. 1-
4 credits, maximum 4. A study of the bases for
vocational home economics’ diverse audiences and its relationship to all areas of
vocational education.

4212* Extension Programs in Home Economics. Devel-
opment, organization and methods of
home economics public service programs.

4213 Media, Materials and Techniques in Home
Economics Education. Lab. 6. Prerequisites:
3213 and full admission to Teacher Education. Application of educational prin-
ciples to specific home economics subject
areas. Development of media, materials and techniques used by those in
various helping professions as viewed from the
systems theory perspective. Observation and
interviewing techniques, problem-solving and
advocacy skills, and introduction to grant
writing.

4252* History and Philosophy of Early Childhood
Education. Prerequisites: courses in child de-
velopment and early childhood education and
senior or graduate standing. Full ad-
mission to teacher education. Leadership re-
sponsibility and activities of the home eco-
nomics teacher in youth organizations, adult
education, and effective interaction with par-
ents and community.

4333 Organization of School and Community Home
Economics Programs. Prerequisite: full ad-
mission to teacher education. Leadership re-
sponsibility and activities of the home eco-
nomics teacher in youth organizations, adult
education, and effective interaction with par-
ents and community.

4353 Strategies for Working with Adults in Commu-
nity Services. Theories of adult develop-
ment as they affect learning activities of adults
in family-related programs. Implications are
analyzed in relation to planning and selecting
programs, media, and teaching strategies.

4413 Management of Volunteer Programs. Prere-
quise: junior, senior or graduate standing.
For volunteer and human service professionals
who will have responsibility for utilizing vol-
unteer personnel in achieving program goals.
Overview of issues in volunteering, manage-
ment, and leadership strategies for maximiz-
ing volunteer effectiveness and strategies for
evaluating volunteer service.

4420* Preschool Teaching. 1-7 credits, maximum
7. Lab 3-21. Prerequisites: 3213, 3233, 3303,
3403, 3503, full admission to Teacher Educa-
tion, and pre-registration with director of Child
Development Lab. Preschool teaching with
responsibility in nursery school-kindergarten
groups.

4423 Family Resource Management. Exploration of
the time, human, environmental and finan-
cial resources of the family. Practical applica-
tion of management principles to the use of
family resources through supervised experi-
ences with attention to the development of
professional competence as well as personal
skills.

4463 (S)Women in the Economy. Prerequisites:
2413 and ECON 1113. Economic roles of
women in American society as consumers and
producers in the marketplace of
the home. Exploration of issues raised by the
changing economic status of women.

4650* Seminar in Family Services. Pre-employment
seminar. Individual competencies related to
family services, career opportunities, and the
process of seeking employment.

4720 Student Teaching in Economics of Aging. 1-6 credits,
maximum 12. Lab 3-36. Prerequisite: full ad-
mission to Teacher Education and stu-
dent teaching. Leadership responsibilities
and competencies in home economics education through directed teaching experi-
ence. Requires permission of instructor. Partici-
Participation starts at the beginning of the
semester in the assigned school.

4743* Field Experience in Early Childhood Edu-
cation. 1-6 credits, maximum 6. Lab. Instruc-
tor. Various units of work related to specific
problems in home economics education.

4793* (I)The Family: A World Perspective. Family
structure and interaction that transcend specific
cultures or nationalities; historical per-
spectives; and examination of specific cultural and
national examples of family forms.

4850* Seminar in Family Services. Pre-employment
seminar. Individual competencies related to
family services, career opportunities, and the
process of seeking employment.

4920 Management of Programs for Individuals and
Families. 2-4 credits, maximum 4. Emphasis
on development, management, supervision and
administration of programs serving individ-
uals and families.

4950* Special Unit Courses in Family Relations,
Child Development and Early Childhood Edu-
cation. 1-6 credits, maximum 6. Various units
taught by specialists in the field.

5133 Research Methods in Family Relations and Child
Development. Critical study of recent research and
emergent issues in family relations and child
development.

5140* Methods of Teaching Child Development and
Guidance. 1-3 credits, maximum 3. Prerequi-
tes: 2113 and 2312 or equivalents. Content-
related experiences and methods of teaching child development in classes for young and adults in secondary schools and colleges.

5210 Teaching Practicum. 1-3 credits, maximum 3. Prerequisites: six hours of graduate work and consent of instructor. Teaching hu-
mor, development and family sciences; con-
tent and techniques.

5253* Child Behavior and Development. Prerequi-
tes: consent of instructor. Current issues in
child development beyond infancy explored
within the context of recent research. Con-
trasting theoretical and methodological ap-
proaches critically evaluated.

5333* Early Childhood Education: Curriculum. Im-
lications of child development theory and research for planning educational programs
and learning experiences appropriate for young
children.

5353* Advanced Concepts in Early Childhood Pro-
gramming. Prerequisite: 3723 or consent of
instructor. Exploration and critical re-
view of the state of early childhood programming with emphasis on research, policy and practice that have been developed. Topics include anti-bias curriculum, family participation in early education, multi-
cultural issues, and programs for infants and
toddlers.

5363 Early Childhood Theory, Practice and Evalu-
ation. Prerequisites: 5223, 5253 or consent of
instructor. Examination of the administration of programs for young chil-
dren as well as policy evaluation and advo-
cacy. Legal, social and economic conditions and policies that affect the welfare of individuals and families.

5413* Human Ecology of the Family. Prerequisite:
4420 or consent of instructor. The family as
organization and unit of the community and the
organization of values, goals, standards and decision-
making in the management of family re-
sources. The unique role of the family in the
social and economic system.

5423* Research Literature in Gerontology. Current
research knowledge related to gerontology and
the aging process. Critical study of classic and
current research.

5443* Contemporary Consumerism: Issues and Ac-
tion. Prerequisite: consent of instructor. Con-
sumerism and the consumer movement in
today’s society. Objective analysis of current and
everging consumer issues, claims of consumerism and opposition to consumerism and/or action by consumers, business and
government.

5470* Developments and Innovations in Family Rela-
tionships, Child Development and Early
Childhood. 1-9 credits, maximum 9. Analysis
of current developments and innovative prac-
tices in family and human services. Emphasis on evolving concepts with impli-
cations for programs serving societal needs in
these areas.
5213* International Business Finance. Prerequisite: 5353. Theories and practices unique to business firms which operate in, or are influenced by, an increasingly global economy.

5243* Financial Markets. Prerequisite: 5353. An analysis of the structure of financial markets, the determination and behavior of interest rates, the functioning of and the flow of funds.

5352 Theory and Practice of Financial Management. Prerequisite: ACCTG 5103. Concepts and theories applicable to the financial administra- tion of a firm. Emphasis on problems and readings to illustrate various financial problems and techniques of solution.

5460 Seminar in Finance. 5-6 credits, maximum 6. Prerequisite: consent of instructor. Advanced research with emphasis on theoretical problems and solutions. Selected topics covered.

5513* Theory of Finance. Prerequisite: 5353. Development of theoretical structure of financial decisions beginning with case of certainty and moving to uncertainty models. Fundamental decisions of investment, financing, and production within the context of economic theory of choice and capital market equilibrium.

5550 Special Topics in Finance. 1-6 credits, maximum 6. Prerequisite: 5353. Theoretical and applied aspects of specialized financial areas. Evaluation of models, current trends and prob- lems of finance.

5613* Corporate Financial Planning. Prerequisite: 5353. Financial planning in a systems framework. An integration of existing financial theory and practice. Financial planning systems allowing the manager to acquire an overview of the various functions of the firm; to examine alternative courses of action with speed and thoroughness; to reduce the response time in reacting to change in the environment; and to improve future decisions from learning from feedback of previous decisions.

Fire Protection and Safety Technology (FIRET)

1013 Introduction to Loss Control and Risk Management. Lab 3. Basic concepts and methodologies from the fields of fire protection, occupational health, and radiation protection.

1213 Fire Safety Hazards Recognition. Lab 3. The "Fire Problem." Physical, chemical, and electrical hazards and their relationship to loss of property and/or life. Safe storage, transportation, and handling practices to eliminate or control the risk of fire in the home, business, and industry.

1373 Fire Suppression and Detection Systems. Lab 3. The design, installation, maintenance, and utilization of portable fire-extinguishing apparatuses and pre-engineered systems. Operational capabilities and utilization requirements of fire detection and signaling systems. Fire detection and suppression applied in practical laboratory problems.


1684 Industrial Loss Prevention. Lab 3. Prerequisite: 1213 or consent of instructor. Identifying industrial processes, equipment, facilities and work practices for detecting and controlling potential hazards.

2143* Electrical Safety Codes. Lab 3. Prerequisites: ECT 2213, MATH 1613. Safety-oriented design, installation, operation and maintenance of electrical power distribution systems based on current electrical codes and safety standards.

2143 Structural Designs for Fire and Life Safety. Lab 3. Prerequisite: GEN 1113. Building construction standards and codes to assure maximum life and property safety from fires, explosions and natural disaster. Egress design specifications, occupancy and construction classifications and fire protection requirements for building construction and materials.

2153 Fire Protection Management. Prerequisite: prior or concurrent enrollment in all other fire protection courses. Applied human relations, technical knowledge and skills for achieving optimum effectiveness from a fire protection organization.

2243 Automatic Fire Suppression Systems. Lab 3. Prerequisites: 1213 and MATH 1513. Detailed current standards for selection, design, installation, operation and maintenance of automatic fire suppression systems. Laboratory problems on applicable technological principles.

2483 Fire Protection Hydraulics and Water Supply Analysis. Lab 3. Prerequisites: 1213 and MATH 1513. Fluid flow through hoses, pipes, pumps and fire protection appliances. Water supply and distribution analysis using hydraulic calculations. Testing techniques to detect anomalies in design or performance capabilities.

3013 Industrial Safety Organization. Survey course. Recognition, evaluation and control of occupational health and safety hazards. Accident prevention, accident analysis, training technical and work procedures, equipment and personal protective equipment.


3113 Advanced Extinguishing Systems Design and Analysis. Prerequisites: 2483, 2243. Automatic fixed fire-extinguishing systems and water supply systems. Emphasis upon computer assistance through use of existing design programs.

3222 Industrial Security Applications. Safeguarding of life or property, personnel and proprietary information.

3233 Radiological Safety. Lab 2. Ionizing radiation problems: detection and measurement, shielding and exposure limiting, radiation health aspects, storage, handling and disposal.

3344 Elements of Industrial Hygiene. Lab 3. Prerequisites: CHEM 1255 and junior standing. Toxic or irritating substances, physical, biological, ergonomic and other occupational stress factors causing employee illness or discomfort, environmental pollution sources and controls.

3713 Hydraulic Design of Automatic Sprinkler Systems. Prerequisites: 1273A, 2483, MATH 1513. Hydraulic calculation technique for the design and analysis of automatic sprinkler fire extinguishing systems.

3723 Industrial Fire Pump Installations. Prerequisites: 2483, MATH 1513. Applications, design and analysis of industrial fire pump installations. Graphical analysis of fire pump contributions to existing fire protection water supply systems emphasized.

3733 Sprinkler System Design for High Piled and Rack Storage. Prerequisites: 2243, MATH 1513. Specific design techniques for sprinkler system protection of commodities stored in storage piles or racks over 12 feet in height.

4050 Advanced Fire Protection and Safety Problems. 1-4 credits, maximum 6. Prerequisite: consent of department head. Special technical problems in fire protection and safety.

4123 Advanced Fire and Safety Problems. Selected problems in the fire, occupational safety, occupational health and industrial security areas. Research or state-of-the-art technologies to prevent or correct such problems.

4133 Industrial Hygiene Instrumentation. Lab 3. Prerequisites: 3133, CHEM 1515. Description, operation and application of quantitative instruments in general use in industrial hygiene.

4333 System Safety Management. Lab 3. Prerequisite: prior or concurrent enrollment in all other fire/safety subjects. Fire/safety techniques to recognize, evaluate and control potential occupational hazards. Critical path, LAD, PERT and human factors concepts.

4403 Hazardous Materials Incident Management. Lab 3. Prerequisites: 3013, CHEM 1515. Interdisciplinary approach to hazardous materials incident management. Legislative require- ments, emphasis on comprehensive safety and health program compliance relating to hazardous materials incidents or waste sites. Regulatory code activities, transport-related inspections, incident modeling, and use of environmental safety software for problem solving and documentation.

Food, Nutrition and Institution Administration (FNIA)

1113 (N)Basic Human Nutrition. Functions of the nutrients in human life processes. Nutrient relationship to health as a basic for food choices. Open to all University students.

2111 Professional Careers in Dietetics. Prerequisites: HEC 1111 or concurrent enrollment. Career opportunities in dietetics. Roles, responsibilities and professional expectations of dietetics professionals. Routes to professional memberships and current issues in professionalism.


2124 Fundamentals of Dining Room Management. Lab 4. Prerequisite: 2113 or HRAD 1113. Experience in planning and management of table and beverage service in varied food service settings. Same course as HRAD 2124.

3133 Science of Food Preparation. Prerequisites: 2113 or HRAD 1113, organic chemistry. Application of scientific principles to food preparation. Same course as HRAD 3133.

3213 Management in Hospitality and Food Service Systems. Prerequisite: a course in economics. Function and methods of management as related to the hospitality and food service industries. Same course as HRAD 3213.

3440 Food, Nutrition and Institution Administration Preprofessional Experience. 1-5 hours. Prerequisite: 3 supervised work experience in one or more of the following: college and university food service, health care facilities, and food processing plants.

3543 (I)Food and the Human Environment Impact of the various factors which affect food availability, production, processing, distribution and consumption of food in the world. Challenges and solutions to the world food crisis.

3553 Practicing in Hospitality and Food Service Systems. Lab 2. Prerequisite: 3133 or concurrent enrollment. Procurement of food and nonfood materials in hospitality and related industries. Same as HRAD 3553.

3652 Food Conservation and Preservation. Lab 3. Prerequisites: 3133, organic chemistry, microbiology. Modern methods and principles of food conservation and preservation including freezing techniques; laboratory experience with different methods.

3813 Dietetics as a Profession. Identification of changing roles, appropriate responsibilities and professional expectations of dietetic prac- titioners by practice level and substantive category. Professional organizations, routes to membership in the American Dietetic Associa- tion; accreditation, licensure and other aspects of the profession.

4013* Experimental Foods. Lab 6. Prerequisite: 3133 or consent of instructor. Investigations in physical, chemical and sensory qualities of foods under experimental conditions. Develop- ment of an individual research project.

4223* Nutrition in the Life Cycle. Prerequisites: 1113 or equivalent, dietary needs and dietary concerns of individuals from conception through old age.

4323* Human Nutrition and Metabolism. Prerequi- site: 1113 (or equivalent), organic chemistry, physiology, clerical, absorption and metaboli- sm of nutrients, functions and health implications in the human organism.

4404 Food, Beverage and Labor Cost Controls. Prerequisites: ACCTG 2203, junior standing or consent of instructor. Food, beverage and food control systems associated with hospitality industry operations. Same course as HRAD 4333.

4365* Quantity Food Production Management. Lab 6. Prerequisites: FNIA or HRAD 2123, 3133, 3553, a course in accounting or mathematics or consent of instructor. Organization, pur- chasing, preparation and service of food for large groups. Same course as HRAD 4365.

4373* Creative Teaching of Nutrition. Prerequisite: 1113 or equivalent. Analyses of various meth- ods, techniques, resources and evaluation of nutrition education. Experiential component required.
5473* Institution Organization and Management. Lab 3. Prerequisites: FNIA or HRAD 3553, 4363. The organization of personnel and resources in a food service institution and the techniques required by the manager. Lab consists of work experience in Residence Hall Food Services. Same course as HRAD 4573.

4641 Seminar in Food and Nutrition. Prerequisite: upper-division standing. Reading and reporting on various topics in food and nutrition. Emphasis on interpretation of journal articles and research results. Open to all upper-division University students.

4693* Institution Administration. Lab 3. Prerequisite: 4573 or concurrent enrollment. Supervised administrative responsibilities in food services and related institutions such as hotels. Same course as HRAD 4693.

4733 Community Nutrition. Prerequisites: 1113 and an educational methods course. Application of nutrition, education and communication principles to community nutrition programs and services. Field work required.

4850* Special Unit Course in Food, Nutrition and Institution Administration. 1-3 credits, maximum 6. Special units of study in this department.

4852 Clinical Nutrition Practicum. Lab 3. Prerequisite: 4032; concurrent enrollment in 4852. Applications of clinical dietetics in the health care and community setting.

4853* Nutrition in Disease. Prerequisites: 4323; concurrent enrollment in 4852. Biochemistry of human nutrition as related to time factor, institution function and interests of research methods to FNIA and related extension. Special study or institution administration; animal experiment in relation to quality of product and other community nutrition programs.

5000 Research in Food, Nutrition and Institution Administration. 1-6 credits, maximum 6. Preparation for the master’s degree.

5012* Policy Development in Food, Nutrition and Related Programs. Rationale underlying selected governmental programs in food and nutrition and other home economics areas and assessment of the effectiveness of the programs.

5110 Research Developments in Food, Nutrition and Institution Administration. 1-3 credits, maximum 3. Prerequisite: concurrent enrollment in HEC 5102. Current developments and needs in research in FNIA including application of research methods to FNIA and research planning.

5113* Investigational Cookery. Prerequisite: 4013. Food science, food quality and physical characteristics of foods.

5200 New Findings in Nutrition. 1-3 credits, maximum 6. Prerequisite: 1113. Current emphases in nutrition, with implications for nutrition research, education, and public service.

5223* Quantity Food Development. Lab 5. Prerequisite: 4363 or equivalent. Experimental approach to methods in quantity food production as related to time factor, institution equipment and proportions of ingredients.

5343 Organization and Management of Food Service Systems. Prerequisite: 4573 or equivalent. Contemporary theories of organizational structures as applied in the management of food service systems.

5360 Maternal and Infant Nutrition. Prerequisite: 1113 or equivalent. Nutritional needs and dietary concerns during pregnancy, lactation and the first year of life, implications for nutrition intervention and education.

5370 Maternal and Infant Nutrition. Prerequisite: 1113 or equivalent. Nutritional needs of children through elementary school years. Dietary implications for child care, school food service and parent education.

5383 Nutrition for the Adolescent and Young Adult. Prerequisite: 1113 or equivalent. Nutritional needs and dietary concerns during adolescence and young adulthood. Implications for nutrition education and research.

5393 Nutrition for the Elderly. Prerequisite: 1113 or equivalent. Nutritional needs, and dietary concerns of the elderly. Implications for food and nutrition programs, policies, research and education.

5462 Food Service Layout and Equipment. Prerequisite: HRAD 4472. Food service layouts and specifications for institutional equipment.

5463 Advanced Human Nutrition. Prerequisites: biochemistry course and an upper-level nutrition course. Application to the human being of metabolic processes which involve essential dietary components.

5503 Nutritional Assessment. Prerequisites: 4223, 4323, or equivalent. Dietary, physical, and biochemical assessment techniques and their application to patient or client nutritional status assessment in health care systems.

5593 Quality of Work Life in Food Service Organizations. Prerequisite: one course in personnel management. Analysis of administrative problems in food service organizations. Focus on quality of work life assessment.

5643 Advanced Clinical Nutrition. Prerequisite: admission to AP4 or consent of instructor. Psychological and metabolic bases for nutritional support in critical care.

5650 Advanced Food Conservation and Processing. 2 credits, maximum 2. Lab 3. Prerequisite: 4013. Recent advances in food processing in relation to quality of product and conservation of food nutrients.

5673 Food Service Systems Manpower Management. Lab 3. Principles and practices of management in the procurement, development, maintenance and utilization of an effective and satisfied workforce in food service systems.

5713 Community Dietetics. Lab 2. Prerequisite: 4733 or equivalent. Analysis of the impact of political, legislative and economic factors on dietetic practice in public health and other community nutrition programs.

5743 Experimental Methods in Food and Nutrition Research. Prerequisites: a course in biochemistry, a course in statistics, a graduate course in food conservation. Experimentation for research in food and nutrition based on analytical laboratory techniques and other research methodology.

5753 Administrative Dietetics. Prerequisite: completion of Plan IVN ADA requirements or consent of instructor. Managing and evaluating food service systems in a variety of settings: health care; business and industry; and schools, colleges and universities as indicated in the performance requirements for management dietetics for the entry-level dietitian.

5850 Food, Nutrition and Institution Administration Workshop. 1-3 credits. Maximum 4. Prerequisite: graduate standing. Selected phases of food, nutrition and institution administration.

5870 Problems in Food, Nutrition or Institution Administration. 1-4 credits. Maximum 9. Needs of the control and management of food service systems; decision-making and institution or institution administration; animal experimentation or other research.

5960 Food, Nutrition and Institution Administration Seminar. 1 credit. Prerequisite 2. Prerequisite: consent of instructor. Instruction and/or tutorial work in a modern foreign language other than those offered in a major program.

5960 Seminar in Food, Nutrition and Institution Administration. 1 credit. Prerequisite 2. Prerequisite: consent of major professor.

6113 Critical Analysis of Current Issues in Nutrition. Prerequisite: 5463 or consent of instructor. Current issues in human nutrition with emphasis on interrelationships of nutrients in metabolism and their impact on health.

6123 Micronutrients in Human Nutrition. Prerequisite: 5463 or consent of instructor. In depth study of vitamins and minerals and their interrelationships in metabolism.

6233 Current Issues in Food Service Administration. 3 credits. Prerequisites: 5383, 5503 or consent of instructor. Current issues in food service administration with emphasis on quality food service and service, marketing, energy use, computer application, robotics and research needs.

6870 Independent Study in Food, Nutrition and Institution Administration. 1-3 credits, maximum 6. Selected areas of study in human nutrition or food service systems management for advanced graduate students working towards doctorate degree.

6960 Seminar in Food, Nutrition and Institution Administration. 1 credit. Maximum 3. Oral presentations of research papers and group discussions of recent literature and findings in food, nutrition and institution administration. Doctoral level.

Foreign Languages and Literatures (FLL)

The Department of Foreign Languages and Literatures offers courses under the prefix FLL, and in the following languages each of which has its own prefix: Chinese, French, German, Greek, Japanese, Latin, Russian and Spanish. These languages are listed in alphabetical order.

1000 Special Studies in Foreign Languages and Literatures. 1-10 credits, maximum 10. Special studies in areas not regularly offered, basic level.

2000 Special Study in Foreign Languages and Literatures: Intermediate. 1-5 credits, maximum 10. Prerequisite: 10 hours or equivalent in target language (applies only to language course). Special study in areas other than those offered in regular program; intermediate level.

2103 (H) Masterworks of Western Culture: Ancient and Medieval. Ideas and values of Western culture as revealed through literary, artistic, historical, and philosophical contexts from Greek, Roman, and Medieval periods.
of scale, parallax, planimetric mapping, photo interpretation and exposure to principles of computer-based forest information systems.

3002 Silvics and Field Silviculture. Prerequisites: 2134, 2773, BISC 1304 and 1403. Two-week segment of an 8-week summer field session. Field study of forest ecological relationships; examination and measurement of site productivity and stand dynamics; examination of current silviculture practices in major forest regions of North America.

3004 Forest Measurements I. Prerequisites: 2773, 1215, 1715 and STAT 2013. Four-week segment of an 8-week summer field session. An introduction to the measurements of forests, forest products, forest fires, growth, and the application of mensurational techniques to timber valuation and analysis.

3011 Harvesting and Utilization. Prerequisite: 2773. Fire- and wind-protected segment of an 8-week summer field session. Descriptive role of timber harvesting and forest products utilization in forest management including demonstrations, tours to logging operations and manufacturing facilities, and participation in field practices.

3021 Forest Surveying. Prerequisite: MATH 1715. First week of an 8-week summer field session. Introduction to forest surveying including the use of surveying equipment, descriptive field surveying, and forest road layout.

3022 Forest Ecology. Lab 3. Prerequisites: BISC 1304 and 1403 or consent of instructor. Study of the forest ecosystem, its structure and function, physical environment, biotic component and change over time and its management implications. Two weekend field trips required.

3213 Silviculture. Lab 3. Prerequisite: 3213. Principles and techniques of natural and artificial regeneration, intermediate cultural treatments, and silvicultural systems applicable in various forest cover types. Two-day field trip may be required.

3333 Fire Management. An introduction to the unique role of fire in the forestry enterprise; chemistry and physics of fire, fire weather, impact of fire on ecosystems, and systems developed to make fire-related decisions.

3443 Forest Genetics and Tree Improvement. Prerequisite: 3413. A study of mechanisms of inheritance, types of genetic variation, the development of natural populations, variation patterns, genetic improvement systems, and tree improvement methods as applied to forest and nursery management systems.

3554 Wood Properties. Lab 2. Prerequisite: 3011. Structure, properties, identification of wood; treatment of forest products.

3643 Forest Environment and Related Resources. The interrelationships and uses of the soil, wood, water, wildlife, range resources and recreational environment for man's benefit. No credit for forestry majors.

3663 Forest Measurements II. Lab 2. Prerequisites: 3600 and 1863. An introductory course in computer programming. The application of statistical methods to forestry problems including stand volume estimation, growth measurement, and volume tables. Water, wildlife, range resources and use and significance of forest yield tables in forest management. Applications of micro-computing to forest information to management systems. Study

4011* Forest Hydrology Laboratory. Lab 2. Prerequisite: 4001. An introduction to the tools, techniques to evaluate the hydrologic processes and characteristics of forest and other woodland water sheds; precipitation, runoff, infiltration, interception and transport processes. Water quality assessment in wildland settings.

4013* Forest Watershed Management. Lab 2. Prerequisite: senior standing. Hydrologic processes and characteristics of forest watersheds, effects of forest practices on water quantity and quality, management techniques for improving and protecting water resources, measurement techniques for obtaining hydrologic data. One required field trip.

5000* Research and Thesis. 1-6 credits, maximum 2. Open to students working for a Master of Science degree in forest resources.

5003* Productivity of Forest Stands. Lab 2. Prerequisites: 3223, AGRN 2124, STAT 5013 or equivalent. Integrated study of the ecological, physiological, and genetic factors controlling the productivity of forest stands. Analysis of natural, economic and social factors influencing forest cultural treatment of forest stands. Tree and stand response to silvicultural manipulation.

5010* Graduate Seminar.1 credit, maximum 2. Preparation and presentation of new and current ideas in forest land management and research techniques for their investigation. Required for the Master of Science degree.

5020* Advanced Forestry Problems. 1-3 credits, maximum 9. Individual problems in advanced forestry subject-matter appropriate to students with capability at the master's level.


5043* Forestry Research Methods. Methods used in forestry research: choice of biological materials and species; experimental design in forestry, analysis of forest data and interpretation of results for integrated forest.

5143* Economics of Multiple Use of Forests. Prerequisite: 3430. Application of capital theory, production economics, welfare and conservation criteria and related developments in theory and analytical models to decision-making in the management of public, private forest resources for combination of timber, water, wildlife, range, recreation and other environmental values.

5753* Forest Genetics. Prerequisites: 3443 and ANSI 3423 or AGRN 3553. Patterns in forest tree populations; estimation and application of genetic parameters to developing improved tree populations. Development of selection indices and experimental design as related to applied tree breeding programs.

5762* Forest Tree Breeding. Prerequisite: 3443. The application of silvicultural and genetic principles to the commercial production of genetically improved forest trees.

5813* Land Use and Water Quality. Prerequisites: a basic hydrology class, general chemistry. Nonpoint source pollution; relationships between land use and water quality with an emphasis on forestry, mined land, agriculture, and urban land uses. Focus on current research.

5853 Introduction to Analysis of French Literature. Prerequisite: 20 hours of French or equivalent. Close reading of shorter texts in a variety of literary genres, with presentation of French versification and literary terminology.

1115 Elementary French I. Lab 1. 1/2 hour. Main elements of grammar and pronunciation, with work on the four basic skills of listening, comprehension, speaking, reading and writing.

1225 Elementary French II. Lab 1 1/2. Prerequisite: 1115 or equivalent. Continuation of 1115.

1202 Accelerated Intermediate French. Prerequisite: departmental placement test. Rapid overview of basic French grammar. Designed for incoming first-year students with enough previous French to test out of 1115, but not required for second-year courses.

2112 Intermediate Reading and Conversation I. Lab 1. Prerequisite: 1225 or equivalent competence. (May have been gained in high school.) Reading and discussion of simpler French texts, mostly cultural. May be taken concurrently with other 2000-level French courses.

2113 Intermediate French I. Lab 1. Prerequisite: 1225 or equivalent competence. (May have been gained in high school.) Review and further presentation of grammar and pronunciation; comprehension; construction of sentences; and expansion emphasis on writing. May be taken concurrently with other 2000-level French courses.

2232 Intermediate Reading and Conversation II. Lab 1. Prerequisite: 2112 or equivalent competence. (May have been gained in high school.) Reading and discussion of more advanced French texts, mostly literary. May be taken concurrently with other 2000-level French courses.

2233 Intermediate French II. Lab 1. Prerequisite: 2113 or equivalent competence. (May have been gained in high school.) Continuation of 2113. May be taken concurrently with other 2000-level French courses.

3013 French for Reading Requirements. Prerequisite: graduate standing or consent of instructor. Translation of French readings into English.

3073 (I) French Conversation. 20 hours of French or equivalent. Colloquial speech, with discussion of French newspapers and magazines. Practice in brief public address in French.

3203 Advanced Written Expression. Lab 1. Prerequisite: 20 hours of French or equivalent. Practice in composition and stylistics, designed to bring students up to a high level of proficiency in writing. May be taken before or after 3213.

3213 (I) Advanced Grammar. Lab 1. Prerequisite: 20 hours of French or equivalent. May be taken before or after 3203.

3343 Business French. Prerequisite: 20 credit hours of French or equivalent. Applied French for students in commercial and technical fields. Overview and strategies of business and economic climate in France.

3463 Advanced Diction and Phonetics. Lab 1. Prerequisite: 20 credit hours of French. Required course for teacher certification. French speech sounds and intonation patterns, with practice to improve the student's pronunciation.

3853 Introduction to Analysis of French Literature. Prerequisite: 20 hours of French or equivalent. Close reading of shorter texts in a variety of literary genres, with presentation of French versification and literary terminology.
General Engineering (GENEN)

4010 Selected Design Project. 2-4 credits, maximum 4. Prerequisite: senior standing in general engineering. Capstone design project through independent application of engineering principles and concepts from disciplines covered in earlier course work.

5000 Thesis. 1-6 credits, maximum 6. Prerequisite: approval of major professor. Thesis or report.

5030 Engineering Practice. 1-2 credits, maximum 12. Professionally supervised engineering problem involving authentic projects for which the student assumes a degree of professional responsibility. Activities must be approved in advance by the student's advisor and may consist of engineering experience on-campus or off-campus or both. Periodic reports both oral and written required as specified by the advisor.

5110 Seminar. 1-6 credits, maximum 6. Prerequisite: approval of major professor. Independent or guided study in a topic area selected to enhance a student's program.

6000 Research and Thesis. 1-30 credits, maximum 12. Prerequisites: consent of graduate committee and approval of student's advisory committee. Independent research under the supervision of a member of the graduate faculty for students pursuing work beyond the master's level.

6110 Advanced Study. 1-12 credits, maximum 12. Prerequisite: approval of major professor. Independent or guided study in a topic area selected to enhance a student's program.

General Technology (GENT)

1031 Personal and Occupational Guidance. Orientation to occupations and personality development and leadership training. Graded on pass-fail basis.


1113 Essentials of Mechanical and Architectural Drafting. Lab 3. Mechanical and architectural drafting conventions and practices in business and industry. Fundamental drafting skills and techniques; interpretation and utilization of graphic media and engineering drawings in additive technological communications.

1153 Engineering Design Graphics with CAD. Lab 6. Sketching and using CAD system to generate engineering drawings. Analysis of the ANSI standards. Interpretation of typical industrial drawings. Students with two years high school or one year practical ANSI drafting/CAD may substitute an advanced course in mechanical design technology with consent of their advisors.

Genetics (GENE)

5102 Molecular Genetics. Prerequisites: BIOCH 3653 or BISC 3014 and one course in genetics or consent of instructor. An introduction to molecular genetics on the graduate level.

1113 (GEN) Geographic Behavior. The major organizing concepts of economic and cultural geography. Man's geographic behavior in terms of his spatial realization of the earth's surface and his development of regional and political systems.

2253 World Regional Geography. The world's major culture regions, with emphasis on geographic aspects of contemporary economic, social, and political relationships with the physical environment.

3023 Climatology. Characteristics and distribution of weather, climate, and political geography. The world's major culture regions, with emphasis on geographic aspects of contemporary economic, social, and political relationships with the physical environment.

3253 (S)Urban Geography. Locational aspects of urbanization: functions of and relations among cities and between cities and rural areas; internal structure of urban areas.

3313 (S)Political Geography. Major political structures and geographical implications of locations, boundaries, shape, area, culture and natural environment of nations and states. Spatial analysis of voting behavior.

3413 (S)Historical Geography. The reconstruction of the historical landscape of selected regions from the geographical point of view. Spatial relationships recorded in journals and literature of the past in the light of the present. These materials related to present through sequential developments of patterns of spatial organization.

3653 (L) Physical Geography. Processes significant to the spatial structure of economic systems. Production, consumption and exchange activities examined in regard to location, distribution, aerial differentiation and spatial interaction patterns. Attention given to processes of change as well as to steady states.

3713 Cultural Geography. Geographical impact of human cultures. Emphasis on the concepts of social space, density, crowding, territory, diffusion, migration, environmental perception and cultural landscape.

3723 (L) Geographic of Western Europe. Location and analysis of natural, economic and cultural features of Western Europe.
TSEU (LS) Geography of East Europe and USSR: A regional analysis encompassing cultural, economic and physical features.

3743 (LS) Geography of South America: Areal distribution and analysis of physical, cultural and economic features of South America.

3753 (L) Geography of Asia: Systematic interpretation of significant spatial patterns of man and natural environment, including population and urbanization. Focus on both Western civilization and its interaction and influence on the rest of the world.

3772 Geography of Middle America: A real distribution and analysis of physical, cultural, and economic features of Middle America.

4033 Natural Hazards and Risk Assessment: Human perception of and response to extreme natural events (such as tornados, floods, earthquakes, drought and disease). Examination of mitigation and relief procedures at local, state and national levels.

4043 Applied Climatology: Prerequisite: 3023, 3033 for consent of instructor. Applications of atmospheric knowledge to human endeavors such as agriculture, water management, and architecture. Use of real-time atmospheric data to solve problems.

4123 Geographical Aspects of Urban Planning: Prerequisite: 3123. Spatial aspects of urban planning, development of planning theory, various planning tools, and specific problem areas such as urban renewal and urban transportation.

4133 Land and Resource Regulation: Private and public land use controls, water, mineral law, public land law and legal issues related to resource development.

4143 Geography of Travel and Tourism: A systematic and comprehensive analysis of the geographical dimensions of tourism, illustrating the relevance of a spatial perspective to tourism planning, development, and management. Economic, social, and environmental impact of both domestic and international tourism considered.

4153 Geography of Outdoor Recreation: Analysis of patterns of outdoor recreation with an emphasis on land-use planning in park and wilderness areas. Demand forecasting methods, the analysis of the socioeconomic and spatial impacts of recreation facilities provision and visitor management practices.

4163 Geography of International Economic Systems: Prerequisite: 2253 or 3163. Emphasis on international flows of goods and services resulting from differences in comparative economic advantages. International trade and aid patterns from a geographic perspective. Resource use, transportation patterns, and levels of economic development.

4183 Regional Analysis: An introduction to methods of examining and analyzing economic dimensions of regions.


4223 (H) Geography of Music: Geographical and historical analysis of music as a cultural trait. The cultural significance of music and how it varies from place to place as well as how it helps shape the character of a place.

4313 Field Techniques and Geodata Collection: Prerequisite: STAT 2013. Modern concepts and techniques for geographical analysis and research including data acquisition and manipulation from field and secondary sources. Field Trips.

4323 Geographic Cartography: Lab 2. Use of packed computer programs to produce maps on both the printer and the plotter.

4333 Remote Sensing: Lab 2. Prerequisite: 3523 or FOR 3502 or 5133. Use of several types of sensors and imagery in solving problems. LANDSAT imagery use. Uses and limitations of data extraction techniques, manual and computer-assisted. Applications to a variety of specific problems.

4343 Geographic Information Systems: Lab 1. Prerequisite: 4323 or 3523, 5333. Emphasis on the computerization and application of various manual and computer-assisted Geographic Information Systems (GIS); sources of data, conceptual approaches, equipment, and software. Discussion of various output products, specific applications, and GIS relationships to modeling.

4413 History and Philosophy of Geography: Historical research questions and techniques, the structure of contemporary geography and its relation to other fields of study, and future prospects of geography.

4700 Geographic Regions: 1-6 credits, maximum 6. Prerequisite: consent of instructor. Specialized study of specific local and foreign regions.

4910 Topics in Geography: 1-6 credits, maximum 6. Prerequisite: consent of instructor. Specialized study of specific local and foreign regions.

4930 Readings in Geography: 1-3 credits, maximum 6. Prerequisite: consent of instructor. Directed readings on selected topics, regions, or methods in geography.

4940 Undergraduate Cooperative Education Internship: 1-6 credits, maximum 6. Prerequisites: consent of departmental adviser and consent of instructor. Practical experience in applying geographical concepts to societal problems. Students work with both agency representatives and faculty members.

4993 Senior Honors Thesis: Prerequisites: departmental invitation, senior standing, Honors program participation. A guided reading and research project on an honor's thesis under the direction of a senior faculty member, with second faculty reader, both of whom will be present at an oral defense of the thesis. Required for graduation with honors in geography.

5000 Thesis: 1-6 credits, maximum 6. Open only to students working on the master's degree in geography.

5130 Resource Geography Seminar: 1-3 credits, maximum 9. Prerequisite: consent of instructor. Spatial perspectives of selected topics in resource geography.

5140 Geographical and Historical Geography Seminar: 1-3 credits, maximum 9. Prerequisite: consent of instructor. Development and critical analysis of research and theory in cultural and historical geography.

5150 Geography of Sport, Recreation and Leisure Seminar: 1-3 credits, maximum 9. Prerequisite: consent of instructor. Spatial perspectives of topics selected in sport, recreation and leisure geography.


5303 Geographic Methodology: 9 credit hours of geography. The nature of geography and its relation to other fields of study. The scientific validity of concepts and questions used in contemporary geographical research. Strategies for development, synthesis, and communication of and use of the geographic body of knowledge.

5313 Geographical Analysis: Lab 2. Prerequisites: 3523 and one course in statistics. Application of models to geographic problem solving. Library, field techniques and data processing in geographic research contexts.

5403 Process in Geography: Prerequisite: graduate standing in geography. Review of recent literature in light of current human and physical geography research themes.

5413 History and Philosophy of Geography: Prerequisite: graduate standing in geography. Identification and evaluation of major themes in geographical research and teaching.

5433 Cultural Geography: For both prospective and experienced teachers of geography. Geography's role in the social and behavioral sciences, analysis of geographical concepts and principles of stratigraphy and their applications to field problems. Field studies undertaken in the field and in the laboratory. Field trips required.

5450 Seminar in Geography: 1-6 credits, maximum 6. Prerequisite: graduate standing in geography or consent of instructor. Specialized topics in geography.

5510 Research Problems in Geography: 1-3 credits, maximum 6. Prerequisite: consent of instructor.

5940 Cooperative Education Internship: 1-6 credits, maximum 6. Prerequisites: consent of departmental adviser and consent of instructor. Practical experience in applying geographical concepts to societal problems. Emphasis on programs in planning and geographic education.

Geology (GEOI)

1014 (L,N) General Geography: Lab 2. Introduction to the influence of geography and related earth sciences on the human environment. Emphasizes energy and mineral resources, physical and historical natural processes, and the planetary and biological evolution of earth. Lab investigations are conceptually oriented. Field trips required. No general education credit for students also taking GEOG 1114.

1114 (N) Physical Geography: Lab. 2 Composition and structure of the earth and the modification of its surface by internal and external processes. Mineral resources, sources of energy, and environmental aspects of geology. A background in precollege science and math is recommended. Field trips required.

1124 Physical Geography: Prerequisite: 1014 or equivalent recommended. The geologic story of national parks and scenic regions in North America and throughout the world.

2031 Geologic Field Investigation: Prerequisite: introductory geology. One week of required field study at sites of geological interest and significance.

2253 Geologic Palynology: Lab. 3. Prerequisites: 1114 or equivalent, CHEM 1314 or equivalent. Crystallography and systematic study of mineral groups and their genesis. Identification of minerals by physical and chemical properties. Field trips required.

2364 Elementary Petrology: Lab. 3. Prerequisite: 2254. Origin, occurrence and classification of rocks; hand specimen identification. Field trips required.

3004 Earth Science for Teachers: Prerequisite: 1114. Teaching natural earth systems and their environmental impact. Use of an adaptation approach in organizing, presenting, and evaluating earth science concepts in the curriculum.

3014 Structural Geology: Lab. 3. Prerequisite: 1124, MATH 1613 and PHYS 1114. Behavior of earth materials during various deformational processes and analysis of the resulting structural features. Field trips required.

3023 Geology for Engineers: Lab. 1. Prerequisite: junior standing in engineering. Physical geology with emphasis on applications to civil engineering. Field trips required.

3033 Stratigraphy: Lab. 3. Prerequisite: 1224. Principles of stratigraphy and their applications. Laboratory emphasizes realistic practical problems undertaken in the field and in the laboratory. Field trips required. Nonmajors may require a graduate credit.

3073 Geomorphology: Lab. 3. Prerequisites: 1224 or consent of instructor. Study of land forms and the processes that formed them, using topographic maps, air photos, remote-sensed images, soils maps and field techniques. Field trips required.

3103 Paleontology and Biostatigraphy: Lab. 3. Prerequisite: 2123 or BISC 3114 or equivalent. Morphology and systematics of major invertebrate macro- and microfossil groups. Basic concepts of biostatigraphy. Field trips required.
Master’s thesis in geology. Approval of graduate committee. Work toward departmental honors in geology under the direction of a senior faculty member. Research program ending with an honors thesis.

Field Geology. Lab 6. Prerequisites: 2364, 3014, 3033, 3073. Six weeks of field methods in geology including mapping by pace and compass, plane table and aerial photography. Required of all geology majors. Transportation and room and board fees required.

Geology Colloquium. 1 credit, maximum 8. Prerequisites: junior standing. Lectures and demonstrations of timely interest in geology. Field trips may be required.

Petroleum Geology. Prerequisites: 3014 and 3033. Origin, migration, and accumulation of petroleum, requirements for source rock, reservoir rock and traps. Structure and stratigraphy of selected oil fields. Field trips required.


Hydrogeology I. Lab 3. Prerequisites: 4453. Water cycle with emphasis on surficial, ground water, water quality, pollution, and water law. Interrelations between the sciences and the humanities.

Hydrogeology II. Lab 3. Prerequisite: 4453. Physical ground-water systems. Realistic problems to acquaint students with ground-water occurrence and movement. Geologic, geophysical, hydraulic, geochemical, and other field techniques used to define a ground-water field system. Required.

Sedimentology. Lab 3. Prerequisites: 3546, senior standing. Sediments, sedimentary processes and sedimentary environments, geometry and internal features of sediments. Field trips required.

Economic Geology. Lab 3. Prerequisite: 2364. Descriptive geology origin, economic utilization of metallic and nonmetallic minerals and rocks. Field trips required.

Special Problems in Earth Science. 1-8 credits, maximum 8. Prerequisites: 25 hours of geology and permission of instructor. Individual designed study projects involving an honors thesis under the direction of a senior faculty member, with second faculty reader and oral examination. Required for graduation with departmental honors in geology.

Thesis. 1-6 credits. maximum 6. Prerequisite: approval of graduate committee. Work toward master’s thesis in geology.

Problems in Economic Geology. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Individually-designed problems in economic geology. Field trips may be required.

Problems in Hydrogeology. 1-4 credits, maximum 6. Prerequisite: 4453. Advanced problems in hydrogeology with emphasis on quantitative methods. Field trips may be required.

Problems in Engineering Geophysics. 1-3 credits, maximum 3. Prerequisite: consent of instructor. Advanced problems in engineering geophysics with emphasis on problem solving. Field trips may be required.

Advanced Paleontology. Lab 3. Prerequisite: 3013 or equivalent. In-depth study of selected fossil groups with emphasis on marine micro-paleontology. Student projects on assigned fossil groups with presentation both orally and in writing. Field trips required.

Advanced Structural Geology. Lab 3. Prerequisite: 3014. The theoretical, x-ray diffraction and descriptive approach to structural geology; includes correlations between stress field, rock type, and structural style in petroleum exploration. Individual library, laboratory and/or field projects.

Advanced Map Interpretation. Lab 3. Prerequisite: 3014. Geometric techniques and analysis of complex structural terrain. Excursion of geological history by study of selected maps. Field trip required.


Subsurface Geologic Methods. Lab 3. Prerequisites: 3014, 3033. Use of subsurface geologic information from cores and well logs to prepare maps and identify oil and gas prospects. Field trip required.

Applied Geophysics. Lab 3. Prerequisite: PHYS 1214. Principles of exploration geophysics with emphasis on the application of ground and mineral industries. Field trips required.

Advanced Well Log Analysis. Lab 3. Prerequisites: 3033 or 3124. The geologic interpretation of a variety of well logs, emphasizing as well as quantitative methods. Some exercises involve concurrent interpretation of well logs and core samples, or well logs and bit cuttings.


Geochemistry. Prerequisites: 2364 and general chemistry. Application of chemical principles to geological processes. Emphasis on chemical sedimentology, stable isotopes, and Eh-pH diagrams.

Engineering Geophysics. Lab 3. Prerequisites: 3014 or 3024; PHYS 1214 or equivalent. Geologic aspects of problems associated with environmental engineering, ground-water pollution and regional and urban planning. Problem assessment and field methods. Two required field projects include geophysical surveys using resistivity and seismic refraction methods. Field trip required.

Advanced Hydrogeology. Lab 3. Prerequisites: 4453, COMSC 2113 or equivalent, MATH 2265 and 2365 or equivalent. Advanced quantitative techniques used to address ground-water management and pollution. Advanced field and laboratory techniques as well as management and chemical transport models applied to actual field problems and case studies. Field trips required.

Environmental Geology. Prerequisite: 3073. Application of principles of geology to environmental studies and to land and resource planning and development. Methods of acquiring, compiling and analyzing geologic information for the purposes described above, with emphasis upon environmental geologic mapping. Field trips required.

Organic Geochemistry. Lab 3. Prerequisite: introductory chemistry. Introduction to some environmental aspects of organic geochemistry. Soils and sediments as pollutant receptors, sources of pollutants and selected aspects of environmental health.


Basin Analysis. Lab 1. Prerequisites: 3546, 5203, 5255, 5265, 5363. Team-taught course. Introduction to basin analysis, basin modeling, petroleum systems, basin models. Emphasis on facies analysis, petrology, diagenesis, and structural evolution. Field trips required.

Advanced Studies in Geology. 1-4 credits, maximum 8. Prerequisite: consent of instructor. Individual library, laboratory and/or field projects on selected areas of geology not covered by existing courses. Field trips may be required.

German (GRMN)

Elementary German I. Lab 1-1/2. Main elements of grammar and pronunciation, with the work on the four basic skills of listening comprehension, speaking, reading and writing.

Intermediate German I. Lab 1-1/2. Prerequisite: 1115 equivalent. Continuation of 1115.

Intermediate Conversation and Composition I. Lab 1. Prerequisite: 1225 or equivalent competence. (May have been gained in high school; Colloquial speech patterns and grammar. May be taken concurrently with other 2000-level German courses.

First Readings in German. Prerequisite: 1225 or equivalent competence. (May have been gained in high school; Colsloquial speech patterns and grammar. May be taken concurrently with other 2000-level German courses.

Advanced German Grammar and Composition. Lab 1. Prerequisite: 20 credit hours of German or equivalent. Practice in original composition in German, Problematic points of German grammar and style.

Orientation to Internship Abroad. Prerequisite: 20 hours of German or equivalent. Preparation for initial international group in a German-speaking country. Culture, civilization, and contemporary conditions, and communicative support for accepted for international cooperative education program.

German for Reading Requirements I. Reading in the humanities and the sciences. Translation from German to English.

German for Reading Requirements II. Prerequisite: 3013 or equivalent. Intermediate and advanced reading in the humanities and sciences. Translation from German to English.

Backgrounds of Modern German Civilization. Prerequisite: 20 credit hours of German or equivalent. Historical, cultural, political and literary trends in the formation of German civilization.

Business German. Lab 1. Prerequisite: 20 credit hours of German or equivalent. Introduction to business practice and economic environment in Germany. Study of specialized vocabulary.

Advanced Diction and Phonetics. Lab 1. Prerequisite: 15 credit hours of German or equivalent. Required course for teacher certification. German speech sounds and intonation patterns. Practice to improve the student’s pronunciation.

Advanced Conversation. Lab 1. Prerequisite: 3013 or equivalent. Colloquial speech forms and sentence structure. Practice in brief public address in German.

Advanced Grammar and Composition. Lab 1. Prerequisite: 20 credit hours of German or equivalent. Practice in original composition in German, Problematic points of German grammar and style.

Internship Abroad. Lab TBA. Prerequisite: 3902. Practical studies in a German-speaking country. Supervised research papers and reports, and oral testing, during and following the practicum.

Survey of German Literature I. Prerequisite: 20 credit hours of German or equivalent. German literature from the beginning to 1785.

Survey of German Literature II. Prerequisite: 20 credit hours of German or equivalent. German literature from 1785 to the present.

The Age of Goethe. Prerequisite: 20 credit hours of German or equivalent. Principal figures in German Classicism and Romanticism.

German Theater. Prerequisite: 20 credit hours of German or equivalent. Supervised research papers and reports, and oral testing, during and following the practicum.

Survey of German Literature I. Prerequisite: 20 credit hours of German or equivalent. Main currents in German literature from Naturalism until present day.

Studies in German. 1-3 credits, maximum 9. Prerequisite: 20 credit hours of German or equivalent competence. Reading and discussion of vital subjects in German.
Graduate (GRAD)

5880* Graduate Traveling Scholar. Credit will vary depending on the program of each traveling scholar. Maximum 12. Prerequisite: graduate-degree candidacy. Enrollment of graduate traveling scholars in academic research courses.

5990 Graduate Research and Teaching Practicum. 1–6 credits, maximum 12. Prerequisite: graduate standing. Graduate-level internship program for public administration, service or research. Blends the theoretical and absolute phase of the academic with practical on-the-job experience.

6010 Research or Intern Practicum. 1–9 credits, maximum 12. Prerequisite: graduate standing. Graduate-level internship program for research and teaching techniques and procedures. Graded on pass-fail basis.

Greek (GREEK)

1113 Elementary Classical Greek I. Grammar and vocabulary of Ancient Greek.

2223 Elementary Classical Greek II. Prerequisite: 1113 or equivalent. A continuation of 1113. Grammar and readings of classical Greek authors.

2213 Intermediate Readings. Prerequisite: 2113 or equivalent. An introduction to a variety of classical authors to increase reading facility and grammatical comprehension.

3300 Advanced Readings. 1–6 credits, maximum 9. Prerequisite: 2213. Prose authors, epic poetry, drama, Koiné Greek and religious texts.

Health (HEALTH, PHYSICAL EDUCATION AND LEISURE)

2013 Foundations in Health Education and Wellness. Analysis of major concepts, e.g., degenerative disease, human exercise capacity and health behavior.

2220 Laboratory and Clinical Experiences in Health. 1–3 credits, maximum 3. Prerequisite: 2213. Directed observation and supervised laboratory and clinical experiences in appropriate teacher education and wellness program areas.

2602 First Aid. Lab. 2. A competency- and performance-based first aid course.

2603 Total Wellness. Knowledge, attitudes and practices related to self-direction of health behavior for total well-being.

2653 Applied Anatomy. Action and location of individual muscles and muscle groups. Anatomy as applied to a living person. Common anatomical injuries and diseases will be presented together with the approach to their treatment.

3663 Care and Prevention of Athletic Injuries. Prerequisite: 2653. Symptoms of common athletic injuries, their immediate treatment and care.

3613 Community Health Programs. Structure and function of health agencies and programs in the total community.

3623 School Health Programs. Prerequisite: 2603. The identity and relationships of school health instruction, services and environments.

3653 Advanced Care and Prevention of Athletic Injuries. Lab. 2. Prerequisite: 2633. Advanced techniques applied to athletic injuries.

4433 Program Design in Health Promotion. Theory and practice of effective health promotion with emphasis on ethnicity, behavior, learning theory, development levels and cultural background.

4500 Total Health Behavior. Prerequisites: FNIA 1113, PHSI 3113. Health assessment and intervention strategies with focus on diet, weight management, stress, substance abuse, community health and other current health issues.

4643 Methods in School and Community Health Education. Conceptual and value approach to health education through a variety of teaching methodologies.

4783 Health and Aging. Prerequisite: 2603. An in-depth study of physiological aspects, special health needs, chronic illnesses, delivery systems and services for the aging.

4902 Athletic Therapy Modalities. Lab 1. Prerequisite: 4902. Commonly used therapeutic devices used for training rooms.

4983 Human Electrocardiographic Interpretation. Prerequisite: PHSI 3113. Knowledge concerning the collection and interpretation of the electrocardiogram (ECG) and its relationship to heart anatomy, physiology and electrophysiology.

4992 Athletic Rehabilitation. Lab 1. Prerequisites: 2633, 2663. Scientific methods in conditioning athletes and rehabilitation of injured athletes. Practical rehabilitation will be under the direct supervision of the OSU medical faculty.

4993 Strategies in Teaching Human Sexuality. Prerequisite: 2603. Development of techniques, strategies, and methodologies for teaching sex education in schools and/or community settings.


5053 Research Design in Health, Physical Education and Leisure. Prerequisites: PSYCH 5303 or STAT 5013 or equivalent. Research design with applicability toward HPEL. Provides the student with a conceptual understanding of theory, tools and processes involved in designing research studies.

5063 Statistical Computing and Proposal Writing. Prerequisite: 5053. Instruction in the use of SPSS-x and BMDP software using WYLBUR. Preparation of research proposals for students in health, physical education and leisure.

5073 Sport: Psychological Aspects. Psychological foundations of sport emphasizing performance enhancement by athletes through psychological training techniques.

5143 Health Promotion and Marketing. Prerequisite: HLTH 4333. Conceptual framework in dealing with health topics as they relate to populations. Development and functioning of mental retardation. History, administration of health, physical education and leisure programs.

5153 Legal Aspects of Health, Physical Education and Leisure Sciences. The law: its application and interpretation as it applies to teachers, coaches and administrators of health, physical education and leisure sciences programs.

5163 Field Problems in Health, Physical Education or Leisure Sciences. 1–6 credits, maximum 6. Individual investigations.

5173 Practicum for Human Service Professionals. A wilderness-based program for educators and human service professionals utilizing Colorado Outward Bound School experiential educational model for adapting traditional teaching methodologies.

5463 Issues in Therapeutic Recreation. Prerequisite: LEIS 2433 or professional experience in therapeutic recreation. Current issues in therapeutic recreation with emphasis on accreditation, certification, licensure, quality assurance and ethics.

5473 Leisure and Aging. Prerequisite: LEIS 2433 or consent of instructor. Overview of the leisure needs and services for older adults with emphasis upon the delivery system and leisure interventions.

5483 Therapeutic Recreation for the Physically Disabled. Prerequisite: LEIS 3483 or consent of instructor. Role of therapeutic recreation in the treatment and rehabilitation of individuals with physical disabilities with emphasis upon terminology, prognosis, etiology of specific disabilities program development and assessment.

5493 Recreation for the Emotionally Disturbed and Mentally Retarded. Prerequisite: LEIS 3843 or consent of instructor. Leisure services for the emotionally disturbed and mentally retarded with emphasis upon prognosis, treatment and methodologies of recreation programs.

5513 Organization and Administration of School and Community Health Education. Basic functions and principles of organization and administration pertaining to both school and community agencies.


5553 Psychomotor Development and Assessment. Analysis and assessment of typical and atypical psychomotor development. Theoretical knowledge and practical experience in understanding and assessing psychomotor development and function.

5613 Cardiac Rehabilitation. Prerequisites: HLTH 2655 and PHSI 3113 or equivalent. Factors involved in cardiovascular disease. History, implementation and administration of cardiac rehabilitation programs.

5663 Physical Education for the Learning Handicapped. Characteristics, psychomotor development and functioning of mentally retarded, learning disabled and emotionally disturbed individuals. Knowledge base and practical experience for providing assessment, adaptation and programming services for individuals with learning handicaps.

5723 Curriculum Development in Health, Physical Education and Leisure Services. Identification and analysis of curriculum theories with emphasis on traditional and innovative approaches to curriculum design for programs in HPEL.

5733 Motor Learning. Research in psychology and physical education relevant to the understanding of the nature and basis of motor skill learning.

5763 Administration of Health, Physical Education, Leisure and Sports Programs in Higher Education.
Activities.

206 credit for students with credit in HIST 1103. of six credit hours of American history and the State Regents requirement of six credit

ity, and uniqueness of United States history to allow transfer students to fulfill general
tory to allow beginning sessions on interpretation of primary sources in translation.

1613 (H)Western Civilization to 1500. Lab 1. History of western civilization from ancient world to Reformation. Laboratory discussion sessions.

1623 (H)Western Civilization After 1500. Lab 1. History of western civilization from Reformation to the present. Requires completion of the General Education requirements and six credits of general education courses. Same course as HIST 1103.

1632 (H)Modern Europe, 1815-1814. Impact of modernization on the character of European society. Factors that transformed the Continent into a battle ground in the 20th century.

2323 Oklahoma History. Early exploration and establishment of Indian Territory; the rise and demise of the Five Indian Nations; and the organization and development of the 41st state to the present. Required of all candidates for teacher's licensure/certification in social studies.

3003 (I,S)Soviet Union; History, Society and Culture. A comprehensive view of the Soviet Union, stressing those issues in the political, economic, geographical and cultural spheres which are most relevant to the development of life in the present and future. Same course as POLS 3003 and RUS 3003.

3013 (H)Ancient Near East. The ancient world from the beginnings of recorded history through the Pharaonic, Mesopotamian, Hebrew and Persian civilizations, in addition to the minor civilizations of the area.

3023 (H)Ancient Greece. The Greek world from the Bronze Age through Alexander the Great with special emphasis on politics, culture and institutions of Classical Greece.

3033 (H)Ancient Rome. Political, social, economic and cultural history of the Roman Republic and Empire.

3153 (H)Russia to 1861. Political, institutional, social and economic development of Russia from the Kievan period to the Great Reforms.

3163 (H)Russia Since 1861. Modernizations of Russia in the 19th and 20th centuries. Great reforms and their effects and the 1917 revolutions and their consequences.

3173 (H)Eastern Europe, 1000-1800. Formation of the eastern European nations and the influence of Rome, Byzantium, the Ottoman Empire, Russia, Austria and Prussia on them.

3183 (H)Eastern Europe Since 1800 Formation and impact of nationalism, industrialization, and power politics on the peoples of eastern Europe.

3203 (H)Early Middle Ages, 325-1000 Economic, social, cultural and religious developments in Byzantium, Islam, and the Germanic West, which succeeded imperial Rome.

1493 American History Since 1865. May be taken independently of HIST 1483. Development of the United States including the growth of industry and its impact on society and foreign affairs. Satisfies, with POLS 1013, the State Regents requirement of six credit hours of American history and American government before graduation. No credit for students with credit in HIST 1103.

3233 (H)Medieval Europe, 1000-1350. High and Late Middle Ages: Ages in the West with emphasis on political, social, economic and intellectual development.

3243 (H)Reformation and Reform, 1350-1618. Social, cultural, intellectual, political, economic and religious developments which led to the flowering of modern western civilization.

3253 (H)Early Modern Europe, 1618-1815. Economic, social, political, cultural, intellectual and religious transformation of Europe from the opening of the Thirty Years War to the Congress of Vienna.

3263 (H)Modern Europe, 1815-1914. Impact of modernization on the character of European society. Factors that transformed the Continent into a battle ground in the 20th century.

3273 (H)Modern Europe Since 1914. Origins, character and impact of the first World War; the rise of the Fascist, Communist, and Nationalist; the capitalist and socialist; development of the modern age.

3313 The Old Regime and the French Revolution, 1569-1815. History of France from the outbreak of the religious civil wars in 1559 to the Revolution and Napoleon. Evolution of an agrarian, fragmented society into a strong nation-state.

3323 Modern France, 1815-Present. French politics, economy, society, and culture from the defeat of Napoleon to France's post-WWII rebirth. An examination of France's political, economic, and social development since the era of Napoleon.

3333 (H)History of the Second World War. Problems leading to World War II with their international implications and consideration of the war years.

3353 (H)Imperial Spain, 1450-1580. The rise and fall of the world's first modern imperial power, from Spain's emergence under the Catholic Kings to its fall in the 16th century. The Spanish Empire and its impact on world affairs. Special emphasis on political, intellectual and cultural developments.

3363 (H)Modern Europe, 1815-1914. The rise of the Russian Empire and its impact on the world. Special emphasis on political, economic, and cultural developments.

3373 (H)Modern European History Since 1914. The rise of the Russian Empire and its impact on the world. Special emphasis on political, economic, and cultural developments.

3383 (H)World History Since 1914. The rise of the Russian Empire and its impact on the world. Special emphasis on political, economic, and cultural developments.

3393 (H)History of Latin America: Modern Period. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.

3443 (H)Modern Latin America. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.

3453 (H)Colonial Latin America. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.

3463 (H)Modern Latin America. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.


3483 (I,S)Renaissance and Reformation, 1550-1688. The rise of the modern world in Europe. Special emphasis on political, economic, and cultural developments.

3493 (I,S)Modern Latin America. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.

3503 (S)Modern Latin America. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.

3513 (H)Modern Latin America. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.

3523 (I,S)Modern Latin America. The rise of the Latin American nations since 1914. Special emphasis on political, economic, and cultural developments.
3153 Turf Management. Prerequisites: 1013, AGRON 2124 and 2 hours plant science. Selection, establishment and maintenance of grass species and other plant materials for special use areas.

3213 Fruit and Nut Production. Prerequisite: BISC 1403. Commercial production of fruits and nuts, with emphasis on pecan, peach, apricot, strawberry and blueberry. A two-day field trip is required.

3312 Landscape Plant Materials. Lab 2. Prerequisites: BISC 1114 or 1403. Identification, adaptation, tolerance and use of deciduous trees, shrubs, vines and ground covers in the landscape.

332* Landscape Plant Materials II. Lab 2. Prerequisites: 3312 and BISC 1114 or 1403. Identification, adaptation, tolerance and use of evergreen trees, shrubs, vines and ground covers in the landscape.

343* Commercial Vegetable Production. Prerequisites: 1013, AGRON 2124 and BISC 1403. Commercial production and marketing of vegetable crops.

3544 Nursery Production. Lab 2. Prerequisites: 3212 and 3322, AGRON 2124, BOT 3463, PLP 3344 and any course in entomology. The propagation, production, management and marketing of commercial nursery stock.

3553 Advanced Floral Design and Marketing. Lab 2. Prerequisite: 2652. Preparation, arrangement, care and marketing of floral products in the retail shop, advanced designing, pricing, wholesale purchasing and retail selling.

4212 Vocational Horticulture. Lab 4. Prerequisite: concurrent enrollment in AGED 4200. An overview of horticulture including floriculture, ornamentals, vegetables, landscape design, fruits and nuts as they relate to vocational agriculture programs. Taken in conjunction with AGED 4200.


4453 Turfgrass Science. Lab 3. Prerequisite: 3153. Investigation of environmental stresses imposed on turfgrass and the interrelationship between stress and the cultural practices of turfgrass.

4670* Horticultural Seminar. 1-2 credits, maximum 2. Required of horticulture seniors, except those choosing landscape options. Topics in horticulture, career exploration and job placement.

4774 Applied Landscape Planning. Lab 4. Prerequisite: 3312 or 3322 or consent of instructor. Concepts of landscape planning. Preparation of specifications, estimates and bids. Emphasis on residential landscapes and use of plant materials. No credit for students in the landscape architecture and landscape contracting programs.

4960* Horticultural Problems. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Problems related to pomology, oleicrulture, nursery production, landscape design, or the culture, sales and arrangement of flowers.

5000* Research and Thesis. 2-6 credits, maximum 6. Research on thesis problems required of graduate student. 2nd year's degree candidates.

5110* Advanced Horticultural Problems. 1-12 credits, maximum 20. Selected research problems in horticulture, floriculture, landscape design, nursery production, oleicrulture, and pomology.

5123* Horticulture Science. Prerequisites: BOT 3463, BOT 3460 or equivalent or senior standing. The basics of applied physiological responses of plant growth as related to horticultural plants. Includes hormonal, genetic and environmental influences on horticultural plant growth and production.

523* Experimental Horticulture. Methods of conducting research with horticultural crops including organization and plans, field plot techniques and analysis of data.


5422* Flowering and Fruiting in Horticultural Crops. Prerequisite: BOT 3463. Environmental, chemical and cultural factors affecting the flowering and fruiting of horticultural crops.

5432* Postharvest Physiology. Prerequisites: BOT 3463 and 3460. Physiological causes for postharvest changes in horticultural crops (ripening and senescence) and the basis for certain postharvest treatments (prolonging the harvest, controlled atmosphere storage, refrigeration, and packaging techniques). Commodity-specific postharvest phenomena.


2233 Multi-unit Food Operations. Lab 4. Prerequisites: 3111 and 3123. Experience in operation of multi-unit food services in a variety of work stations.

3103 Institutional Furnishings. Furnishings other than mechanical equipment: furniture, textiles, rugs, and linens.

3111 Preprofessional Experience. Prerequisite: sophomore standing or preprofessional experience. The student's future professional role and responsibilities; business procedures; employer, employee and guest relationships in the hospitality industry. Work procedures and job performance evaluations; job applications and resumes.

3133 Science of Food Preparation. Lab 2. Prerequisite: BOT 3460 or equivalent. The scientific basis of food preparation. Same course as FNA 3133.

3213 Management in Hospitality and Food Service Systems. Prerequisite: a course in economics. Function and methods of management as related to the hospitality and food service industries. Same course as FNA 3213.

3363 Hotel-Motel Front Office Procedure. Lab 2. Prerequisites: junior standing, 6 credit hours in accounting. Various jobs in the hotel-motel front office and the procedures involved in registering, accounting for, and checking out guests. The organization, duties and administration of the hotel/motel housekeeping as related to the front desk.

3440 Hospitality Work Experience. 1-6 credits, maximum 6. Supervised experience in an approved work situation related to a future career in the hospitality industry.

3473 Mechanical Equipment and Building. Illumination, effect of noise and vibration, ventilation, air conditioning, food preparation and food service equipment utilized in the hospitality industry will be evaluated. Emphasis on maintenance, repair, how it works and what it does. Energy utilization and conservation stressed.

3553 Purchasing in Hospitality and Food Service Systems. Lab 2. Prerequisite: 3313 or concurrent enrollment. Procurement of food and nonfood materials in food service, independently and related industries. Same as FNA 3553.

4103 Legal Aspects of Hotel and Restaurant Management. Research and problems concerning leasing and the legal responsibilities of innkeepers and restaurateurs. Labor relations, collective bargaining and O.S.H.A. restraints considered in relation to operations.

4123 Hotel and Restaurant Promotion and Sales. Prerequisite: junior standing. Fundamentals of sales promotion, the sale department, publicity, methods of soliciting group business. Versatility, cost, timing and results of use of the advertising media.

4333 Food, Beverage and Labor Cost Controls. Prerequisites: ACCTG 2203, junior standing. Food, beverage and labor cost control systems associated with hospitality industry operations. Same course as FNA 4333.

4365* Quantity Food Production Management. Lab 6. Prerequisites: FNA or HRAD 2123, 3133, 3553, and a course in mathematics or consent of instructor. Organization, purchasing, preparation and service of food for large groups. Same course as FNA 4365.

4413 Hotel Operation Systems Analysis. Conceptual analysis of hotel operation systems such as lodging, food and beverage service, sales, property management, personnel, accounting and front office. Investigation of internal and external functional departments.

4473 Institutional Food Service Layouts and Equipment. Prerequisites: 3103, 3473, 4363. Space allocations and equipment arrangements will be studied using time-space, flow and efficiency. Specifications for institutional equipment.

4483 Hospitality Facilities Layout. Lab 2. Prerequisite: 4473, GENAD 2103. The use of the AutoCAD System in the planning process, space allocation and arrangement of furnishings, equipment and utilities in a hospitality facility.

4573 Institution Organization and Management. Prerequisites: 3553, 4363 or FNA 3553, 4363. Organization of personnel and resources in a food service institution and the techniques required by the manager. Lab consists of work experiences in Residence Halls Foods Service. Same course as FNA 4573.

4693 Institutional Administration. Lab 3. Prerequisite: 4573 or concurrent enrollment. Supervised administrative responsibilities in food service and related institutions such as hotels. Same course as FNA 4693.

4723 Survey of Beverages in the Hospitality Industry. Prerequisite: senior standing. History, classifications, production techniques and quality factors of beverages such as wines, distilled spirits, beers, and non-alcoholic beverages.

4850 Special Unit Course in Hotel and Restaurant Administration. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Special unit related to specific problems in the hospitality industry.

4863 Multi-unit Food Service Management. Prerequisites: 4853, MGMGT 3313. Study of policy and procedure influencing the human side of hospitality management. Management decision of multi-unit franchising, finance, menu strategy and marketing.

Industrial Engineering and Management (INDEN)

2903 Introduction to Industrial and Systems Engineering. Lab 2. Prerequisites: ENGRG 1412; MATH 2265. Industrial engineering concepts and techniques in production control, quality control, layout, methods of material handling, mechanical programming, and engineering economy. Laboratory sessions provide additional learning experiences with these topics and with computer software used in industrial engineering analyses.


1. Economic Decision Analysis. Prerequisite: MATH 2373 or 2713. Quantitative evaluation of investment alternatives for non-engineering majors. The role of interest in economic equivalence. Comparison of discrete and continuous cash flows. Methods for evaluating projects and comparing alternatives, including present worth, annual worth, rate of return and payback period. Decision making among independent, dependent, capital-constrained and unequal-lived projects. Replacement, break-even and minimum cost analyses. Depreciation and depletion methods and their effect on corporate income taxes, leading to after-tax cash flow analysis.

2. Economic Decision Analysis. Prerequisite: MATH 2373 or 2713. Quantitative evaluation of investment alternatives for non-engineering majors. The role of interest in economic equivalence. Comparison of discrete and continuous cash flows. Methods for evaluating projects and comparing alternatives, including present worth, annual worth, rate of return and payback period. Decision making among independent, dependent, capital-constrained and unequal-lived projects. Replacement, break-even and minimum cost analyses. Depreciation and depletion methods and their effect on corporate income taxes, leading to after-tax cash flow analysis.


5. Economic Decision Analysis. Prerequisite: MATH 2373 or 2713. Quantitative evaluation of investment alternatives for non-engineering majors. The role of interest in economic equivalence. Comparison of discrete and continuous cash flows. Methods for evaluating projects and comparing alternatives, including present worth, annual worth, rate of return and payback period. Decision making among independent, dependent, capital-constrained and unequal-lived projects. Replacement, break-even and minimum cost analyses. Depreciation and depletion methods and their effect on corporate income taxes, leading to after-tax cash flow analysis.


5633* Advanced Production Control. Prerequisites: 4034, 4613, corequisite: 5003. Advanced concepts and quantitative techniques used in production planning and control, including decision making using regression, time series analysis, and Box-Jenkins models, mathematical programming approaches, to aggregate planning and disaggregation, static and dynamic scheduling of machines and jobs, and independent demand inventory management. Deterministic and stochastic models and their relationship to just-in-time and zero inventory practices.

5643* Network Modeling and Analysis. Prerequisites: 4014, 5003. Network approach to the modeling and analysis of complex systems. Deterministic and stochastic network topics include PERT, CPM, decision trees, network flows, floods, and GERT (Graphical Evaluation and Review Technique). Modeling of practical problems. Systems analysis using network techniques and available computer programs.

5703* Discrete Systems Simulation. Prerequisites: STAT 4033 and FORTAN. Discrete-event systems via computer simulation models. Model building and the design and analysis of simulation experiments for complex systems. Application to a variety of problem areas. Use of SIMAN simulation language.


5803* Human Factors Engineering. Prerequisites: 3813, STAT 4103 or STAT 4053. Basic consideration of the human factors in engineering systems with emphasis on the interface of man-machine systems. Development of human abilities and limitations in relation to equipment designs and work environments.

5813* Productivity Measurement and Improvement. Prerequisites: 3813 and 4413 concurrently. Productivity issues, concepts, theories and insights focusing on job and organizational design are explained, illustrated and discussed. Emphasis on the productivity improvement process. Development of productivity measurement systems. Designing organizational processes which improve productivity.

5903* Systems Engineering and Management. Prerequisite: graduate standing. Systems engineering methodology, tools and techniques. Flow system function, system development cycle, systems analysis and design. Also the system design process and design for feasibility. Case studies to emphasize the systems approach.

5913* Decision-making Models for Multi-objective Analysis. Prerequisite: 4014. Quantitative and qualitative aspects of multi-objective decision making. Dynamics of the decision process are examined and the multi-objective nature of most managerial decision problems is illustrated. General concepts and solution methodologies of the multi-objective problem. Multi-objective linear programming, goal programming, and compromise programming. Attribute importance, risk measurement, and utility measurement.

5923* Advanced Energy and Water Management. Prerequisite: 5003. Continuation of coverage in 4923 with emphasis on modern management techniques. Cogeneration, energy management control systems, private purchasing, and energy accounting. Significant case study or term paper required.

5933* Artificial Intelligence and Expert Systems. Lab. 2. Prerequisite: graduate standing in industrial engineering and management. Fundamental concepts: search-oriented problem solving, knowledge representation, logical inference, and expert systems. Artificial intelligence languages, specialized machine architectures. Applications to planning, natural language processing and robotics. Development of an expert system or research report required. Common lectures with COMSC 5793, ECEN 5293 and MAE 5793.

5943* Hazardous Material and Waste. Prerequisites: 3503 or equivalent, CHEM 1515. Management of hazardous materials and waste by the generator to reduce operating costs and protect employees on hazardous waste management, labeling of control and identification, reducing volume and toxicity, and management activities.

6000* Research and Thesis. 1-15 credits, maximum 30. Prerequisites: approval of major adviser and advisory committee. Independent research for Ph.D. dissertation requirement under direction of a member of the Graduate Faculty.

6023* Nonlinear and Integer Optimization. Prerequisites: 4014 or 5013; FORTAN or PASCAL. Theoretical and practical aspects of nonlinear and integer optimization. Development and application of nonlinear optimization techniques for unconstrained and constrained problems; sequential search, gradient, and dynamic programming. Development and application of integer and mixed integer optimization techniques for constrained and unconstrained problems; implicit enumeration, branch and bound, and cutting methods. Same course as COMSC 6023.

6043* Integer Programming. Prerequisites: 4014 or 5013; 5003. Theoretical and practical aspects of integer and mixed integer optimization including network flows. Various mathematical concepts reviewed and applied to the development and application of integer and mixed integer techniques for solving unconstrained and constrained problems. Topics include implicit enumeration, branch and bound, cutting methods, diophantine equations, polynomial-time algorithms, and the o-kilter algorithm.

6110* Special Problems in Industrial Engineering, 1-6 credits, maximum 12. Prerequisites: consent of school head and approval of major adviser. Special problems in industrial engineering and management under supervision of a member of the Graduate Faculty.

6113* Reliability and Maintainability. Prerequisites: 5003, STAT 4033, FORTAN. Probabilistic failure models of components and systems. Detailed study of reliability measures, and static and dynamic reliability models. Classical and Bayesian testing for point and interval estimation of exponential and Weibull failures. Reliability optimization through allocation and redundancy. Fundamentals of maintainability.


6403* Theory of Systems Organization II. Prerequisite: 5413 or consent of instructor. Theory and practice of internal and external engineering consulting. Investigation of the engineer-client interface, effective engineering consultatns in relationship to existing organizational and cultural practices, and the engineering practitioner's impact on organizational improvement.

6513* Analysis of Decision Processes. Prerequisites: 5003, STAT 4113 or 4203, FORTAN. Bayesian decision theory with application to optimal decision making in industrial engineering and allied fields. Extensive and normal form analysis, Bayes statistics, noninformative stopping and conjugate prior distributions. Additive utility, opportunity loss (regret) and value of information. Bayesian decision theory, preposterior analysis and optimal sampling. Applications using Bernoulli, Poisson and normal processes.

6713* Continuous Systems Simulation and Systems Dynamics. Prerequisite: 5703 or consent of instructor. Continuous systems via simulation, using the DYNAMO and SLAM simulation languages. Concepts of combined discrete and continuous simulation modeling; Simulation of large-scale systems, particularly socio-economic systems.

6773* Japanese (JAPAN)


2115 Intermediate Japanese I. Prerequisite: 1115 or equivalent. Reading, the writing system, culture, grammar, conversation.


2223 Intermediate Japanese III. Prerequisite: 2123 or equivalent proficiency. A continuation of 2123.

Journalism and Broadcasting (JB)

1133 Mass Media in American Society. Growth and development of principal segments of the mass communication industry, including elementary professional concepts and current social and ethical issues.

1393 Mass Media Style and Structure. Elementary writing and editing techniques in print, broadcast and other media.

2183 Principles of Advertising. Prerequisite: sophomore standing. Elements and purposes of advertising; media functions, economic aspects, budgets, appropriations, rates, structures and terminology.

2193 History and Significance of Film. The evolution of motion pictures and examination of film. Film in our society and how it affects the individual. The basis of impact, program evaluation and criteria for intelligent and discriminating listeners and viewers.

2193 Principles of Public Relations. An introduction to the history, development and current practices of public relations as a process for building relationships between organizations and publics.

2213 Introduction to Broadcasting. History, growth and development of radio and television, FCC and other federal regulatory agencies, station and network operations and their effect on society.

2393 Reporting. Lab 3. Prerequisites: 1393 and 30 wpm typing ability. Reporting and writing through enterprise techniques for news coverage.

2413 Copy Editing. Lab 3. Prerequisite: 293. Copy editing, design and headline writing for newspapers and magazines.


2883 Radio-Television Announcing and Perform- ance. Lab 3. Prerequisites: 1393 and 2873. The broadcaster-newscaster’s responsibilities as a communicator; analysis of announcing skills; drills in radio and television announcing and the development of an effective on-the-air personality.
LANDSCAPE ARCHITECTURE
4414 Landscape Architectural Design III. Lab 8. Prerequisites: 3894 and 4013. Medium scale site development projects with emphasis on landforms and structures.
4424 Landscape Architectural Design IV. Lab 8. Prerequisite: 4414. Medium-scale complex landscape architectural design projects with emphasis on arrangement and design of land- scape elements as they relate to functional and aesthetic qualities. Integration of land- scape construction detailing and drawings as part of design presentation.
4434* Landscape Analysis and Use. Lab 4. Prereq- uisites: 4024 and admission to landscape ar- chitecture program. The inventory and analy- sis of natural and man-made landscape resources and their application to land use.
4514* Landscape Architectural Design V. Lab 8. Prerequisites: 4424, 4894. The design of large-scale sites with an emphasis on mixed use developments.
4525* Landscape Architectural Design VI. Lab 10. Prerequisite: 4514. Large scale development project in urban design, recreation or resource planning.
4534 Landscape Architecture Vertical Design Studio. Lab 8. Prerequisite: 4423. Individual stu- dents/projects geared to design, course level. Offered only during the summer session. Can be substituted for landscape architecture de- sign courses II through IV.
4573* Recreation Planning. Lab 6. Prerequisite: con- sent of instructor. Theory and methods for small and large scale area planning with em- phasis on natural resource systems.
4584 Landscape Environmental Planning. Lab 8. Prerequisite: 3324. Development of landscape architectural projects in the context of conserva- tion, preservation, urban, regional planning and other developmental design problems en- countered by the landscape architect.
4681 Landscape Architecture Assembly. Prerequi- site: 3894. Presentations by faculty members and guest speakers dealing with various as- pects of landscape architecture or related fields.
4990* Landscape Architecture Special Problems. 1-6 credits, maximum 6. Prerequisite: consent of appro- priate faculty member. Specific landscape arch- itectural problems.
5110* Advanced Special Problems. 1-12 credits, maximum 20. Prerequisite: consent of appro- priate faculty member. Specific landscape arch- itectural problems.

Latin (LATIN)
1113 Elementary Latin II. The rudiments of begin- ning Latin grammar, vocabulary and elemen- tary readings.
1233 Elementary Latin II. Prerequisite: 1113 or equivalent proficiency. Continuation of 1113. Grammar, vocabulary and readings.
1213 Elementary Latin III. Prerequisite: 1223 or equivalent. A continuation of 1223. Grammar and readings of Latin authors.
2111 Intermediate Readings. Prerequisite: 2113 or equivalent proficiency. Prose selections in Latin from a variety of authors.

Leisure (LEIS)
1212 Beginning Swimming. Lab 2. Theory and prac- tice of swimming strokes; techniques and ba- sic water safety skills.
1222 Beginning Fencing. Lab 2. Theory and prac- tice of foil fencing; fundamentals of footwork, defense, and attack; tactics and strategy; boutting; officiating and etiquette.
1232 Beginning Golf. Lab 2. Theory and practice of basic skills, rules, terminology and etiquette.
1242 Beginning Tennis and Racketball. Lab 2. Theory and practice of tennis and racketball; basic skills, rules, terminology, and game strat- egy for singles and doubles play. No credit for students with credit in 1252.
1252 Beginning Tennis. Lab 2. Theory and practice of basic skills, rules, terminology and game strategy for singles and doubles play. No credit for students with credit in 1242.
1312 Archery and Riflery. Lab 2. Theory and prac- tice of archery and riflery; basic skills of target shooting, scoring, and selection of equip- ment, and safety rules.
1342 Physical Fitness. Lab 2. Theory and practice of aerobic and weight training activities with learning experiences designed to promote physical fitness.
1352 Weight Training. Lab 2. Improvement of mus- cular strength and endurance in the major muscle groups of the body through progres- sive resistive exercise. Fundamental anatomy, physiology, mechanical principles, methods and techniques as applied to weight training programs.
1362 Self Defense. Lab 2. Theory and practice of self defense; scientific principles of gravity and body control over opposing forces, and principles of control judo.
2112 Rock Climbing. Lab 2. Theory and practice in the basics of technical rock climbing, bouldering and spelunking.
2122 Backpacking and Hiking. Lab 2. Theory and practice of outdoor skills and leadership tech- niques for executing and maintaining a wilder- ness activity.
2132 Bicycling. Lab 2. Theory and practice in the basics of bicycling, bike touring and bike me- chanics.
2142 Canoeing and Kayaking. Lab 2. Prerequisite: 2372 or equivalent. Theory and practice of basic skills and techniques of canoeing and kayaking in open water and whitewater.
2222 Intermediate Tennis. Lab 2. Prerequisite: 1252 or equivalent. Theory and practice of advanced serves and strokes; strategy for singles and doubles play; rules and competi- tive tennis.
2242 Scuba and Skin Diving. Lab 2. Prerequisite: advanced swimming skills. Theory and prac- tice of skills and techniques, selection of equip- ment, safety procedures and physics of scuba and skin diving.
2252 Dance Production. Lab 2. Prerequisite: 2312. Advanced technique, composition and stag- ing.
2262 Intermediate Rebound Gymnastics. Lab 2. Prerequisite: 1262 or equivalent. Theory and practice of intermediate skills in tumbling, trampoline and mini-tramp; spotting tech- niques and safety skills.
2272 Modern Ballet. Lab 2. Theory and practice of fundamental skills and techniques of ballet through the use of modern themes.
2282 Beginning Jazz Dance. Lab 2. Theory and practice of fundamental skills and techniques for the contemporary form of jazz dance.
2292 Beginning Jazz and Tap Dance. Lab 2. Theory and practice of fundamental skills and tech- niques for jazz and tap dancing.
2302 Jazz and Modern Dance. Lab 2. Theory and practice of basic skills and knowledge relating to the cre- ative and technical aspects of modern dance.
2322 Reverendational Dance. Lab 2. Theory and prac- tice of traditional social dances and a variety of “free style” dance forms.
2332 Folk, Square and Social Dance. Lab 2. Theory and practice of folk, square and social dance; basic steps, terminology and etiquette.
2372 Intermediate Swimming. Lab 2. Prerequisite: 1212 or ability to swim 50 yards using two strokes. Theory and practice of strokes, div- ing techniques and water safety skills for the intermediate swimming level.
2413 Introduction to Recreation and Leisure. The nature, scope and significance of leisure and recreation. Delivery systems for leisure ser- vices, major program areas and the interrela- tion of special agencies and institutions which serve the recreation needs of society.
2422 Social Recreation. Lab 2. Methods and mate- rials for planning, organizing and conducting social activities for groups of various sizes and ages in a variety of social situations.
2433 Introduction to Therapeutic Recreation. Theory and application of therapeutic recrea- tion with emphasis on types of illnesses and disabilities, delivery systems, programming and services.
3212 Lifeguard Training. Lab 2. Prerequisites: 2372 or equivalent and ability to swim 500 yards. Theory and practice of water safety and res- cue skills essential for lifeguards. May obtain American Red Cross Lifeguard Training Certi- fication.
3430 Program Budgeting. 1-3 credits, maximum 3. Prereq- uisites: 2413, 2422. Supervised practical ex- perience with leadership responsibilities for planning, conducting and evaluating activities and programs.
3443 Camp Leadership. Lab 2. Philosophy of camp- ing with emphasis on leadership training for organized camp settings. Principles and con- cepts of program planning, development and campng and outdoor skills.
3453 Theory of Recreation Leadership. Principles and practical applications of group leadership techniques; problem solving; supervision and evaluation of personnel.
3463 Program Design in Leisure Services. Em- phasis on program planning, supervision, promo- tion and evaluation of programs.
3473 Evaluation of Leisure Services. Prerequisite: 3463. Methods, techniques and application of the evaluation process remain a wide vari- ety of leisure service functions; clientele, pro- grams, personnel, facilities and organization.
3491 Pre-internship Seminar. Prerequisite: completion of 15 hours in LEIS. Preparation for internship in recreation and leisure ser- vices.
213

MANAGEMENT

4453* Recreation Education. Development of a holistic approach to teaching and learning in the outdoors. Learning in, about, and for, the out-of-doors as a process for acquiring skills with which to enjoy outdoor pursuits.

4463* Areas and Facilities in Recreation. Prerequisites: 3463; PE 3773 or 4712. Planning, design and development of areas and facilities in recreation and physical education.

4473* Outdoor Recreation. Theory and practical application of outdoor recreation concepts with emphasis on philosophy, principles, policies, economics, trends and problems.

4483* Interpretive Services in Recreation. Prerequisite: 4473 or FOR 4553 or concurrent enrollment. Interpretation and administration of visitor centers and interpretive naturalist programs, philosophic approaches, and methods for interpreting the natural and cultural history of public parks and recreation areas.

4493 Administration of Leisure Services. Decision making, problem solving, personnel policies, legal issues, fiscal policies and budgeting procedures related to the delivery of leisure services.

4513* Facilitation Techniques in Leisure Counseling. Prerequisite: 3483. Philosophy, history, trends, models, legal aspects and basic methods of leisure counseling and leisure education.

4523* Program Design in Therapeutic Recreation. Prerequisite: 3483. Systematic approach to the development, design and evaluation of therapeutic recreation programs.

4563* Industrial and Commercial Recreation Management. Prerequisite: 3463. Industrial and commercial recreation management: budgeting, facilities, programming and operational procedures.

4573* Leadership in Experiential Education. An investigation of leadership styles and management models with an application to adventure based education.

4589* Technical Management in the Wilderness. 1-6 credits; maximum 6. Developing technical competencies in back country navigation, emergency medical care and evaluation, winter Nordic mountaineering, technical rock climbing, hazard analysis and expedition planning.

Library Science

(LIBSC)

1011 The Use of Libraries and Learning Resources Centers. Orientation to the use of libraries and learning resources centers, including the special and nonbook resources of the OSU library, basic materials and services.

3023 Management of School Libraries and Learning Resource Centers. Introduction to practical problems in management of library learning resource centers; state, regional and national standards; understanding of the routines, methods and records necessary for the daily operation and supervision of the elementary or secondary school center; direction and training of student assistants; consideration of established library policy in school and community relationships.

3050 The School Library and Learning Resources Center in the Curriculum. 2-5 credits, maximum 5. Lab 1-3; Designed for teachers. Impor- tance and effective utilization of the cen- tralized school library media center in the teaching-learning process, evaluative selec- tion tools of print and nonprint media, and evaluation tools. Initial course is 2 credit hours. In addition, storytelling and field expe- rience credits are available for 1-3 credit hours.

4113* Reference Materials. Selection, evaluation and use of basic reference materials most commonly used in all types of libraries; the organization of reference service; interpretation of reference questions.

4213* Selection of Book and Nonbook Materials. Selection principles, practices and problems in terms of library and learning resources cen- ters; objectives; examination of basic biblio- graphic aids and reviewing media involved in book and nonbook selection; analysis and practice of annotations; oral and written review of books, films, instructional materials and other media.

4313* Reading Guidance for Young People. Consideration of reading interests and style and content of books suitable for young people of junior high school to junior college age; exam- ination and reading of books for recrea- tional and informational use, practice in pre- paring book talks, annotations and other means of motivating reading.

4414* Introduction to Cataloging and Classification. Basic principles of cataloging, with prac- tice based on functional application of current codes and manuals recognized by the profes- sion.

4550* Special Studies in Libraries and Learning Resources Centers. 1-6 credits, maximum 6. Designed to meet individual and group needs of library educational media specialists, teachers and others; includes enrichment tours and workshops or institutes.

5013* Libraries in the Social Order. Prerequisite: consent of instructor. Libraries and the pro- fession of librarianship; evolution of the librar- ies of a social institution; function of mod- ern library; implications of new media and techniques on library service; survey of pro- fessional literature; professional phi- losophy and ethics.

5613* Bibliography of Special Fields. Prerequisite: consent of instructor. Bibliographic literature and data banks in the humanities, sci- ences, and social sciences; theory and under- lying principles, practices, and control of descriptive and systematic bibliography; prac- tice in preparation of subject bibliographies. Print and computer data banks.

5713* Documents and Pamphlets Material. Intro- duction to the most-used governmental publi- cations and indexes; selection; acquisition and care of pamphlet materials.

Management (MGMT)

3013 Management. Prerequisite: completion of 50 credit hours and ACCTG 2203, ECON 2013, GNAD 2103, STAT 2023. Management principles and techniques of analysis and decision making as applied to management systems, organizations, interpersonal relationships and production.

3015 Management of the Public Organization. Ap- plications of relevant management theory and tools of analysis to the problems of nonprofit organizations. Systems analysis, planning-pro- gramming-budgeting systems and cost-ben- efit analysis. Problems and examples are drawn from urban, government, military and educational organizations.

3123 Organizational Behavior and Management. Prerequisites: 3013, and SOC 1113 or PSYCH 1113. Behavioral concepts relevant to the study of organizational and managerial behavior. Provides an understanding of the components and dynamics of organizational behavior as it relates to management. Manage- mental applications stressed.


4123 Labor Management Relations. Prerequisite: 3013. Labor relations and collective bargain- ing. Negotiation and administration of labor agreements and employee relations in non- union organizations. Modes of impasse reso- lution.

4133 Compensation Administration. Prerequisite: 3313. STAG 2023. An introductory course. Fun- damentals of compensation such as the legislative environment, compensation theories, job analysis, job evaluation, wage structures and indirect compensation programs.

4313* Organization Theory and Development. Pre- requisite: 3123. The design of formal organiza- tions with emphasis on topics relevant to organizational and managerial effectiveness. Focus on what is known about managerial and organizational effectiveness and how this knowledge may be applied.

4613 International Management. Prerequisite: 3013. Survey of the organization, planning and management of international operations of business firms. Exploration of major cul- tural, economic and political systems, and their effects on the management function.

4713* Conflict Resolution in Industry. Prerequisite: 3013. An integrated and interdisciplinary ap- proach to the issues of industrial conflict and conflict resolution. An analytic approach stressing both theory and empirical research. Models of conflict; conflict between the indi- vidual, the group and the organization; eco- nomic conflict and industrial conflict.

4813* Advanced Human Resource Management. Prerequisite: 3313. Management of human resources at the organization level including employee relations law and human resource planning.


5123* Organizational Design and Research. Pre- requisite: 5113 or 5213. An analysis of re- search which integrates theory and design of organizations. Reviews empirical research, findings and stresses methods of organiza- tional analysis; design and modification of or- ganizations.

5313* Seminar in Organizational Behavior. Prereq- uisite: 5113. Current research on group be- havior in organizations. Group processes and structural factors affecting group pro- cesses and inter- and intragroup performance characteristics. Laboratory simulation and team research projects used to pursue advanced topics.

5223* Seminar in Personnel Management. Theory and application of methods used in managing human resource programs in both private and public organizations. Function, methods and characteris- tics of a personnel program.

5513* Advanced Strategic Management and Busi- ness Policy. Prerequisite: MBA core courses. A terminal integrating course with emphasis on formulating and implementing basic policy decisions for business. An analytic approach to strategic decisions pursued through read- ings, cases and participation in a complex computer game.

5553* Management of Technology and Innovation. Prerequisite: MBA core courses or consent of instructor. Business applications of research, practice and theory in the management of technology and innovation. To improve the effectiveness by which technologies are de- veloped, implemented, and institutionalized. Emphasis upon the role of advanced technologies and strategic management of technology.

5713* Labor Relations and Collective Bargaining. A first course in labor relations. The industrial relations system, collective bargaining, labor legislation, the economic effects of unioniza- tion and other contemporary labor relations issues.

5813* Administration and Evaluation of Manpower Programs. Both prerequisites: ECON 5533. Advanced study of the operation, administra- tion and effectiveness of various manpower programs. Allocation of decision-making pro- cess among competing alternative programs and examination of various evaluation tech- niques as a means of program improvement. Assessment of the long- and short-run effects of manpower programs in both the private and public sectors.

6313* Advanced Organizational Behavior. Prereq- uisites, doctoral standing and consent of in- structor. Theory and research focusing on individual and group behavior in organiza- tions. Both advanced and contemporary topics in organizational behavior, including work atti- tudes, motivation, job design, leadership, group processes, power and politics, and in- dividual differences.

6323* Advanced Policy and Strategy Formulation. Prerequisites: doctoral student status and con- sent of instructor. Seminar examining concerns the content of overall organiza- tional strategy and the process through which it is formulated.

6353* Advanced Human Resource Management and Industrial Relations. Prerequisites: doctoral stu- dent status and consent of instructor. Selected topics in human resource manage- ment and industrial relations with emphasis on evaluation of research methods. Develop- ment of research proposals.

6342* Advanced Organization Theory and Strategy Implementation. Prerequisites: doctoral stu- dent status and consent of instructor. Admin- istrative task of implementing corporate and business strategies and extent to which orga- nizational structure, technology, culture, leadership, policy and reward systems affect that process. Developments in organization theory which are relevant to strategy implementation.
MANAGEMENT

Mangement Science and Information Systems (MSIS)

2103 Business Computer Concepts and Applications. Prerequisites: 30 credit hours and MATH 1513. Computer concepts, terminology, and software applications. Overview of hardware and software components, file structures, management information systems, futurist trends, database management systems, systems analysis, programming and systems design, and file structure analysis. Introduction to database, spreadsheet, and world processing software application packages and application programming.

3103 Computer Programming for Business. Prerequisite: 2103 or COMSC 2113 or equivalent. Computer programs for business applications using COBOL language. File structures, file updating techniques, sorting, report writing, magnetic tape and disk file handling.

2233 Production and Operations Management. Prerequisite: 3013. Production and operations management utilizing a management science approach. Management decision-making techniques and their application to problems in production and operations management. Examples of applicable techniques include linear programming and decision analysis.

3233 Management Science Methods. Prerequisite: 3223. Deterministic operations research techniques applied to the resource allocation and operational problems encountered in accounting, marketing, finance, economics and management. Linear programming and network models.

3403 Managerial Decision Theory. Prerequisite: 3223. Decision processes under risk and uncertainty. The uses of models in business decision-making and the impact of probability distributions. Bayesian decision analysis, utility measurements, game theory, Markov chains, queuing, simulation probability forecasting and inventory, network models, and dynamic programming.

3503 Business Systems Analysis. Prerequisites: 2103, 3103, ACCCT 2203. System analysis as a systematic approach for designing, developing, and implementing computer systems. Utilizes general system theory and systems approach through use of classical and structured techniques and strategies for describing flows, data flows, data structures, input and output devices, and program specifications. Information gathering and reporting activities and transition into system analysis and design.

4113 Management of Information Processing. Prerequisite: 2103 or equivalent. Managerial problems related to the acquisition, utilization and control of computerized information processing systems in business organizations. Conducting feasibility studies, contracting for hardware and software and services; information processing alternatives for the small businessperson.

4203 Advanced Computer Programming for Business. Prerequisite: GENAD 2103. Advanced programming features are examined with emphasis on the development of computer programs for business application. File processing including magnetic tape sequential files, disk-indexed sequential files, and virtual storage applications are an integral part of the course. Subjects and techniques such as TSO, segmentmentation, debugging tools and procedures, and pertinent JCL are also studied and applied.

4223 Management Information Systems. Prerequisites: 3203 and an introductory course in database management. Design, operation and implementation of computer-based information systems for decision making; current developments in management information theory. Value of information, data bases, decision support systems, interactive languages and statistical software; and applications to management problems in marketing, manufacturing and finance.

4253 Data Base Management. Prerequisite: 4223. Theoretical aspects and management applications of data bases, file organization, and data models, with emphasis on hierarchical network and relational database and structure design, implementation of storage devices, data base administration, and the analysis, design and implementation of data base management systems.

4263 Applied Artificial Intelligence. Prerequisite: 4223 or equivalent. Managerial applications of artificial intelligence. Topics include an overview and survey of the major topics in artificial intelligence, such as: neural networks, natural language processing, robotics, and vision; expert system concepts and strategies; evaluating artificial intelligence tools and procedures; information engineering methodology; building expert systems; project management for expert systems.

4413 Management Systems Applications. Prerequisites: 3233 and a course in a scientific programming language. Development and implementation of complex computerized decision models. Projects include data base utilization, optimization, and report generation.

4443 Computer-based Simulation Systems. Prerequisite: 3223. Completion of lower-division mathematics core requirements and a course in a scientific programming language such as FORTRAN, PL/1, or PASCAL. Discrete computer systems simulation using languages such as GPSS, GASP, or SIMAN. Cases include queueing, layout planning and evaluation, and financial modeling.

4523 Data Communication Systems. Prerequisite: 4113 or equivalent. Management orientation to decisions necessary in the design, implementation, and control of data communications. Transmission service and equipment characteristics, network design principles, data communication software and federal regulatory policy affecting data communications.

5303 Quantitative Methods in Business. Prerequisites: admission to the MBA program or consent of the instructor; demonstrated calculus proficiency. Application of quantitative techniques to business problems. Linear programming, transportation and assignment models, goal programming, integer programming, and networks.

5313 Production Operations Management. Prerequisite: admission to MBA program or consent of the instructor; demonstrated calculus proficiency. Application of quantitative techniques in operations in manufacturing and service organizations. Production planning, facility location, and layout design. Inventory, production planning, and control techniques, and simulation of production line problems and simulation. Project management and quality control. Emphasis is on a management science approach.

5333 Advanced Decision Theory for Management. Prerequisites: 5313 or equivalent. Case studies and examples involving decision analysis. Studies taken from current literature.

5413 Advanced Management Science. Prerequisites: Consent of instructor. Management science methods, with computer applications. Mathematical programming, simulation, forecasting, queuing, Markov processes.

5613 Advanced Production and Operations Management. Prerequisite: graduate standing, MGMT 5313 or equivalent. Production system, including materials requirements planning and management techniques used by operations managers. A computerized management simulation game provides decision-making experience.

5623 Advanced Management Information Systems. Prerequisites: 533, BUSAD 5110, ACCCT 5103, STAT 5013. Design and use of management information systems in business and other organizations. Model building, information management and decision support systems.

5633 Decision Support and Expert Systems. Prerequisite: BUSAD 5003 or equivalent. Technological aspects of expert systems. Development, acquisition and implementation of advanced technologies, such as decision support systems, expert systems, artificial intelligence, executive information systems, neural networks and others.

6200 Advanced Topics in Management Information Systems. Prerequisites: 533, BUSAD 5110, ACCCT 5103, STAT 5013. Design and use of management information systems for doctoral students.

Manufacturing Technology (MFGT)

1432 Welding Processes. Lab 3. Welding processes, their basic principles, and the changes in mechanical properties that occur in welded structures. Application of oxygas, metal arc, inert gas and other welding processes. Problems affecting the strength and other mechanical properties of welded structures.


5373 Production Processes. Lab 3. Prerequisites: GENAD 3315, MATH 1513. Processes used by the manufacturing industries in the production of durable goods. Foundry, plastics, powders metallurgy, hot and cold forming, and welding. Techniques of design, application and selection.

4050 Advanced Manufacturing Processes. 1-4 credits. Senior projects, junior and senior design, and consent of instructor. Special problems in manufacturing.

4303 Computer Integrated Manufacturing. Lab 3. Prerequisites: GENAD 1103, MATH 1513, introduction to programming techniques and manufacturing applications of Computer Numerical Control (CNC) and Robotics, machine capabilities and tooling requirements; with programs being prepared manually and with Computer Aided Design.

4313 Robotics and Automated Manufacturing. Lab 3. Prerequisites: PHYS 1214 and EET 3103 or equivalent. Applications of robotics and automated manufacturing equipment. Emphasis on machine characteristics, techniques of efficient utilization and control, and evaluation criteria.


4544 Advanced Metallurgical Problems. Prerequisites: 3343 and MECTD 4004. Problems in metallurgy; failure analysis, heat-treating problems and selection of metals for structural and environmental conditions.

Marketing (MKTG)

3213 Marketing. Prerequisite: ECON 2023. Marketing strategy and decision-making. Consumer behavior, consumer buying behavior, marketing institutions, competition and law.

3323 Consumer and Market Behavior. Prerequisites: 3213. Qualitative and quantitative analysis of the behavior of consumers; a market- ing consideration of the contributions of economics and the behavioral disciplines to understanding consumer behavior.

3433 Promotional Strategy. Prerequisite: 3213. Promotional policies and techniques and their application to selling problems of firms.

3473 Professional Selling. Prerequisites: 3213, 3323, 3433. Skills to understanding the professional personal selling process. Strong emphasis is placed on furnishing students with the skills of personal selling. Lecture sessions covered with experiential exercises and role playing.

3513 Sales Management. Prerequisite: 3213. Sales planning, control and organization of the sales department, development, territories, motivating salespersons and control over sales operations.
Marketing Education (MKFED)

2101* Career Exploration in Marketing Education. 1-2 credits, maximum 2. Market concepts and occupational information within the framework of career exploration and decision-making. The modular design used to provide a variety of exploratory experiences in career decision-making, self-assessment and environments and skills involved in marketing.

5113* Foundations of Occupational Education. 3 credits. Ecoonomic and sociological foundations of occupationally oriented programs plus specific information on serving students with multicultural backgrounds and special needs. Same course as OAED 3113.

5253* Curriculum in Marketing Education. Prerequisite: MKTO 3213. The technical competencies in marketing education curriculum design demanded of marketing educators who prepare students for careers in retailing, wholesaling or service-selling fields.

5333* Marketing Education and Marketing Promotion. The promotional function in marketing education. Ideation and development programs; competency of skills in teaching advertising, display, publicity, public relations, and visual merchandising in all types of businesses.

5433* Organization and Administration of the Marketing Education Program. Prerequisite: CIED 2113. Designed to develop the competencies needed by the marketing education teacher-coordinator to organize and administer a comprehensive marketing education program, general or specialized, employing the cooperative education model (simulated) plan of instruction.

5543* Techniques of Teaching Salesmanship Skills. Development of the knowledge and skills to plan, develop and implement a competency-based marketing education salesmanship course.
MATHEMATICS

1613 (A) Trigonometry. Prerequisites: 1513 or equivalent, or concurrent enrollment. Trigonometric functions, logarithms, solution of triangles and applications to physical sciences. No credit for those with prior credit in 1715 or any course for which 1613 is a prerequisite.

1715 (A) College Algebra and Trigonometry. Prerequisites: one unit of high school plane geometry, and 0123 or high school equivalent. An integrated course in college algebra and trigonometry. Credit limited to 3 hours for those with prior credit in 1513. No credit for those with prior credit in any course for which 1613 is a prerequisite. Satisfies the six hour general education Analytical and Quantitative Thought area requirement.

2203 Discrete Mathematics I. Prerequisite: 1513 or 1715. Logic, set theory proof techniques, probability and combinatorics, relations and functions, matrix algebra, graphs, Boolean algebra and lattices. Same course as COMSC 2203.

2265 (A) Calculus I. Prerequisites: 1715, or 1513 and 1613. An introduction to derivatives, integrals and their applications, including introductory analytic geometry.

2365 (A) Calculus II. Prerequisite: 2265. A continuation of 2265 including multivariable calculus, series and applications.

2373 (A) Calculus for Technology Programs I. Prerequisites: 1715 or 1513 and 1613. First semester of a terminal sequence in calculus for students in the School of Technology. Functions and graphs, differentiation and integration with applications.

2365 (A) Calculus for Technology Programs II. Prerequisite: 2373. Second semester of a terminal sequence in calculus for students in the School of Technology. Calculus of trigonometric, exponential and logarithmic functions and applications to physical problems.

2413 Arithmetic for Teachers. Foundations of arithmetic for the elementary teacher.

2513 Natural Concepts for Teachers. Prerequisite: 2413 or equivalent. Structures of the number system; informal geometry. For the elementary teacher.


2713 (A) Elementary Calculus. Prerequisite: 1513. An introduction to differential and integral calculus. For students of business and social sciences.

2813 Finite Mathematics. Prerequisite: 2713. Discrete probability, vectors and matrices and linear programming. For students of business and social sciences.

2910 Special Studies. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Special subjects in mathematics.

3013* Linear Algebra. Prerequisite: 2265. Algebra and geometry of finite-dimensional linear spaces, linear transformations, algebra of matrices, eigenvalues and eigenvectors.

3113* Introduction to Modern Algebra. Prerequisite: 2365. Modern algebra, including material on set theory and logic.

3203 Discrete Mathematics II. Prerequisite: 2203 or 3113. A continuation of MATH 2203. Basic ideas in the logical and mathematical thought processes, machine decomposition, computability, formal language theory. Same course as COMSC 3203.

3213* Essential Mathematics for the Biological and Social Sciences I. Prerequisites: 1213, and 60 credit hours or consent of instructor. Basic mathematics in the biological and social sciences. Selected topics from algebra, trigonometry and analytic geometry. Credit in this course and in 3413 may not be earned by those with credit in calculus.

3413* Essential Mathematics for the Biological and Social Sciences II. Prerequisite: 3313.Sequences and series from analytic geometry, special calculus and matrix algebra. Applications to social and biological sciences.

3623* Linear Algebra and Analysis I. Prerequisite: 2365. An integrated treatment of linear algebra, differential equations and multivariable calculus. No credit for those with credit in 2613 or 3013.

3632* Linear Algebra and Analysis II. Prerequisite: 3623. Continuation of integrated treatment of linear algebra, differential equations and multivariable calculus begun in 3623. No credit for those with credit in 2613 or 3013.

3723* Mathematical Structures. Prerequisite: 1513 or equivalent. Foundations of numbers (set theory, numeration, and the real number system), number theory, algebraic systems, functions and applications, and probability.

3733* Geometric Structures. Prerequisite: 1513 or equivalent. Geometric structures, plane and solid geometry, geometric motion (translation, rotations, reflections), polyhedra, applications to measurements.

4013* Engineering Mathematics: Calculus of Several Variables. Prerequisites: 2613 and 3013. Differential and integral calculus of functions of several variables, vector analysis, other basic methods of analysis and applications.

4033* History of Mathematics. Prerequisite: 2265. Early development of mathematics as a science, contributions of Greek mathematics, mathematical achievements of the 17th and 18th centuries, and the mathematics of the 19th and 20th centuries. The emphasis in the course will be on replicating the setting and techniques of the times to understand the nature of a discovery and its relationship to contemporary thought.

4043* Geometry I. Prerequisite: 2265 or equivalent. An axiomatic development of Euclidean and non-Euclidean geometries including the following topics: points, lines, angles, betweenness, plane separation, triangles, quadrilaterals, polygons and circles.

4113* Modern Algebra I. Prerequisite: 3113. Basic properties of groups, rings, and fields including homomorphism theorems and quotient structures.

4243* Theory of Numbers. Prerequisite: 3113. Division into integers, congruences, quadratic residues, distribution of primes, continued fractions and the theory of ideals.

4273* Combinatorial Mathematics. Prerequisite: 2265. Counting techniques, generating functions, difference equations and recurrence relations, introduction to graph and network theory.


4363* Advanced Calculus II. Prerequisite: 4353. A theoretical treatment of integration and of functions of several variables.

4513* Numerical Mathematics: Analysis. Prerequisites: 2613, 3013, knowledge of FORTRAN. Computer arithmetic and rounding errors, numerical methods and error analysis associated with interpolation, least square approximation, roots of equations, integration, finite differences and ordinary differential equations, systems of linear algebraic equations. Same course as COMSC 4513.

4553* Linear and Nonlinear Programming. Prerequisite: 3013. Linear programming, simplex methods, duality, sensitivity analysis, integer programming and nonlinear programming.

4563* Introduction to Mathematical Modeling. Prerequisite: 2365. Techniques of problem solving and mathematical models presented by examples and case-studies of real life applications of mathematical modeling from industrial settings.


4673* Complex Analysis. Prerequisite: 4013 or 4553. Complex variables for students in engineering and the physical sciences. Analytic functions, power series, residues and poles and conformal mapping. Applications.

4710 Honors Seminar. 1-3 credits, maximum 9. Prerequisite: upper division standing of honors student. Special subject matter areas and reports on current literature.

4910* Special Studies. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Special subject in mathematics.

4983 Senior Honors Thesis. Prerequisites: senior standing and Honors program participation. A guided reading and research program ending with a thesis under the direction of a faculty member and including a public presentation. Required for graduation with departmental honors in mathematics.

5000 Research and Thesis. 1-6 credits, maximum 6. Conferences and guidance in reading and research and in the writing of reports and theses.

5101 Seminar in Mathematics. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Topics in mathematics.

5123* Intermediate Probability Theory. Prerequisites: 4363 and STAT 4113. Measure theoretical probability of integration, expectation, product spaces and independence, conditioning, different kinds of convergence in probability theory and statistical spaces. Same course as STAT 5113.

5123* Advanced Linear Algebra. Prerequisite: 3013. Linear transformations; determinants, eigenvalues and similarity transformations; canonical forms; bilinear and quadratic forms; orthogonal and unitary transformations.

5133* Stochastic Processes. Prerequisites: 2613 and STAT 4113. Definition of stochastic processes, probability structure, mean and covariance function, the set of sample functions, stationary processes and their spectral analysis, renewal processes, counting analysis, renewal processes, discrete and continuous Markov chains, birth and death processes, exponential model, queueing theory. Same course as INDE 5133 and STAT 5133.

5143* Theory of Functions of a Real Variable I. Prerequisite: 4513. A general theory of measure, measurable functions and integration; introduction to metric and Banach spaces.

5173* Analytic Number Theory. Prerequisite: 4673 or 5383. Arithmetic functions, Zeta and L functions, distribution of primes, introduction to modular forms.

5183* Algebraic Number Theory. Prerequisite: 4113. Number fields, ideal theory, units, decomposition of primes, quadratic and cyclotomic fields, introduction to local fields.

5213* Fourier Analysis. Prerequisite: 4013 or 4553. Orthogonal series expansions, Fourier series and integrals and boundary value problems. Applications.

5243* Ordinary Differential Equations I. Prerequisite: 4363 or consent of instructor. Existence and uniqueness of solutions, linear systems and their asymptotic behavior, oscillation and comparison and singularities.

5253* Ordinary Differential Equations II. Prerequisite: 5243. Stability and asymptotic behavior of linear systems, perturbation and the Poincare-Bendixon theorem for planar autonomous systems.

5303* General Topology. Prerequisite: 3113 or consent of instructor. Topological spaces including continuous functions, compactness, separa- ration properties, connectedness and metric spaces.

5313* Geometric Topology. Prerequisite: 5303. General topological spaces including convergence, product and quotient spaces, metrization, compactness and uniform spaces.

5323* Algebra I. Prerequisites: 4113, and 5123 or consent of instructor. Group, ring and module theory to include products, co-products and ideal theory. An introduction to homological algebra, hom and tensor functors. Field extensions and Galois theory. Selected topics.

5333* Algebra II. Prerequisite: 5323. A continuation of 5323.

5383* Theory of Functions of a Complex Variable I. Prerequisite: 4553. Basic topology of the plane, functions of a complex variable, analytic functions, transformations, infinite series, integration and conformal mapping.

5393* Theory of Functions of a Complex Variable II. Prerequisite: 5383. A continuation of 5383.
5413  Differential Geometry. Prerequisite: 4013 or 4593. Differential geometry of curves and surfaces.

5513  Numerical Analysis I. Prerequisites: 4253 or COMSC 4253. Algorithms and error analysis, solution of equations, interpolation and approximation theory. Same course as COMSC 5513.

5523  Numerical Analysis II. Prerequisites: 4253 or COMSC 4253, and 4653. Discrete variable methods in ordinary differential equations including single-step and multistep methods. Iterative techniques for numerical solution of partial differential equations. Same course as COMSC 5543.

5553  Numerical Analysis III. Prerequisites: 3013, and 4253 or COMSC 4253. Theoretical and computational methods associated with matrix algebra, linear algebraic equations and algebraic eigenvalue problems. Same course as COMSC 5553.


5593  Case Studies in Applied Mathematics II. Prerequisite: 5563 or consent of instructor. A continuation of 5583.

5653  Automata and Finite State Machines. Prerequisites: 3113 or COMSC 5513 or COMSC 5113 and COMSC 5213. Finite state model, state diagrams and flow tables, equivalent states and equivalent machines. Formal grammars, context-free languages and their relation to automata, Turing for power of machines. Same function as COMSC 5653.

5663  Computability and Decidability. Effective computation, recursive sequences, general recursivity, recursive functions, equivalence of computability, definitions, decidability, recursive algorithms. Same course as COMSC 5663.

5683  Partial Differential Equations I. Prerequisites: 4013 or 4353, Theory of partial differential equations of the first and second orders.

5693  Partial Differential Equations II. Prerequisite: 5683. A continuation of 5683.

5733  Algebraic Topology I. Prerequisites: 4113, 5123 and 5303; or 4113, 5123, 5303. An introduction to the homological algebra of geometric structures, including homotopy, homology and cohomology theory.

5743  Algebraic Topology II. Prerequisite: 5733. A continuation of 5733.

5813  Homological Algebra I. Prerequisite: 5333. Relative homological algebra including closed and projective classes, resolution and derived functors, additive theorem, construction of projective class in the categories of groups, rings and modules, abelian categories.

5823  Homological Algebra II. Prerequisite: 5813. Continuation of 5813.

5853  The Calculus of Variations. Prerequisite: 4363. Determination of functions, curves and surfaces with maximum or minimum properties, fields of extremals, the Hamilton-Jacobi partial differential equation. Applications to geometry and physics.


6013  Functional Analysis I. Prerequisites: 5123, 5143 and 5303. Theory of normed linear spaces.

6113  Functional Analysis II. Prerequisite: 6013. A continuation of 6013.

6123  Advanced Probability Theory. Prerequisites: 5673 and 5113 or STAT 5113. Sequences of random variables, convergence of sequences, and their measure theoretical foundations. Differentiability of functions and their applications. Laws of large numbers and central limit theorems. Conditioning, introduction to stochastic processes. Same course as STAT 6123.

6410  Seminar and Research in Applied Mathematics. 1-3 credits. Maximum 9. Prerequisites: consent of instructor and chairperson of student’s advisory committee.

6510  Seminar and Research in Analysis. 1-3 credits. Maximum 9. Prerequisites: consent of instructor and chairperson of student’s advisory committee.

6610  Seminar and Research in Geometry. 1-3 credits. Maximum 9. Prerequisites: consent of instructor and chairperson of student’s advisory committee.

6710  Seminar and Research in Topology. 1-3 credits. Maximum 9. Prerequisites: consent of instructor and chairperson of student’s advisory committee.

6810  Seminar and Research in Algebra. 1-3 credits. Maximum 9. Prerequisites: consent of instructor and chairperson of student’s advisory committee.

6910  Seminar and Research in Number Theory. 1-3 credits, maximum 9. Prerequisites: consent of instructor and chairperson of student’s advisory committee.


3293  Convective Fluid Flow. Prerequisites: ENGS 2520 and MATH 2613. Gas flows in one and two dimensions. Basic thermodynamic and dynamic equations. Nozzle and duct flows, choking, plane and oblique shocks, Prandtl-Meyer expansions, rocket propulsion, fractional high-velocity flows and heat addition effects. Two-dimensional ideal fluid flow, stream function, velocity potential, linearized flows and method of characteristics.

3323  Design Stress Analysis. Prerequisite: ENGS 2114. Mechanics of deformable bodies with emphasis on the design of machines and structures: general theories of stress and strain; limit design; strain relations; theories of failure; stress concentration factors. Same course as COMSC 5513.

3333  Research and Thesis. Prerequisite: 6013. A continuation of 3323. Research and thesis. Application of research under close faculty supervision by the student. Projects selected in consultation with the instructor.


4113  Mechanical Engineering Applications. Lab 6. Prerequisites: 3112 and consent of instructor. Application of mechanical engineering laboratory techniques to the solution of experimental or design problems. Provides outstanding senior students with the opportunity to do research under close faculty supervision. Projects selected in consultation with the instructor.


4243  Gas Power Systems. Prerequisites: 3223 and ENGS 2523. Power and propulsion engines utilizing a gas as the working substance. Application of steady thermodynamic and dynamic equations of one-dimensional compressible flow, including isentropic flow and normal shock waves. Applications to both transportation and stationary systems.


4273  Fluid Dynamics. Lab 3. Prerequisites: 3112 and ENGS 3233. Experimental study of fundamental processes in aerodynamics and fluid mechanics using advanced measurement techniques.


4323  Design for Manufacturability. Lab 3. Prerequisites: 3233, ENGS 3313. Integration of concepts of product design with manufacturing principles, including behavior and properties of material, stress analysis, heat transfer and lubrication, Processing techniques and economics. Emphasis on analysis requirements and applications of processing parameters and design variables, in CAD/CAM.


4343  Industrial Projects. Lab 1. Prerequisites: 3003, 3043, 4113 and 3723. Student teams work on professional-level engineering projects sponsored by participating industries. Projects are selected from a broad range of technical areas such as mechanical design, thermal analysis, control instrumentation, controls, fluid mechanics and energy production.
4353* Mechanical Design Analysis. Prerequisite: 3323. Analysis and synthesis of machine components such as fasteners, springs, gears, brakes, lubrication, analytical methods for the study of impact, dynamic loads and fatigue, comprehensive treatment of failure, safety and reliability.

4363* Experimental Analysis. Prerequisites: 3112 and 3323. Laboratory techniques for the experimental analysis of vibration, stress, force and motion. Projects involve the use of strain gages, brittle lacquer techniques, reflection and transmission polariscope, load cells and accelerometers.

4373* Aerospace Vehicle Design. Prerequisites: 3233, 4243, 4283, 4513, or consent of instructor. Design of aerospace vehicles. Prediction of the aerodynamic, structural, propulsion and control characteristics.

4404 Seminar. Prerequisite: senior standing. Group discussions on professional aspects of engineering including ethics and legal concerns. Preparation of written and oral reports on selected and assigned topics.


4604 Fundamentals of Aircraft Design. Prerequisites: MATH 2613, CHEN 4373 or MAE 3613. Properties of porous media, properties and phase behavior of reservoir fluids. Computation schemes, including numerical methods, for predicting and optimizing production rates and establishing reserves.

4703* Indoor Environmental Systems. Prerequisites: ENGSC 2213, ENGSC 3233. Study of heating, cooling and air-moving systems including mechanical, control and refrigeration systems. Calculation of heating and cooling loads. Design of air distribution systems and selection of components.

5000* Thesis. 1-6 credits. Maximum 6. A student studying for a master's degree who elects to write a thesis must enroll in this course.

5010* Mechanical Engineering Projects. 1-12 credits, maximum 12. Project in research or design selected by the student, or assigned by the instructor. A student who wishes to complete a master's degree under Plan III must enroll in this course.

5030* Engineering Practice. 1-12 credits, maximum 12. Prerequisites: senior or graduate standing and consent of instructor. Solution of real-life engineering design and development problems in an actual or simulated industrial environment. Activities include application of design and testing procedures, economic evaluation and periodic oral and written reports. Activities must be approved in advance by the adviser.

5043* Advanced Dynamics. Prerequisites: 3043, MAE 3083, 3085. An advanced treatment of analytical methods for rigid body motion with emphasis on multi-dimensional motion. Newtonian formulations. LaGrange's equations, Euler's equations, the Poinscot construction, Hamilton's equations, Canonical transformations, spin dynamics of the top, the Lorenz attractor, and Kane's formulations. Applications to engineering problems.

5073* Mechanical Vibrations. Prerequisite: 4063. Analysis of nonlinear vibrations, classical methods of analysis of continuous systems and numerical methods.

5083* Engineering Acoustics. Acoustical analysis and test techniques, use of emphasis on design applications for noise and vibration control in machinery and in buildings.

5093* Numerical Engineering Analysis. Prerequisites: MATH 2261, 2262, 2263, or equivalent. Solution of problems arising in the design of aerospace systems. Prediction of the aerodynamic, structural, propulsion and control characteristics.

5103* Inviscid Fluid Mechanics. Prerequisite: ENGSC 3233. Basic principles and analytical methods underlying the theory of the motion of inviscid and incompressible fluid.


5323* Plasticity and Metal Forming. Prerequisite: ENGSC 2114 or equivalent. Basic theory of plasticity and its applications to metal-forming problems. Application of computer-aided design (CAD) and computer-aided manufacturing (CAM) techniques in part and tool design and manufacture.


5372* Instrumentation. Lab 2. Analysis and design of instrumentation systems, laboratory experiences with electronic instrumentation and transducers, application of digital and analog integrated circuit components to measurement problems.

5403* Computer-Aided Design and Analysis. Prerequisite: basic FORTRAN programming. Theory, application and implementation of digital computer-oriented algorithms for the synthesis, simulation, analysis and design of engineering systems. Advanced FORTRAN methods for optimization, simulation and data analysis. Implementation of these methods uses programs libraries, batch processing, remote terminals and graphic display units.


5583* Corrosion Engineering. Lab 2. Prerequisite: ENGSC 3313. Modern theory of corrosion and its applications in preventing or controlling corrosion damage economically and safely in service.


5623* Energy Conversion Systems. Prerequisites: ENGSC 2213 and 3233. A comparative study of conventional and alternative energy conversion systems, including economic and environmental concerns.

5633* Applied Thermodynamics. First and Second Law analysis. Prediction of properties of nonideal fluids, including mixtures. Engineering applications to power system design, solar systems, HVAC systems, waste heat recovery and underground petroleum reservoirs.

5642* Advanced Energy Resources Engineering. Application of new methods and concepts to the development of present and future energy sources. Diverse topics ranging from utilization of heat in production of oil to extraction of fusible materials from sea water.


5723* Nonlinear Systems Analysis I. Prerequisite: 4503 or ECE 4413. Failure of superposition, phase plane and phase space techniques, method of perturbations; asymptotic, orbital and structural stability; subharmonic generation; generalized approaches to nonlinear systems analysis.

573* Artificial Intelligence and Expert Systems. Lab 2. Prerequisite: graduate standing in mechanical engineering. Fundamental concepts, search-oriented problem solving, knowledge representation, logical inference, building, an expert system, and the use of special purpose and/or specialized machine architectures. Applications to planning, natural language processing, and robotics. Development of an expert system or research report required. Common lectures with COMS 5793, ECEN 5293, and INEED 5933.

5803* Advanced Thermodynamics I. Prerequisite: 3223. A rigorous examination of the fundamental principles of engineering thermodynamics. The First Law, the pure substance flow processes, Second Law availability, properties of substances, thermodynamics, mixtures and equilibrium.

5823* Radiation Heat Transfer. The mechanism of the transfer of energy by thermal radiation; radiant properties of materials, energy transfer prediction methods and solar energy topics.

5843* Conduction Heat Transfer. Prerequisite: ENGSC 3233. Advanced heat transfer analysis and design with primary emphasis on conduction.

5873* Advanced Indoor Environmental System. Prerequisite: 4703. Heating, cooling, and ventilating systems. System and component design, building thermal simulation and energy calculation procedures.
593* Guidance and Control of Aerospace Vehicles. Prerequisite: 4053 or ECE 4413 or equivalent. Navigation, guidance, and control of aircraft, launch vehicles, and space vehicles. Inertial navigation mechanizations and error analysis. Stability augmentation systems.

593* Avionics. Prerequisites: 4063, 4236, 4523. Interaction between aerodynamic, inertial, and elastic forces. Influence coefficients of modern wings. Calculations of the normal force and pitching moment for higher lift and boundary layer control methods. Deformations of structures under dynamic loads by rigorous and approximate methods of analysis.

594# Jet and Rocket Propulsion. Prerequisite: 4243. Thermodynamic and aerodynamic principles applied to turbojet, turboprop, ramjet and rocket engines for aircraft and missile propulsion. Component matching for turbojets; design of ramjet inlets; solid and liquid rocket fuels; rocket components and controls; rocket energy requirements for orbital and interplanetary flight.

600* Research and Thesis. 1-15 credits. Maximum of 60 credits for Ph.D. Prerequisite: consent of the head of the graduate department of the School and approval by the student's advisory committee. Independent research under the direct supervision of a member of the graduate faculty. For students pursuing study beyond the level of the M.S. degree.

610* Advanced Study. 1-12 credits. Prerequisite: approval of the student's advisory committee. Study and investigation under the supervision of a member of the faculty along lines of interest well advanced of and supported by the 5000-series courses.

606# Stochastic Processes in Physical Systems. Prerequisite: 5303. Application of stochastic probability theory to the analysis of physical systems. Introduction to probability theory and random processes.

623* Turbulent Fluid Dynamics. Prerequisite: 5234. Isotropic turbulence, turbulent wakes and jets, bound turbulent shear flows, transition, hydrodynamics, and stability and integral calculation methods for turbulent boundary layers.

626# Computational Fluid Dynamics. Prerequisite: 5234. Steam function-vorticity and pressure-vorticity similarity methods, inviscid and compressible flows. Temperature and concentration solutions. Applications to various external and internal flow problems.

633* Advanced Topics in Materials Processing. Lab 3. Prerequisite: 5333. Modeling of non-linear problems in solidification heat transfer, martensitic and visco-plastic deformation and material removal plasticity and fracture. The simulations by computer methods including finite difference and finite element techniques. Experimental verification and control of experiments. Numerical studies conducted in the materials processing lab. Tour of industry to provide additional processing background.

642* Motion Programming of Space Mechanisms. Prerequisite: MATH 3013. Advanced techniques for the analysis of two- and three-dimensional mechanisms.

645* Fluidics. Prerequisites: 5453 and 5463. Static and dynamic modeling of fluidic components for sensing, signal processing and transmission and control. Component interconnection and impedance matching problems. Synthesis of proportional, digital and A-C fluid systems for a wide variety of applications.

646* Fluid Power Control. II. Prerequisite: 5453. Computer-aided analysis and design of fluid control systems; effect of control on dynamic performance and stability. Distributed parameter analysis of signal and power transmission lines. Case studies of feedback control of systems used in transportation, aircraft and missiles, machine tools and power plants.

648# Automatic Control II. Prerequisite: 5473 or ECE 5413. Methods of formulation and solution of engineering system control problems based on optimal dynamic behavior, advanced techniques for model identification, computation of the dominant modes of dynamical systems and control problems. Applications include mechanical, electrical, fluid and thermal systems.

654# Advanced Aerospace Structures. Prerequisites: 4523 and 5533. Modern methods for the design and stress analysis of complex flight structures. Analysis of thin-walled plate and shell structures by exact and approximate analytical methods.

656* Advanced Solid Mechanics. General nonlinear problems of elasticity including thermal, dynamic, and bifurcation analysis. Stress wave propagation; consideration of plasticity.

672# Nonlinear Systems Analysis II. Prerequisite: 5723 or ECE 5723. Advanced topics of nonlinear systems theory selected from the current literature. Topics may include nonlinear stability theory, multi-input describing functions, and stability methods for the problem of Lure and Popov's criterion and multiparameter perturbation theory.

681* Advanced Thermodynamics II. Prerequisite: 3803. Development of statistical models to predict the behavior of ideal solids and gases. Fundamental treatment of probability, combination and statistical analysis. Statistical treatment of the problem of Lure and Popov's criterion and multiparameter perturbation theory.

684* Convection Heat Transfer. Prerequisite: 5234 or equivalent. Advanced convective heat transfer in laminar and turbulent flows over external surfaces and inside channels. Heat transfer at high velocities, free convection boundary layers, and mass transfer.

696# Dynamics of Space Flights. Prerequisite: MATH 2193. Power requirements and renewable and non-renewable power for space flight. Equations of motion for flight in space. Development of the laws of Kepler for orbiting bodies, transfer trajectories between orbits; launch, ascent and re-entry problems.

Advanced Topics in Materials Processing. Lab 3. Prerequisite: 5333. Modeling of non-linear problems in solidification heat transfer, martensitic and visco-plastic deformation and material removal plasticity and fracture. The simulations by computer methods including finite difference and finite element techniques. Experimental verification and control of experiments. Numerical studies conducted in the materials processing lab. Tour of industry to provide additional processing background.

Mechanical Design Technology (MECDT)

1223 Computer-aided Drafting and Design. Lab 4. Prerequisite: GENT 1153 or equivalent. Computer-aided drafting and design for creation of engineering drawings. Geometric construction in two dimensions and three dimensions, automated dimensioning, and section practices using ANSI standards.

1843 Descriptive Geometry. Lab 6. The graphical analysis of points, lines and planes in space and practical applications to engineering working drawings.


2053 Pipe Drafting. Lab 6. Prerequisite: GENT 1153 or equivalent. Design and layout of piping systems.

2123 Machine Drafting. Lab 6. Prerequisite: GENT 1153 or equivalent. Detail and assembly drawings of machines and products using drafting machines and computer-aided drafting techniques.

2743 Electronics and Electrical Drafting. Lab 6. Prerequisite: MATH 1513 or equivalent. Conventional preparation of graphical illustrations in the design and construction of electronic equipment.

3003 Dynamics. Prerequisites: GENT 2323 and MATH 2373. Plane motion of particles and rigid bodies. Force-acceleration, work-energy, and impulse-momentum principles. Graphical analysis, mechanisms, and vibrations.


3563 Production Planning. Lab 3. Prerequisites: GENT 1103, 1153, and 1222. Industrial design functions and techniques, the creative process in product design innovations and improvements, human factors (person/machine interface) and techniques in graphic and model presentations of design concepts.

3572 Structural Fabrication Design. Lab 3. Prerequisite: GENT 1222. Industrial design functions and techniques, the creative process in product design innovations and improvements, human factors (person/machine interface) and techniques in graphic and model presentations of design concepts.

3888 Introduction to Prime Movers. Lab 2. Prime movers as used in the industrial world. Basic principles of operation of internal combustion engines, turbines, electric and hydraulic motors. Laboratory practices in inspection, measurement, and comparison of characteristics.


4123 Diesel Engines and Injection Systems. Lab 2. Prerequisite: 1105. Compression ignition engines and fuel injection systems. Laboratory practices in inspection, adjustment, timing and testing of fuel injection systems. Diesel and spark ignition compared.

4213 Fundamentals of Hydraulic Fluid Power. Lab 2. Prerequisite: MATH 1513. Basic fluid power concepts. Standard hydraulic symbols, component design and application, fluid power system considerations, design and operation.

4214 Basic Instrumentation. Lab 4. Prerequisite: MATH 2373. Data analysis. Theory, operational characteristics and application of transducers and transducers. Design and testing of fluid power systems. Fluid and spark ignition compared.

4313 Thermodynamics and Heat Transfer for Electronics. Lab 3. Prerequisites: MATH 2383 and junior standing. Principles of thermodynamics and heat transfer important to the design and construction and operation of electronic systems. Basic heat transfer by conduction, convection and radiation. Cooling and heating of electronic systems by heat-sinking, free-air convection, forced-air convection and combinatory systems. Identification of specific over-heating problems in electronics systems and the design of appropriate heat removal techniques.


4313 Applied Fluid Mechanics. Prerequisites: 2313, MATH 2373, and PHYS 1214. Fluid mechanical principles applied to fluid power systems and general fluid mechanics. Uses Bernoulli and continuity analy-
Military Science (MILSC)

1000 Introduction to Military Skills. 1 credit, maximum 2. Lab 2. Prerequisites: enrollment in 1112 and 1212. Introduction of military skills, such as rappelling, drill and ceremony, land navigation, individual first aid, individual training in small unit tactics. Practical exercises in patrolling, immediate action drills, raid and ambush techniques. Some laboratories will be on selected weekends.

1112 Survey of Military Science. History and organization of the Army and Reserve forces and their role in the National Defense policy. Legal, moral, and ethical responsibilities of the military officer. Reserve Officers Training Program and methods of commissioning. Exposure to military skills such as rappelling and drill.

1212 Leadership. Leadership theories, leader and follower roles, principles and traits of leadership, communications, problem solving, motivation, self-development. Taught through group discussion and practical exercises in leadership skills.

2122 Basic Camp. Lab 2. Military training and performance in leadership and training environment for six weeks.

2130 Military Physical Conditioning. 1 credit, maximum 2. Lab 2. Prerequisite: must be enrolled in MILSC theory classes. Theory and practice of physical conditioning instruction, based on the U.S. Army physical training program, designed to develop cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition.

2233 Leadership and Military Skills I. Lab 2. Leadership and individual military skill development. Instruction in land navigation; marksman; first aid; individual skill training in rappelling, communications, physical fitness, and leadership. Taught through a combination of classroom instruction and outdoor practical application exercises. Some laboratories will be on selected weekends, by arrangement.

2313 Leadership and Military Skills II. Lab 2. Prerequisite: 2233. Leadership, management and military skill development. Includes theory and tactics for military operations; individual skill training in rappelling and patrolling taught through a combination of classroom instruction and outdoor practical application exercises. Some laboratories will be on selected weekends, by arrangement.

2333 Fundamentals of Military Operations. Lab 2. Prerequisite: placement by department head. Course geared for leadership and individual military skill development. Taken in lieu of 2233 and 2313 with department head approval. Theory and tactics for military operations taught through classroom lecture and outdoor practical application exercises. Some laboratories will be on selected weekends, by arrangement.

3113 The Platoon Leader I. Lab 2. Prerequisites: completion of lower-division MILSC or equivalent, and approval of PMS. The functional role of the platoon leader, task planning and execution in leadership, ethics, land navigation, basic rifle marksmanship and drill and ceremony. Prepares cadets for advanced camp and eventual commissioning as an officer in the U.S. Army. Some laboratories will be on Saturdays, by arrangement.

3227 The Platoon Leader II. Lab 2. Prerequisites: completion of lower-division ROTC program or basic ROTC summer camp or equivalent, qualification by physical and aptitude standards set by Department of the Army and approval of PMS. Platoon defensive operations, patrolling, communications, land navigation and map reading, branches of the Army and the officer personnel management system. Some laboratories will be on Saturdays, by arrangement.

4014 Advanced Summer Camp. Lab. Prerequisites: 3112 and 3223. Military training and performance as leader for six weeks.

4123 Contemporary Command Issues and Management. Lab. Prerequisites: 3112 and 3223. Staff organization and procedures, preparing and conducting military training, effective speaking and presentation. Discussion of other contemporary issues critical to integration of newly-commissioned officers.

4223 Military Ethics, Justice and Professionalism. Lab 2. Prerequisites: 3112 and 3223. Special obligations and responsibilities of the military profession. In-depth study of military justice as it relates to the new officer. Discussion of military ethics with case studies.

Music (MUSIC)

0501 Concert and Recital Attendance. Graduation requirement for music degree or certificate candidates.


1011 Piano Class Lessons. For students with no previous experience.

1021 Piano Class Lessons.

1031 Voice Class Lessons.

1041 Voice Class Lessons.

1051 Organ Class Lessons.

1071 Single Reed Techniques. Lab 2. Methods for playing and teaching the clarinet and saxophone.

1081 Double Reed Techniques. Lab 2. Methods for playing and teaching the oboe and bassoon.


1110 Elective Organ. 1-4 credits, maximum 8.

1120 Elective Piano. 1-4 credits, maximum 8.

1131 Elective Voice. 1-4 credits, maximum 8.

1140 Elective Brass. 1-4 credits, maximum 8.

1150 Elective Strings. 1-4 credits, maximum 8.

1160 Elective Woodwinds. 1-4 credits, maximum 8.

1170 Elective Percussion. 1-4 credits, maximum 8.

1180 Secondary Organ. 1-2 credits, maximum 8.

1190 Secondary Piano. 1-2 credits, maximum 8.

1200 Secondary Voice. 1-2 credits, maximum 8.

1210 Secondary Brass. 1-4 credits, maximum 8.

1220 Secondary String. 1-2 credits, maximum 8.

1230 Secondary Woodwind. 1-2 credits, maximum 8.

1240 Secondary Percussion. 1-2 credits, maximum 8.

1250 Major Organ. 1-4 credits, maximum 8.

1260 Major Piano. 1-4 credits, maximum 8.

1270 Major Voice. 1-4 credits, maximum 8.

1280 Major Violin. 1-4 credits, maximum 8.

1290 Major Viola. 1-4 credits, maximum 8.

1300 Major Cello. 1-4 credits, maximum 8.

1310 Major Double Bass. 1-4 credits, maximum 8.

1320 Major Guitar. 1-4 credits, maximum 8.

1330 Major Harp. 1-4 credits, maximum 8.

1340 Major Flute. 1-4 credits, maximum 8.

1350 Major Oboe. 1-4 credits, maximum 8.

1360 Major Clarinet. 1-4 credits, maximum 8.

1370 Major Saxophone. 1-4 credits, maximum 8.

1380 Major Bassoon. 1-4 credits, maximum 8.

1390 Major Trumpet. 1-4 credits, maximum 8.

1400 Major French Horn. 1-4 credits, maximum 8.

1410 Major Trombone. 1-4 credits, maximum 8.

1420 Major Euphonium. 1-4 credits, maximum 8.

1430 Major Tuba. 1-4 credits, maximum 8.

1440 Major Percussion. 1-4 credits, maximum 8.

1513 Music Literature. Music of the Baroque, Classic, Romantic, and Contemporary periods, with emphasis on style analysis.

1531 Sight Singing and Ear Training. Prerequisites: 2672 and 2673. Development of skills in sight-singing and aural perception. Taken concurrently with MUSIC 1532.

1532 Theory of Music I. Prerequisite: Successful completion of Music Theory Placement Examination. Development of skills in sight-singing and aural perception. Taken concurrently with MUSIC 1531.
MUSIC

1541 Sightseeing and Eartraining II. Prerequisites: 1531 and 1533. A continuation of 1531. Taken concurrently with 1543.

1543 Theory of Music II. Prerequisites: 1531 and 1533. A continuation of 1533, taken concurrently with 1541.


2011 Piano Class Lessons. Prerequisites: 1021 and music major status. Class lessons for music majors (non-keyboard concentration) preparing for the piano proficiency examination.

2021 Piano Class Lessons. Prerequisites: 2011 and music major status. Successful completion of the course fulfills piano proficiency examination requirement for music majors (non-keyboard concentration).

2041 Vocal Techniques. Prerequisite: 1031. Assists non-vocal majors in understanding the physical and psychological processes required for correct singing tone production.


2061 Low Strings Techniques. Lab 2. Methods for playing and teaching the cello and double bass.


2091 Low Brass Techniques. Lab 2. Methods for playing and teaching the trombone, euphonium, and tuba.

2250 Major Organ. 1-6 credits, maximum 12. Prerequisite: 1250.

2260 Major Piano. 1-6 credits, maximum 12. Prerequisite: 1260.

2270 Major Voice. 1-6 credits, maximum 12. Prerequisite: 1270.

2280 Major Violin. 1-6 credits, maximum 12. Prerequisite: 1280.

2290 Major Viola. 1-6 credits, maximum 12. Prerequisite: 1290.

2300 Major Cello. 1-6 credits, maximum 12. Prerequisite: 1300.

2310 Major Double Bass. 1-6 credits, maximum 12. Prerequisite: 1310.

2320 Major Guitar. 1-6 credits, maximum 12. Prerequisite: 1320.

2330 Major Harp. 1-6 credits, maximum 12. Prerequisite: 1330.

2340 Major Flute. 1-6 credits, maximum 12. Prerequisite: 1340.

2350 Major Oboe. 1-6 credits, maximum 12. Prerequisite: 1350.

2360 Major Clarinet. 1-6 credits, maximum 12. Prerequisite: 1360.

2370 Major Saxophone. 1-6 credits, maximum 12. Prerequisite: 1370.

2380 Major Bassoon. 1-6 credits, maximum 12. Prerequisite: 1380.

2390 Major Trumpet. 1-6 credits, maximum 12. Prerequisite: 1390.

2490 Major French Horn. 1-4 credits, maximum 8. Prerequisite: 1400.

2410 Major Trombone. 1-6 credits, maximum 12. Prerequisite: 1410.

2420 Major Euphonium. 1-4 credits, maximum 8. Prerequisite: 1420.

2430 Major Tuba. 1-6 credits, maximum 12. Prerequisite: 1430.

2440 Major Percussion. 1-6 credits, maximum 12. Prerequisite: 1440.

2551 Sightseeing and Eartraining III. Prerequisites: 1541 and 1543. Choral and instrumental writing correlated with sightseeing, melodic and harmonic dictation and keyboard skills. Taken concurrently with 2551.

2563 Theory of Music IV. Lab 1-2. Prerequisites: 1541 and 1543. A continuation of 2553. Taken concurrently with 2563.

2573 (H)Introduction to Music. Instruments, musical forms and styles, and major composers from the 16th century to the present. For non-majors; no prior musical experience required.

2600 Chamber Ensembles. 1 credit, maximum 8. Lab 2. Combination of voices, keyboard, and orchestral instruments for performing chamber music, music theater and duo piano repertory.

2620 University Bands I. 1-2 credits, maximum 6. Lab 3-5.

2620 Symphony Orchestra. 1-2 credits, maximum 6.

2630 University Choral Ensembles I. 1-4 credits, maximum 6.

2672 Fundamentals of Music. Accepted for certificatenatural science degree in elementary education. Fundamentals of music for elementary education.

2682 Music Education. Prerequisite: 2672. For certificatemusic education. Methods of teaching music in grades K-6.

3110 Elective Organ. 1-4 credits, maximum 8. Prerequisite: 1110.

3120 Elective Piano. 1-4 credits, maximum 8. Prerequisite: 1120.

3130 Elective Voice. 1-4 credits, maximum 8. Prerequisite: 1130.

3140 Elective Brass. 1-4 credits, maximum 8. Prerequisite: 1140.

3150 Elective String. 1-4 credits, maximum 8. Prerequisite: 1150.

3160 Elective Woodwind. 1-4 credits, maximum 8. Prerequisite: 1160.

3170 Elective Percussion. 1-4 credits, maximum 8. Prerequisite: 1170.

3180 Secondary Organ. 1-2 credits, maximum 8. Prerequisite: 1180.

3190 Secondary Piano. 1-2 credits, maximum 8. Prerequisite: 1190.

3200 Secondary Voice. 1-2 credits, maximum 8. Prerequisite: 1200.

3210 Secondary Brass. 1-2 credits, maximum 8. Prerequisite: 1210.

3220 Secondary String. 1-2 credits, maximum 8. Prerequisite: 1220.

3230 Secondary Woodwind. 1-2 credits, maximum 8. Prerequisite: 1230.

3240 Secondary Percussion. 1-2 credits, maximum 8. Prerequisite: 1240.

3250 Major Organ. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2250.

3260 Major Piano. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2260.

3270 Major Voice. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2270.

3280 Major Violin. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2280.

3290 Major Viola. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2290.

3300 Major Cello. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2300.

3310 Major Double Bass. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2310.

3320 Major Harp. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2320.

3330 Major Guitar. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2330.

3340 Major Flute. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2340.

3350 Major Oboe. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2350.

3360 Major Clarinet. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2360.

3370 Major Saxophone. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2370.

3380 Major Bassoon. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2380.

3390 Major Trumpet. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2390.

3400 Major French Horn. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2400.

3410 Major Trombone. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2410.

3420 Major Euphonium. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2420.

3430 Major Tuba. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2430.

3440 Major Percussion. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2440.

3501 Pre-clinical and Laboratory Experiences in Music. Prerequisite: declared intent to pursue Teacher Education program. Observation and micro-teaching in music.

3610 University Bands II. 1-2 credits, maximum 6. Lab 3-5. Prerequisite: 4 hours of 2610.


3630 University Choral Ensembles II. 1-4 credits, maximum 6. Prerequisite: 4 hours of 2630.

3711 Basic Conducting. Principles of conducting choral and instrumental groups.

3713 Music and the Arts. Dominant themes of human self-expression as discovered through study of music and its integration with art and culture from the late Middle Ages to the early 20th century, with emphasis on the humanistic ideas they embody.


3731 Introduction to Elementary Music Education. Orientation to methods (including Orff, Kodaly, Dalcroze, and Manhattanville Music Curriculum Project) appropriate for teaching music in the elementary school.

3732 Teaching Choral Music. Prerequisite: 3712. Repertoire, rehearsal procedures, and vocal techniques for the public school choral teacher.

3733 Survey of Rock and Roll Styles. Elements and musical styles of rock and roll, its evolution and its social, economic and cultural effects.

3743 Foundations of Music Education. Prerequisite: full admission to Teacher Education. Interdisciplinary approach including aspects of philosophy, aesthetics, sociology and psychology as they are applied in music in post-elementary public schools.

3753 (H)History of Music to 1750. Prerequisite: 1513 and 1533, or equivalent. Aids music majors and other qualified students in understanding the musical styles, forms, schools, composers and instruments that developed in Western civilization from antiquity through the Baroque period.

3763 (H)History of Music from 1750. Prerequisite: 1513, 1533 or equivalent. Aids music majors and other qualified students in understanding the musical styles, forms, schools, composers and instruments that developed in Western civilization from the pre-classical period to the 20th century.

3772 Counterpunt. Prerequisites: 2563 and satisfactory upper-division examination. Analysis and application of contrapuntal techniques of the 18th century.
Survey of Jazz Styles. Elements and stylistic features of jazz, its evolution and its impact on society.

Form and Analysis. Prerequisites: 2563 and satisfactory upper-division examination. Analysis of standard repertoire with emphasis on form and structural harmonic analysis.

Elementary Music Methods K-6. Prerequisite: 3731. Current elementary music trends, techniques, and materials. For those who will be involved with teaching elementary music grades K-6.

Marching Band Methods. Prerequisite: 3731. Organizational responsibilities and charting for public school marching bands.

Junior Recital. Prerequisites: junior standing and consent of major applied music teacher.

Piano Class Lessons. Prerequisite: senior music major status.

3-4 Lo. Literature for the Adolescent Singer. Examination of solo literature and pedagogical approaches suitable for use at the high school level.

Music Industry Internship. 1-6 credits. maximum 8. Lab 8. Prerequisites: 90 credit hours and minimum 2.50 GPA in all music and business courses. Directed practical experiences in an approved retail store or in a work situation related to the music industry.

Major Organ. 1-6 credits, maximum 12. Prerequisites: 3250 and successful completion of recital attendance requirements.

Major Piano. 1-6 credits, maximum 12. Prerequisite: 3260 and successful completion of recital attendance requirements.

Major Voice. 1-6 credits, maximum 12. Prerequisite: 3270 and successful completion of recital attendance requirements.

Major Violin. 1-6 credits, maximum 12. Prerequisite: 3280 and successful completion of recital attendance requirements.

Major Cello. 1-6 credits, maximum 12. Prerequisite: 3300 and successful completion of recital attendance requirements.

Major Double Bass. 1-6 credits, maximum 12. Prerequisite: 3310 and successful completion of recital attendance requirements.

Major Guitar. 1-6 credits, maximum 12. Prerequisite: 3320 and successful completion of recital attendance requirements.

Major Harp. 1-6 credits, maximum 12. Prerequisite: 3330 and successful completion of recital attendance requirements.

Major Flute. 1-6 credits, maximum 12. Prerequisite: 3340 and successful completion of recital attendance requirements.

Major Oboe. 1-6 credits, maximum 12. Prerequisite: 3350 and successful completion of recital attendance requirements.

Major Clarinet. 1-6 credits, maximum 12. Prerequisite: 3360 and successful completion of recital attendance requirements.

Major Saxophone. 1-6 credits, maximum 12. Prerequisite: 3370 and successful completion of recital attendance requirements.

Major Bassoon. 1-6 credits, maximum 12. Prerequisite: 3380 and successful completion of recital attendance requirements.

Major Trumpet. 1-6 credits, maximum 12. Prerequisite: 3390 and successful completion of recital attendance requirements.

Major French Horn. 1-6 credits, maximum 12. Prerequisite: 3400 and successful completion of recital attendance requirements.

Major Trombone. 1-6 credits, maximum 12. Prerequisite: 3410 and successful completion of recital attendance requirements.

Major Euphonium. 1-6 credits, maximum 12. Prerequisite: 3420 and successful completion of recital attendance requirements.

Major Tuba. 1-6 credits, maximum 12. Prerequisite: 3430 and successful completion of recital attendance requirements.

Major Percussion. 1-6 credits, maximum 12. Prerequisite: 3440 and successful completion of recital attendance requirements.

Lessons in Applied Music (Minor Field). 1-4 credits, maximum 4. Prerequisite: completion of basic applied minor field(s) in bachelor’s degree, or equivalent performance level. Minor applied music field(s).

Lessons in Applied Music (Major Field). 1-4 credits, maximum 4. Prerequisite: bachelor’s degree or equivalent performing level in applied major field. Major applied music field.

Chamber Ensembles. 1 credit, maximum 8. Lab 2. Prerequisite: 2600 (4 hrs.) or equivalent. Combinations of woodwinds, brass, and strings performed in small ensembles.

Advanced Music History and Literature. Prerequisite: two semesters of music history. Advanced music history and literature. Historical and stylistic analyses of musical forms and composers’ techniques. Open to graduate students and advanced undergraduate students.

Problems in Musical Composition. 1-2 credits, maximum 2. Prerequisites: 1543 and consent of instructor. Practical experiences in musical composition.

Special Studies in Music Literature. 1-2 credits, maximum 4. Prerequisite: junior standing or consent of instructor. Survey of music literature suitable for teaching various levels in applied music.

Special Studies in Music Pedagogy. 1-2 credits, maximum 4. Prerequisite: junior standing or consent of instructor. Survey of music pedagogical methods suitable for various levels and types of applied music.

Senior Recital. Prerequisites: senior standing and permission of major applied music teacher.

Orchestration and Arranging. Prerequisite: upper-division standing as a music major or consent of instructor. Orchestrating for instrumental ensembles and arranging for choral ensembles.

Student Teaching in Public School Music. 1-12 credits, maximum 12. Prerequisite: 3501 and consent of Teacher Education Program. Directed observation, seminars, and supervised student teaching in selected elementary and secondary music programs.

Music in the School Curriculum. Aims, content, and motivation of the music education program in elementary and secondary schools from the standpoint of the classroom teacher, music specialist and administrator.

Music Education Seminar. Research into latest developments of public school choral and instrumental music.

Twentieth Century Music Theory and Literature. Prerequisites: 2563, 3762, Melodic, harmonic and rhythmic techniques in 20th century music.

Selected Studies in Music and Music Education. 1-3 credits, maximum 8. Short-term area studies in music and music education.

Senior Honors Project. Prerequisites: departmental invitation, senior standing, Honors program participation. A guided program in musicological research, music composition, or music performance, ending with an honors project under the direction of a faculty member with a second faculty member to complete an examining committee. Required for graduation with departmental honors in music.

Advanced Problems in Music Education. 1-3 credits, maximum 10. Prerequisite: consent of major adviser. Advanced study of program and instructional evaluation.

NATSC International Occupational Education. Comparison and analysis of international occupational education.

Teaching Practicum in Occupational Education. 1-12 credits, maximum 12. Prerequisite: 3113 and 4103. Planning and implementing programs for the development of human resources. Program goals and objectives, curriculum, facilities, teaching-learning theories, materials development, program resources and program and instructional evaluation.

Underlying principles and evolving concepts in occupational and adult education. Critical analysis of educational programs and service areas and the resulting implications for leadership personnel at all levels of program responsibility.
OCCUPATIONAL AND ADULT EDUCATION

5123* Program Evaluation in Occupational and Adult Education. Prerequisite: background in a vocational area. The purpose of evaluation in occupational and adult education programs with specific attention given to the evaluation of program development in laboratory and shop instruction.

5133 Curriculum Planning in Occupational and Adult Education. Principles and procedures for curriculum planning, development and management in occupational and adult education with analyses of current trends and practices and their implications for program quality.

5203 Foundations of Adult and Continuing Education. Societal trends, issues and institutions which have influenced the development and current status of adult and continuing education. Analyses and critiques of contemporary adult and continuing education activities, materials and clientele groups served, and their implications for new and existing programs in the field.

5213* Characteristics of Adult Learners. Learning patterns, interests and participation patterns among adults in a variety of educational settings. Theories of learning and behavior modification for adults, with implications for adult and continuing education programs. Particular attention given to learners in occupational, adult basic, community junior college, extension and proprietary program settings.

5223* Organization and Administration of Adult Education. Prerequisites: 5203 and 5213. Organizational procedures and administrative practices for effective planning, implementation and management of adult and continuing education programs. Analyses of legislation, finances and community groups that influence and support adult and continuing education programs.

5233* Needs Analysis. Techniques of conducting organizational analyses of human performance problems, including surveys, interviews, records analysis, group interaction, and task analysis.

5243* Advanced Project in Needs Analysis. Prerequisite: 5233. The conduct of an analysis of human performance problems in an organizational, agency, institutional or community setting. Includes needs analysis, investigation, clarification and resolution, and the development of a formal report and a presentation to management.

5253* History and Organization of Vocational and Technical Education. Prerequisite: graduate standing. Social, political, and economic forces acting upon vocational and technical education studied in depth for leadership development.

5233* Administration and Supervision of Local Occupational Education. Prerequisite: professional administrative and supervisory personnel responsible for the development, coordination and promotion of occupational education programs.

5340* Special Problems. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Directed independent study of special topics involving assigned readings, library research, field work or a combination of these.

5443* Interpreting Research in Occupational and Adult Education. Development of interpretive and critical statistical seminar on the methods of research, synthesis and interpretation with application to particular fields of occupational and adult education.

5480* Modern Technology in Occupational Education. 1-6 credits, maximum 6. Technical developments in specialized occupational areas examined and analyzed for educational curricular and program implications.

5533* Human Resource Development. Prerequisite: admission to the master's degree program. Preparation in training and development, including history and nature of the field, trainer roles, needs analysis, program development, evaluation, and techniques of conducting training.

5553* Occupational Education for Students with Special Needs. Techniques and procedures utilized by which occupational programs may serve individuals with special needs. Field experiences an integral part of the course.

5720 Workshop. 1-3 credits, maximum 10. Professional workshops of various topics and lengths. Each workshop designed to meet unique or special needs of individuals concerned with occupational and adult education.

5912 Internship. 3-6 credits, maximum 6. Prerequisite: consent of instructor. Supervised experience in business, industry, human development or education settings.

5912* Organization and Administration of Adult Basic Education Programs. Prerequisites: 5203 and 5213. Organizing and administering adult basic education for occupational programs.

6000* Doctoral Thesis. 2-10 credits, maximum 15. Required of all candidates for the Doctor of Education degree in occupational and adult education.

6103 Philosophy of Occupational and Adult Education. Prerequisites: graduate course in philosophy or education. Alternative perspectives for developing a philosophic position in occupational and adult education.

6213* Aging, Learning and Work. Prerequisite: graduate standing. Analysis of the nature of adult learning and work performance and their relationships to the aging process.

6333* Strategic Planning and Policy Development. Prerequisites: 5123, 5223 or 5333, master's degree. Theoretical and practical aspects of the concepts and implementation processes. Initiation among various public and private sector organizations involved with human resource development.

6533* Critical Issues in Human Resource Development. Prerequisite: 5222 or 5533. Issues of concern to training directors and other human resource development (HRD) practitioners researched, including managing HRD, core issues and problems, executive training, organization, development, productivity, and managing change.

6870* Doctoral Seminar. 1-2 credits, maximum 2. Continuation of directed training related to the participant's area of concentration. Prerequisites: 1000 or permission of the instructor. 1-2 credits, maximum 2. Continuation of directed training related to the participant's area of concentration. Prerequisites: 1000 or permission of the instructor.

6870* Internship in Occupational and Adult Education. 1-8 credits, maximum 8. Prerequisite: consent of instructor. Directed field experience related to the participant's area of concentration. Provides opportunities for an individual to put into practice and test ideas, theories and concepts learned in graduate study.

Office Management (OFFMG)

3753 Executive Secretarial Transcription. Lab 2. Prerequisites: 2334 or equivalent and BUSPR 3523 (or concurrent enrollment). Transcription of executive-level dictation with exacting standards covering English usage, vocabulary, proofreading and accuracy and speed of transcription.

3863 Office Procedures. Prerequisite: BUSPR 2630. Provides an applied approach to the technical, secretarial and managerial operations. Human relations in business as well as decision-making and problem-solving.

Petroleum Technology (PET)

1113 Introduction to Petroleum Industry. Lab 2. Prerequisites: 1113 or 1 unit of high school algebra. Exploration, drilling, production, transportation and marketing.

1234 Petroleum Fluid Properties. Lab 2. Prerequisites: MATH 1513 or 1715; CHEM 1215 or 1314. Chemical and physical properties of petroleum, petroleum products, natural gas, coal and drilling fluids. Introduction to reservoir engineering.

2234 Petroleum Industry Pipeline Transportation and Storage. Lab 2. Prerequisites: 1234; COMSC 2113 (pre- or corequisite). Sizing, construction, operation and maintenance of petroleum and gas pipeline transportation and storage systems. Liquid, gas and two-phase flow through pipeline systems. Pumps and compressors. Corrosion control.

2333 Basic Petroleum Production. Lab 2. Prerequisites: 1234; GENT 2332 (pre- or corequisite). Original completion of oil and gas wells. Design, sizing and selection of production equipment. Performance and interpretation of basic reservoir tests conducted with oil and gas production. Solutions to routine production problems.


3223 Oil Property Evaluation. Prerequisites: 2333, 3114. Forecasting reserves and expenses associated with petroleum properties. Discounted and undiscounted measures of investment worth. Decline curve analysis. Oil field deals. Windfall profit and federal income tax considerations. AFE project economics, present value, relativity and objectivity, freedom and responsibility.

4050 Advanced Technology Problems. 1-4 hours credit, maximum 6. Prerequisite: junior standing and consent of head of department. Special technical problems in a petroleum area.

4122 Advanced Petroleum Problems. Lab 3. Prerequisites: 4224; senior standing. Individually selected topics in advanced petroleum drilling, production (primary, secondary or tertiary), recovery, transportation and storage.

4232 Petroleum Reservoir Engineering. Lab 3. Prerequisites: 3234; MATH 2383; or consent of 1 instructor. Reservoir mechanics, reservoir fluid flows through porous media. Petroleum and gas reservoir measurements, analyses, evaluations and predictions.


4343 Advanced Petroleum Production. Lab 3. Prerequisites: 2333, 4224, and MECTD 3322. Remedial and worker operations on producing wells. Analysis and design of artificial lift techniques. Well testing and problem well evaluation.

Philosophy (PHILO)

1013 (H)Philosophical Classics. Basic works by great thinkers, including Plato, Descartes and Hume.

1213 (H)Philosophies of Life. Introductory ethics and sociopolitical philosophy. Moral decision making, the good life, social values, freedom and responsibility.

1313 Critical Thinking. Informal and formal reasoning; explanation, definition and fallacy. Emphasis on the critique, evaluation and development of arguments in everyday discourse. Practical applications.

1113 Introduction to Philosophy. Selected philosophical problems: the nature of reality, knowledge, value, social ideals and religion.

1113 (H)Ancient and Medieval Philosophy. Main systems of Western thought from the Greeks to 15th century Europe. Emphasis on Plato, Aristotle, Augustine and Aquinas.

1213* (H)Modern Philosophy. Major philosophers and problems in Western thought from the 16th through the 19th century. Emphasis on Descartes, Hume and Kant.

1300* (H)Philosophy and the Quality of Life. 1-3 credits, maximum 3. Series of self-paced, one-credit modules dealing with the arguments and values: 4224; senior standing. Emphasis on the quality of life for persons and societies.

3133 19th and 20th Century Philosophy. Major philosophers and problems in Western thought from the Hegel to the present.

3413 (H)Ethics. Contemporary and classical views on the nature of moral judgements, moral value, relativism and objectivity, freedom and responsibility.
trends in American philosophy during the last several decades and the impact of European thought. Selected current controversies and recent developments in philosophy.

Ethical issues in business, including employee whistle-blowing, conflicts of interest and product liability. Professional codes of ethics. Ethical issues in biology and medicine. Moral problems brought about by recent developments in scientific research and medical technology. The writings of a major philosopher. Seminar on a Major Philosopher.

Analysis of contemporary educational theory and practice. The relation of biological principles to educational goals and objectives. Teaching styles and techniques in the elementary school. Theories of human development, organization and development of educational programs. Evaluation techniques commonly used by physical educators and coaches. Coaching, coaching methods and techniques of coach- ing, wrestling.

Coaching Baseball. Prerequisite: junior standing. Methods and techniques of coaching baseball.

Coaching Football. Prerequisite: junior standing. Methods and techniques of coaching football.

Coaching Gymnastics. Lab 2. Prerequisite: junior standing. Methods and techniques of coaching gymnastics.

Adapted Aquatics. Prerequisites: 2512 or consent of instructor. Mechanical principles, skill evaluation, analysis techniques, lesson and unit planning, and practical experience in teaching swimming to persons with mental and/or physical impairments.

Adapted Physical Education. Lab 2. Prerequisite: 1114 or consent of instructor. Principles of physical education for persons with disabilities. Practical experiences in teaching swimming to persons with mental and/or physical impairments.

Adapted Physical Education. Lab 2. Prerequisite: junior standing. Methods and techniques of coaching track and field.

Adapted Physical Education. Lab 2. Prerequisite: 2512 or consent of instructor. Analysis of contemporary educational philosophies, with attention to recommended aims, curricula and methods.

Adapted Physical Education. Lab 2. Prerequisite: junior standing. Methods and techniques of coaching track and field.

Adapted Physical Education. Lab 2. Prerequisite: 1114 or consent of instructor. Analysis of contemporary educational philosophies, with attention to recommended aims, curricula and methods.

Adapted Physical Education. Lab 2. Prerequisite: junior standing. Methods and techniques of coaching track and field.

Adapted Physical Education. Lab 2. Prerequisite: 1114 or consent of instructor. Analysis of contemporary educational philosophies, with attention to recommended aims, curricula and methods.

Adapted Physical Education. Lab 2. Prerequisite: junior standing. Methods and techniques of coaching track and field.

Adapted Physical Education. Lab 2. Prerequisite: 1114 or consent of instructor. Analysis of contemporary educational philosophies, with attention to recommended aims, curricula and methods.
PHYSICS

2312* Optics. Prerequisites: 1214 or 2114. Geometrical optics; illumination and photometry; interference, diffraction, dispersion, absorption and polarization of light.

3131 Modern Physics for Engineers. Prerequisite: 2114 or equivalent. Emphasis on nuclear, molecular and solid state physics with engineering applications.

3211 Laboratory I. Lab. 3. Use of lasers, lens systems, spectroscopy, interferometry, interaction of light with matter, thermal physics, and wave propagation.

5131 Mathematical Physics. Prerequisites: 1214 or 2114, and MATH 2365. Physical applications of vectors, vector calculus and differential equations. Fourier analysis. Orbit geometry, coordinate systems and transformations of coordinates. Matrices and determinants.

5222* Radioactivity and Nuclear Physics Laboratory. Lab 6. Prerequisite: 4633 or 4213 or concurrent enrollment. Basic measurement techniques in nuclear physics.

5221 Laboratory II. Lab. 3. Laboratory experiments on atomic structure, electron interference, gamma ray spectroscopy, the photoelectric effect, and nuclear resonance.

5713 Modern Physics I. Prerequisite: 2114. Atomic physics: special theory of relativity, and introduction to solid state and nuclear physics.

4010* Special Problems. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Individual laboratory work of an advanced nature.

4112* Electricity and Magnetism. Prerequisites: 2114 and MATH 2613, or their equivalents. Electrostatic fields, magnetic fields of steady currents, induced EMFs, Maxwell's equations and introduction to electromagnetic wave theory. Vector analysis used.

4213* Introduction to Nuclear Physics. Prerequisites: 6 hours of physics and 8 hours of chemistry. For nonphysics majors. Fundamentals of nuclear physics with applications to chemistry, engineering and biology.


4263* Introduction to Solid State Physics. Structure, specific heat, dielectric properties, lattice vibrations, free electron theory, band structure and superconductivity of solids.

4313 Biophysics. Prerequisites: 1214 or 2114; BISC 1403 or 1603; CHEM 3015. Application of physical concepts to biological structures and processes. Interaction of light with biological materials, effects and radiation on living systems, electrical processes of biological systems, thermodynamics, nature of biological materials and the application of physical concepts in biological instrumentation.

4413* Modern Physics II. Prerequisites: 2013 and 3713. Atomic and X-ray spectra; one-dimensional Schrödinger equation; nuclear structure; introduction to statistical mechanics and elementary quantum statistics.

5261* Advanced Theory of Solids. Prerequisites: 5653. Many-body techniques, transport processes, band theoretical techniques, superconductivity, dynamics of electrons in a magnetic field, and alloys.

5350* Selected Topics in Acoustics. Prerequisites: 4423, 5453. Radiation, transmission and absorption of acoustic waves, acoustic impedance, high-intensity effects; ultrasonics.

5413* Classical Mechanics. Prerequisites: 3013 and 3413 or equivalent. Generalized coordinates and advanced dynamics; coupled systems, wave motion, theory of elasticity.

5453* Methods of Theoretical Physics. Prerequisite: 5315. Introduction to the various methods and techniques used in theoretical physics.

5513* Selected Topics in Astrophysics. Prerequisites: 4423, 5453. Radiation, transmission and absorption of acoustic waves, acoustic impedances, high-intensity effects; ultrasonics.

5663 Solid State Physics I. Prerequisite: 4263. Crystal structure, cohesive energy of ionic crystals and metals, specific heats, free electron theory of metals, band theory, Brillouin zones, insulators and alloys; magnetic properties, optical properties and thermal and electrical conductivity of solids.

5713* Solid State Physics II. Prerequisite: 5663 or equivalent. Symmetry, electric properties, ferroelectrics, magnetic properties, mechanical properties and defects of solids.

5913* Selected Topics in Astrophysics. Prerequisites: ASTRO 2023 and 3023 desired but not mandatory. Derivation of fundamental equations and applications to problems in astronomical spectroscopy, stellar atmospheres, stellar interiors, interstellar matter and radio astronomy.

5960* Problems in Chemical Physics. 3-6 credits, maximum 6. Prerequisite: consent of instructor. Research problems to meet the requirements of the M.S. degree.

5110* Problems in Physiology. 1-5 credits, maximum 20. Prerequisite: approval of instructor. Investigations in physiology for graduate and advanced undergraduate students. Same course as ZOOL 5110.

5113* Basic Reproductive Physiology. Prerequisite: ZOOL 3204. Female and male reproductive processes, the influences of environmental factors upon these processes and the application of reproductive physiology to animal production. Same course as ANSl 5113.

5116* Veterinary Gross and Developmental Anatomy I. Lab 7. Prerequisite: first-year standing in the College of Veterinary Medicine or consent of instructor. Embryology and anatomy of domestic mammals using the dog as the primary model. Emphasis on the integration of developmental, gross, radiological, and applied aspects of veterinary anatomy as they relate to a topographical appreciation of the living individual. Integrated lecture-dissection laboratory format. An overview of domestic bird and laboratory animal anatomy.

5214 Veterinary Histology and Cytology. Lab 5. Prerequisite: first-year standing in College of Veterinary Medicine. Organization and structure of cells and tissues of domestic animals.

5134* Veterinary Physiology I. Lab. 4 hours per semester. Prerequisite: first-year standing in the College of Veterinary Medicine or consent of instructor. Medical physiology of basic control mechanisms, including the autonomic nervous system, blood and cardiovascular system, and respiratory and renal physiology of domestic animals.

5213* Comparative Physiology. Prerequisites: ZOOL 4243, BISC 3014 or BIOCH 3015. Comparative circulation, digestive, excretory, and sensory systems of vertebrates and invertebrates. Same course as ZOOL 5213.
PSYCHOLOGY

1113 (S)Introductory Psychology. Principles, theories, vocabulary, and applications of the science of psychology.

1123 Introduction to Research and Quantitative Methods in Psychology. Lab 2. Prerequisite: 1113. Survey of psychological research methods. Introduction to quantitative methods.

2136 Psychopathology and Human Problems. Prerequisite: 1113. Personality dynamics and their application to personal, cultural and vocational experience.

2137 Human Sexuality. Prerequisite: 1113. Survey of behavioral, personality and psychophysiological components of human sexuality, with special emphasis on the comprehension of facts from sexual myths.

2603 Computer-assisted Instruction. Lab 1. Prerequisite: 1113. Computer-assisted instructional (CAI) methods and theory surveyed. Learning process and learning technology reviewed within the CAI context. Laboratory activities include use of the microcomputer as an instructional device.

3013 Psychology of Motivation. Prerequisite: 1113. Review of research and theory in such areas as motivation as hunger, sex, frustration, aggression, achievement, affiliation, and altruism.

3073 Neurobiological Psychology. Prerequisite: 1113. Neural bases of human experience and behavior. Topics include sensation and perception, motivation and emotion, learning and thinking.

3113 Comparative Psychology. Prerequisite: 1113. Comparative study of behavior characteristics of selected samples of the animal kingdom from protozoa to humans.

3213 Quantitative Methods in Psychology. Prerequisites: 1113, 1123 or consent of instructor. Design and evaluation of research in psychology including scales of measurement, basic research designs, and quantitative procedures for data analysis, with emphasis on problems encountered in psychological research.

3223 (S)The Psychology of Work and Industrial Behavior. Prerequisite: 1113. Experimental literature in area of employee motivation. Techniques useful in measurement of employee attitudes and opinions.

3333 Industrial and Organizational Psychology. Prerequisite: 1113. Behavior in task group and organizational context with emphasis on management, leadership and human relations.

3413 Social Psychology. Lab. 1. Prerequisites: 1113, 3213. Contemporary theoretical and methodological issues in social psychology with special emphasis on the social psychological experiment and evaluation with the social aspects of human behavior.

3443 (S)Abnormal Psychology. Prerequisite: 1113, and 60 credit hours or 45 hours with GPA of 3.25. Review of major approaches to conceptualizing abnormal behavior including dynamic, social and learning-based theories. Discussion and illustration of the major forms of mental illness such as neuroses, psychoses and character disorders.

3513 Psychology of Learning. Prerequisites: 1113, 3213. Behavior change as a function of experience from relatively simple learning processes to classical and instrumental conditioning to highly complex processes such as verbal learning and concept identification.

3583 (S) Develop mental Psychology. Prerequisites: 1113, and 60 credit hours or 45 hours with GPA of 3.25. The nature of pertinent studies, concerns, and theories of human developmental phenomena across the life span.

3643 Applied Community Psychology. Prerequisite: 1113. Psychological principles for prevention, intervention and rehabilitation in the community model.

3651 Experience in Applied Community Psychology. Lab 3. Prerequisite: 3643 or concurrent enrollment. A field-experience-based application of psychological principles for prevention, intervention and rehabilitation in the community model.

3733* (H)Religion: Psychological Interpretations. Recommended: 2313 or REL 1103. A study of the development, theory and research of modern psychological perspectives on the religious experience. Same course as IDS 3733 and REL 3733.

3743 (S)Social Psychology. Prerequisite: 60 credit hours or 45 hours with GPA of 3.25. Theories and applications of social cognition, the self, pro-social and aggressive behavior, groups, attitudes and the environment.

3753 Freud’s Psychoanalytic Theories. Prerequisite: consent of instructor. A genetic approach to Freud’s system of psychoanalysis as a theory of personality and as a historically important method of psychotherapy.

3772 Careers and Professionalism in Psychology. Lab 1. Prerequisite: psychology major/minor. Current career options in psychology are reviewed and career skills developed. Skills and information that a professional psychologist needs in a work setting stressed.

3823 Cognitive Psychology. Prerequisites: 1113, 3213 or equivalent. Cognitive processes. Thinking, problem solving, visual imagery, attention and memory search. Both theory and application emphasized.

3914 Experimental Psychology. Lab 4. Prerequisites: 1113, 1123; 3213 or equivalent and five additional hours in psychology. Problems, methods and applications of experimental psychology.

3990 Undergraduate Seminar. 1-6 credits, 6 maximum. Prerequisite: consent of instructor. For honors students and other outstanding students. Special topics in psychology.

4123* (S)Psychology of Women. Lab 1. Prerequisite: 1113. Sex differences and the development of sex role behavior. Encompasses the psychological dynamics of developmental and social issues for women.

4133* (S)Psychology of Minorities. Prerequisite: 1113. Personality and behavior engendered by minority group status. Review of pertinent psychological theories and research.

4143 (S)Psychology and Law. Lab 1. New psycho-legal literature reviewed with emphasis on the psychological basis of voir dire, eyewitness behavior, courtroom persuasion, jury deliberation, and mental health issues.

4183* Current Issues in Clinical Psychology. Prerequisite: 1113, 3443 and three additional credit hours in psychology. Problems of the individual in contemporary society and various clinical approaches that have been proposed as possible solutions to these problems.

4213* Conflict Resolution. Prerequisite: 1113. Interpersonal conflict studied from psychological perspectives. Types and uses of conflict, and conditions for constructive dispute settlement.

4333* (S)Personality. Prerequisites: 1113, 2313, or 3443, or consent of instructor. Basic assumptions, research, and clinical issues relating to the major personality theories.

4483* Psychology of Parent Behavior. Prerequisite: 1113. Historical and contemporary conceptions of parent-child relationship and approaches to communication and discipline; special problems in parenting.

4493* (S)History of Psychology. Prerequisite: 1113. History of psychology as an aspect of European intellectual history. Psychological thought from early philosophical roots to modern conceptions of psychology as a science.

4813 Psychological Testing. Prerequisites: 1113, 1123, 3213. Quantitative aspects of measurement and testing, with emphasis on scaling, standardization, reliability and validity. Basic principles of construction and the ethics of use.

4880 Senior Honors Thesis. 1-6 credits, maximum 6. Prerequisites: 3213, departmental invitation, senior standing. Honors program participation. A guided reading and research program ending with an honors thesis under the direction of a faculty member. Required for graduation with departmental honors in psychology.

4990 Special Problems. 1-6 credits. 6 maximum. Prerequisite: 1113, 3213, or consent of instructor. For honors students and other outstanding students. Experimental or library research.

5000 Thesis. 1-6 credits, maximum 6. Required of all graduate students majoring in psychology and writing a thesis.

5054* Proseminar in General Psychology I. Prerequisite: graduate standing in the Department of Psychology and consent of instructor. Major theories, methodologies, and substantive issues in psychology. In addition to topics of current relevance, the historical background of psychology will be explored, and the significance of psychological work will be explored relative to the scientific status of the discipline.

5064* Proseminar in General Psychology II. Prerequisite: 5054, graduate standing in the Department of Psychology and consent of instructor. Continuation of PSYCH 5054.

5083* Principles of Behavior Therapy. Prerequisite: graduate standing in the clinical program of the Department of Psychology or consent of instructor. Principles and procedures of behavior therapy and modification.

5113* Psychopathology. Prerequisite: 15 credit hours of psychology, graduate standing in the Department of Psychology or consent of instructor. Principles of diagnosis and treatment of major disorders.

5120* Psychology Workshop. 2-6 credits, 6 maximum. Provides an opportunity to study specific psychological problems, both applied and theoretical.

5123* Minority Issues. Prerequisite: six credit hours of psychology and consent of instructor. Social issues related to pluralism with emphasis on community and social psychology.
PSYCHOLOGY


5153* Individual Mental Tests. Prerequisites: 3443, 4813; graduate standing in the clinical pro- gram of the Department of Psychology, the doctoral school psychology program or the psychometry program; or con- sent of instructor. Practice in understanding, administering and interpreting the Stanford-Binet, WAIS, WISC-R and other mental tests.

5173* Child Psychopathology and Treatment. Pre- requisites: 3443, 5563 or equivalent; graduate standing in the clinical program of the Depart- ment of Psychology, the doctorate school psy- chology program or the psychometry pro- gram, or consent of instructor. Theoretical positions and issues in child psychopathol- ogy. Procedures used in the treatment of psy- chological disorders of children.

5253* Seminar in Human Development. Prerequi- site: consent of instructor. Behavioral aspects of development from the prenatal period to senescence. Normal development contrasted to exceptional development.

5263* Personality Theories. Prerequisites: nine credit hours of psychology and consent of instructor. Various theories of personality.

5283* Community Psychology. Prerequisite: consent of instructor. Positive rehabilitative and pre- ventive objectives; application of psychologi- cal knowledge and skills to problems of social change and general improvement of the qual- ity of life. Physical, psychological and social factors viewed through system analysis.

5303* Quantitative Methods in Psychology I. Pre- requisite: 3213. Statistical methods of evaluat- ing research hypotheses in psychology. De- scriptive statistics. Students conduct one-way analysis of variance, comparisons among groups and statistical robustness are stressed.


5323* Theory and Methods of Scaling. Prerequi- sites: six credit hours of psychology and three hours in statistics. Theoretical and method- ological principles underlying paired compari- son, successive interval, ranking, scalogram and equal-appearing interval scales. The ap- plication of these measurement scales to re- search in the behavioral and social sciences.

5353* Psychology of Motivation. Prerequisite: 3914. Outline of theory and research tending in that are con- animal motivation.

5380* Research. 1-12 credits, 12 maximum. Pre- requisite: consent of instructor. Research project on some psychological problem.

5393* Verbal Processes. Consideration of task and subject variables, transfer and mediation, as- sociative processes and verbal behavior.

5413* Systems of Psychology. Two different mean- ings of “system” considered: the traditional mean- ing dealing with complicated psychological life and the modern meaning in which contemporary social problems are viewed as sets of interrelated variables that produce un- foreseen and remote effects.

5433* Psychology of Information Processing: De- cision Making. Attention, list processing, pattern recognition and related areas in terms of contemporary facts, theory and application. Special attention paid to de- scribing and analyzing aspects of information processing.

5443* Behavioral Medicine. Prerequisite: graduate standing in the clinical program of the Depart- ment of Psychology; consent of instructor. An advanced graduate course for students in train- ing for a Ph.D. in clinical psychology. General considerations for psychophysiological disor- ders, general intervention strategies in behav- ioral medicine including biofeedback, and spe- cific consideration and intervention strategies for specific disorders.

5483* Neurobiological Psychology. Prerequisite: 3073 and 3914 or consent of instructor. Physi- ological, neuroanatomical, and neurochemi- cal mechanisms of human behavior. Em- phasis on effects of central nervous system dysfunctions on behavioral processes rang- ing from sensation to concept formation.

5553* Experimental Learning Theories. Prerequi- site: nine credit hours of psychology. Basic concepts and empirical findings in animal and human learning.

5563* Advanced Social Psychology. Prerequisite: 3743. History, theory and experimentation of dynamic interaction of group membership and individual behavior.

5573* Experimental Social Psychology. Prerequi- site: 3743. Social psychology of psychologi- cal research with special emphasis on the conceptualization, planning, execution and ethical fulfillment in a laboratory or labora- tory-field experience.

5583* Developmental Psychology. Prerequisites: 3073 or equivalent; consent of instructor. An exploration of the biological aspects of human development, with particular emphasis on the psychological, ethological, and genetic per- spectives.

5620* Seminar in Psychology. 1-9 credits, 9 maxi- mum. Prerequisite: consent of instructor. Con- sideration of special topics that are particu- larly timely or technical in nature.

5640* Clinical Practicum. 1-12 credits, 17 maxi- mum. Prerequisite: graduate standing in the clinical program of the Department of Psychology. Emphasis on family practice only. Doctoral level counseling psychology students may also enroll. Practicum experience for gradu- ate students in the clinical psychology pro- gram.

5650* Practicum. 1-16 credits, 16 maximum. Prerequi- site: graduate standing in the clinical program of the Department of Psychology. Emphasis on family practice only. Doctoral level counseling psychology students may also enroll. Practicum experience for graduate students in the clinical program of the Department of Psychology who are doing supervised practicum in specific clinical areas of specialization.

5660 Teaching Practicum. 1-2 credits, 2 maximum. Prerequisite: consent of instructor. Primary- ly for graduate students with well-defined new teaching responsibilities.

5713* Projective Psychodiagnostic Methods. Pre- requisites: 5113, 5153; graduate standing in the clinical program of the Department of Psychology or consent of instructor. Administration and inter- pretation of projective tests such as the Rorschach, TAT, DAP and their derivatives.

5723* Child Diagnostic Methods. Prerequisites: 5153, 5173; graduate standing in the clinical program of the Department of Psychology or the doctorate school psychology program; or consent of instructor. Administration and in- terpretation of diagnostic instruments used specifically with children.

5753* Objective Psychodiagnostic Methods. Pre- requisites: 3443, 4813; graduate standing in the clinical program of the Department of Psy- chology; consent of instructor. Re- stricted to graduate students in programs designed to prepare students for the profes- sional practice of psychology. Complex objec- tive personality and interest tests and their diagnostic and clinical uses.

5823* Cognitive Processes. Theory and experimen- tal research findings dealing with human thought processes from a developmental and functional standpoint.

5853* Group Processes. Prerequisite: 3743. Analy- sis of both intragroup and intergroup behav- ior in small groups. Emphasis on experimen- tal research reported. Relationships of small groups to large groups, institutions and col- lective behavior.

5883 Seminar in Psychological Testing. Prerequi- sites: 5153, 5713, 5753, and graduate stand- ing in the clinical program of the Department of Psychology, or consent of the instructor. The administration, interpretation, and inte- gration of projective and objective personality and interest test data and intelligence test data with adult psychiatric patients.

5910* Internship in Mental Health. 1-6 credits, 6 maximum. Prerequisite: enrollment in mental health specialist program (M.S. option). Su- pervised clinical experience under the direc- tion of a qualified clinical psychologist in a mental health setting.

5900* Dissertation. 1-16 credits, maximum 60. Re- search and report thereon by graduate stu- dents in partial fulfillment of requirements for the Doctor of Philosophy degree.

5923* Research Design. Prerequisites: 3914, 5323, and doctoral level standing. Experimental tech- niques in psychophysics, sensory processes, attention and perception, motivation and emo- tion, and learning and memory.

5923* Computer Applications in Psychology. Pre- requisite: 5303 and 5513. Organizing experi- mental data for computer-assisted analysis. Emphasis on problems peculiar to within-sub- ject experiments used in psychology. Selec- tion, modification and creation of data analy- sis programs. A thorough knowledge of statistical techniques is assumed.

6233* Factor Analysis. Factor analysis and implica- tions for measurement of mental abilities, per- sonality traits and learning.

6313* Systems of Psychotherapy. Prerequisites: 5113, 5153; graduate standing in the clinical pro- gram of the Department of Psychology or consent of instructor. The major approaches to psychotherapy. Methods for creating muf- tiple relationships including interpersonal, social, community and prevent- ative interventions.

6393* Psychology of Language. Review of data and theories of speech and language behaviors. Labortechniques and experimental de- signs will also be reviewed to emphasize un- derstanding of psychological research.

6513* Graduate Treatment Methods. Prerequisites: 5113; graduate standing in the clinical pro- gram of the Department of Psychology or the doctorate counseling psychology program, or consent of instructor. Introduction to major techniques of group treatment including Geo- stalt and transactional analysis as well as more conventional techniques.

6523* Family Treatment Methods. Prerequisite: graduate standing in the clinical program of the Department of Psychology or the doctor- ate counseling psychology program. Intro- duction to techniques and family treat- ment. Includes marital counseling and emphasis on family dynamics.

6553* Advanced Practice in Marital and Family Treatment. Prerequisites: 6523, concurrent enrollment in counseling or clinical practi- cum; graduate standing in the clinical pro- gram of the Department of Psychology or the doctorate counseling psychology program, or consent of instructor. Advanced methods in assessment and treatment of marital and family problems. Skill development, professionalism, ethics and case management. Dynamics of co-therapy and conjoint treat- ment. Case consultation format. Same course as ASEB 6553.

6643* Psychopharmacology. Prerequisites: 3073 or 5054, consent of instructor. A comprehensive course dealing with the various classes of drugs that affect the central nervous system. Primary focus is on clinical research with hu- man psychopharmacology ranging from drug-re- ceptor interactions through substance abuse and behavioral disorders.

6673* Neuropsychological Assessment. Prerequi- sites: 5054 or 5483, and 5064 and 5153, 5753; graduate standing in the clinical pro- gram of the Department of Psychology or con- sent of instructor. Psychological assessment of the effects of cerebral damage or disease.

6933* Communication and Persuasion. Seminar concerning the communication process at all levels, from face-to-face encounters to the mass media. Discussion of the effects of the social- psychological factors that influence persua- sive attempts.

Religious Studies (REL)

1103* (H)The Religions of Mankind. Major world religions such as Hinduism, Buddhism, Jude- oism, Christianity and Islam with a view to understanding the general nature of religion and its various dimensions.

1113 Religion and Contemporary Issues. The na- ture of religion and its relation to current prob- lems, such as racism, sexism, hunger, ecol- ogy and war. 8 weeks only.

2123* Introduction to the Old Testament. The writ- ings of the Hebrew Scriptures with emphasis upon historical background, critical analysis and theological interpretation.


2513 Religious Groups in the United States. Se- lected religious groups in 19th and 20th century America. Emphasis on significant movements and groups outside of mainstream Christianity.
## 1103. An introduction to Islam, providing an
Introduction to the study of the beliefs and practices of Islam, and the
religious development of its various traditions. Prerequisite: Consent of
instructor. Conduct a research project (review
literature, prepare proposal, gather and analyze
data, write an essay). 3-6 credits, maximum 6.

## 2223. The Teaching of Jesus in Historical Context
Introduction to Jesus as a historical figure and his impact on the
development of religious and political ideas. Prerequisite: Consent of
instructor. Conduct a research project (review
literature, prepare proposal, gather and analyze
data, write an essay). 3-6 credits, maximum 6.

## 3533. Historical Issues in Biology and Medicine
Moral problems brought about by recent
developments in scientific research and medical
treatment. The role of euthanasia, genetic engineering,
and human experimentation. 3 credits.

## 3713. The Field of Social Work
An introduction to the study of social work.
Prerequisite: Consent of instructor. Conduct a research project (review
literature, prepare proposal, gather and analyze
data, write an essay). 3-6 credits, maximum 6.

## Sociology (SOC)

### 1113. Introduction to Sociology
The science of human society. Emphasis on the
ideas, values, and behavior of a society. 3 credits.

### 3952. The Field of Social Work
3 credits.

### 1113. Religious and the Arts
Sociological perspectives on the relationship between religion and art. Prerequisite:
Consent of instructor. Conduct a research project (review
literature, prepare proposal, gather and analyze
data, write an essay). 3-6 credits, maximum 6.

### 2223. Urban Sociology
Sociology of aging, including the analysis of the
social basis of personal and societal issues. Prerequisite:
Consent of instructor. Conduct a research project (review
literature, prepare proposal, gather and analyze
data, write an essay). 3-6 credits, maximum 6.
4013* Qualitative and Applied Social Research Methods. Prerequisites: 3113 and STAT 4013. Conducting qualitative research and meeting qualitative social research. Research design, data collection, analysis and write-up of evaluation research and social impacts assessments. Individual research project included.

4023* Juvenile Corrections and Treatment Strategies. Prerequisite: 3523 or 4333. The juvenile justice system emphasizing the juvenile court, diversion and youth service bureaus as well as the more traditional training schools and foster homes. Experimental treatment strategies with institutionalized delinquents.

4133* Quantitative Methods in Social Research. Prerequisites: 3113 and STAT 4013. Applying sociological theory to designing research; testing hypotheses by statistical techniques including sampling, scaling, use of documents and survey instruments. Applying research data to personal decision making and public policy questions. A research project is included.

4213* (S)Sociology of Human Sexuality. Prerequisite: junior standing or consent of instructor. Sociological and social psychological aspects of human sexual behavior, attitudes, and relations. Theoretical concepts, and research, and descriptive rates of behavior are discussed.

4333* (S)Sociology of Industry and Work. The interrelationship of the social order and work plant as a social system, work role behavior and special groups in industry and work.


4534* (S)Medical Sociology. Health and illness as social and societal phenomena including the doctor-patient relationship, distribution and etiology of disease, the social meaning of health and illness, basic epidemiology, and the health care system. Practical applications. Cross-cultural comparisons and the sociology of the health professions.

4538* Social Stratification. Systems of class and caste with special attention to the United States. Status, occupation, income and other elements in stratification.

4623* Community Organization and Development. Stress change and development of the local community in rapidly changing society. Emphasis on community organization and planned change.

4723* (S)Social Ecology and Life Processes. Human interdependencies and interrelationships with the social and physical environments, with special focus on the mutual impact of human values, human environment and life phase.

4443* Sociology of Law and Legal Institutions. Prerequisite: 3523 or 4333. Criminal law and civil law as mechanisms of social control; conflict and consensus models of legislation; legality doctrine and its application by police, prosecution and defense; courts and administrative agencies of control. Decision processes in the criminal justice system, personnel and case loads and related areas.

4513* Demography of Minorities. Compares several minority groups along major demographic dimensions, i.e., a comparison across minority groups as well as within minority groups. Emphasizes social, political and economic factors as affected by population variables.

4533* World Population Problems. Fertility, mortality and migration, and other factors related to population size, density, and composition; the population explosion, world famine, birth control, and other serious social issues.

4623* (S)Sociology of Industry and Work. The interrelationship of the social order and work plant as a social system, work role behavior and special groups in industry and work.

4633* Women: A Cross-cultural Perspective. Compares the roles of women in different types of societies (hunting and gathering, horticultural, peasant and agricultural). Social, familial, economic and legal status of women in American society. Same course as ANTH 4463.

4773* Social Casework Methods. Prerequisite: 3883 or consent of instructor. Methods for social work intervention with individuals, groups, and families. Concepts, techniques and assessment methods.

4850 Internship in Sociology. 1-4 credits, maximum 4. Prerequisites: 3952, completion of 12 hours of sociology, or consent of internship coordinator. Field experience in a variety of work settings.

4923* The Field of Corrections. An overview of correctional work focusing on probation, parole and institutions. A survey of contemporary alternatives to conventional imprisonment.

4953* Social Welfare as a Social Institution. Problems, skills, and strategies involved in social welfare planning. Emphasis on improving social welfare policy through program management and macro-level social work skills.

4990 Exploration of Sociological Issues. 1-3 credits. Prerequisite: consent of instructor. Examines sociologically significant topics and issues.

4993 Senior Honors Thesis. Prerequisites: departmental invitation, senior program participation. A guided reading and research program ending with an honors thesis under the direction of a senior faculty member, with second faculty reader and oral examination. Required for graduation with departmental honors in sociology.

5000 Thesis in Sociology. 1-6 credits, maximum 6.

5113* Sociological Theory I. Prerequisite: 3113 or equivalent. Major trends in sociological thought, 1800-1920. The emergence of sociological theory in Europe and America.

5213* Methods of Demography. Prerequisite: STAT 4013. Introduces the student to methods of collecting and analyzing data in the field of demography. Emphasizes population analysis utilizing the three basic variables: birth, death and migration and the attendant statistical mathematical applications.

5243 Social Research Design and Analysis. Techniques in design, data collection, analysis and interpretation of data for qualitative and quantitative sociological research.

5253* Sociology of Small Groups. Prerequisite: 2223 or equivalent. Structural variation, ordering, communication, social bonding and task performance in small-group association.

5263* Methods of Social Research II. Prerequisite: 4513 and STAT 4013, or equivalents. Advanced techniques in sociological research and data analysis focusing on the formulation of substantive research questions and application of a variety of statistical techniques and computer programs to answer such questions.

5273* Qualitative Research Methods. Examination of ethnographic studies and implementation issues associated with qualitative research. Research project required.

5323* Social and Cultural Change. Classical and modern theories of social, cultural and societal change. Particular emphasis on societal development in the modern world system and its impact on individuals and social relationships.

5353* Social Systems Analysis. Relations between properties of relatively large social systems. Emphasis on theories relating these variables, empirical derivations of their measures and research concerning their interrelations.

5533* Functional Institutions and Residential Treatment. Prerequisite: 4923 or equivalent. Nature and effects of custodial institutions on the inmates. Prison community, its structure, social processes and development, resocialization of prison inmates in new vocational and social skills.

5563* Community Treatment of Offenders. Prerequisite: 4923 or equivalent. Treating offenders in the community without incarcerating them in prisons. Probation, parole and other rehapilitative services. Impact of new community treatment centers, group homes, probation hotels and halfway houses. Effectiveness of the individual, group and family therapies on the offenders.

5753* Complex Organizations. Prerequisite: six hours of undergraduate sociology or equivalent. Nature and types of complex organizations: organizational structure, organizations and society; organizational changes.

5883* Sociology of Education. Manner in which social forces and institutions influence education and the educational system in the United States.


5990 Advanced Problems and Issues in Sociology. 1-9 credits, maximum 9. Prerequisite: consent of instructor. Group enrollment or seminar research emphasis.

6000* Directed Study. 1-12 credits, maximum 18.

6110* Sociological Theory II. 2-3 credits, maximum 6. Critical examination of significant theoretical formulations, 1920 to the present. Relation between theoretical development and current research emphasis.

6213* The Sociology of Knowledge. Prerequisite: six hours of undergraduate sociology or equivalent. Relationship between human thought and the social context within which it arises.

6260* Seminar in Current Research Literature. 2-3 credits, maximum 6. Methodological analysis of advanced research in major areas of sociology.

6390* Seminar in the Family. 2-3 credits, maximum 6. Intensive analysis of published research in the sociology of the family.

6420* Seminar in Urban Sociology. 2-6 credits, maximum 6. A theoretical and applied approach to cross-cultural urban studies. Examines different methodologies for urban community analysis.

6450* Seminar in Social Psychology. 2-3 credits, maximum 6. Research and literature relating to macro-social analysis.

6650* Seminar in Social Psychology. 2-3 credits, maximum 6. Development and critical analysis of research in social psychology.

6750* Seminar in Deviance and Criminology. 2-3 credits, maximum 6. Current research and theory in criminology, penology and deviance in modern society.

6950* Seminar in Social Gerontology. 2-3 credits, maximum 6. A theoretical and practical examination of the sociological implications, both individual and societal, of an aging population.

Spanish (SPAN)

1115 Elementary Spanish I. Lab 1 1/2. Pronunciation, conversation, grammar and reading.

1225 Elementary Spanish II. Lab 1 1/2. Prerequisite: 1115, or equivalent.

2112 Intermediate Reading and Conversation I. Lab I. Prerequisite: 1225 or equivalent. (May have been gained in high school.) Reading and discussion of simpler Spanish texts, mostly cultural. May be taken concurrently with other 2000-level Spanish courses.

2113 Intermediate Conversation and Composition I. Lab I. Prerequisite: 1225 or equivalent. (May have been gained in high school.) Review and further presentation of grammar and pronunciation; consolidation of basic skills, with additional emphasis on writing. May be taken concurrently with other 2000-level Spanish courses.

2222 Intermediate Conversation and Composition II. Lab I. Prerequisite: 2113 or equivalent. (May have been gained in high school.) Reading and discussion of more advanced Spanish texts, mostly literary. May be taken concurrently with other 2000-level Spanish courses.

3003 Survey of Spanish Literature. Prerequisite: 20 credit hours of Spanish or equivalent. Development of Spanish and Spanish-American literature to the present. Class conducted in Spanish.
3200 Advanced Conversation and Composition. 1-3 credits. Maximum 9. Prerequisite: 20 credit hours of Spanish or equivalent. Reading and discussion of selected texts outlining the development of contemporary Spanish civilization. Classes conducted in Spanish.

3463 Advanced Diction and Phonetics. Lab. 1. Prerequisite: 20 credit hours of Spanish or consent of instructor. Required course for teacher certification/licensure. Spanish speech sounds and intonation patterns, with practice to improve the student’s pronunciation.

4113 (H)Chicana Literature and Civilization. Prerequisites: 20 credit hours of Spanish or equivalent competence. Reading, analysis, and discussion of the most outstanding works produced in Chicana literature developed since 1948. Contemporary works are emphasized. Classes conducted in Spanish.

4173 (H)Hispanic Drama. Prerequisite: 20 credit hours of Spanish or equivalent competence. Reading and interpretation of dramatic works selected from the Hispanic literature.

4220 20th Century Hispanic Literature. 1-3 credits, maximum 3. Prerequisite: 20 credit hours of Spanish or equivalent. Major 20th Century Hispanic writers. Classes conducted in Spanish.

4243 Translation and Writing of Documents. Prerequisite: 20 credit hours of Spanish or equivalent competence. Translation of documents produced by government agencies, universities, business and industrial organizations. Writing of letters, memos and contracts.

4253 (H)Masterpieces of Hispanic Literature I. Prerequisite: 20 credit hours of Spanish or equivalent competence. Reading and analysis of classics selected from the Hispanic literatures.

4263 (H)Masterpieces of Hispanic Literature II. Prerequisite: 20 credit hours of Spanish or equivalent competence. Reading and discussion of selected texts outlining the development of contemporary Hispanic Civilization outside the Iberian Peninsula. Classes conducted in Spanish.

4550 Seminar in Spanish. 1-3 credits, maximum 9. Prerequisite: 20 credit hours of Spanish or equivalent. Readings and discussion of vital subjects in Spanish.

5110 Advanced Hispanic Studies. 1-3 credits, maximum 9. Prerequisite: 22 hours of Spanish or graduate standing in foreign language.

5763* Seminar in Organizational Communication. Consultancy. Diagnostic measures for identifying communication problems in organizations. Preparation of a research paper or intervention programs to solve such problems.

Speech Pathology (SPATH)


2113 Introduction to Communication Disorders. Prerequisites: 2213 (previous or concurrent enrollment) and sophomore standing. The nature, symptoms, etiology and diagnosis of major speech and language disorders. Methods and techniques utilized in the correction of speech and language disorders. Direct therapy observations.

2213 Phonetics. Prerequisite: sophomore standing. The sounds of English from the standpoints of their production, reception and symbolic use. Extensive practice transcribing English into the international phonetic alphabet.

3010 Pre-clinical Clinical Experience. 1-3 credits, maximum 6. Prerequisite: 2113 or equivalent or concurrent enrollment. Observation and participation in speech and language pathology and audiology clinical activities.


3213 Communication Disorders in the Classroom. Prerequisite: sophomore standing. The normal development of speech and language. The nature, causes and symptoms of communication disorders. Instruction in identification, referral and classroom management of the communicatively handicapped child.

3224 Language Development. Prerequisites: 2113, 2213. Language foundations in infants and toddlers. Description and explanation of spoken and written language development through adolescence.

4010 Clinic Practicum. 1-3 credits, maximum 3. Lab 2. Prerequisites: 3010, 4011, 4312, 4323, senior standing. Supervised clinical practicum in speech-language pathology and audiology.

4011 Basic Practicum Theory. Prerequisite: second semester junior standing. Fundamental learning theories as they relate to speech-language pathology; techniques of observing, assessing and recording speech and language behaviors; writing treatment plans and progress reports.

4021 Intermediate Practicum Theory. Prerequisites: 3010, 4011, 4312, 4323, senior standing. Professional issues, ethics, organizations, and practices in speech-language pathology and audiology. Written and oral communication skills in the practice of speech-language pathology and audiology.

Speech Communication (SPCH)

2713 Introduction to Speech Communication. Principles and techniques of preparing for, participating in and evaluating communication behavior in the conversational interview, the group discussion, and the public speech. A competency-based approach.

2714 Speech Activity Participation. 1-3 credits, maximum 6. Preparation for, and participation in, small group activities. A speech communication course that integrates theoretical concepts with small group process. Small group communication concepts and principles focus on the development of small group process and the integration of theoretical concepts.

2730 Small Group Communication. General systems approach to small group processes. Special consideration given to group roles, norms, leadership and decision making. Participation in various types of discussion groups.

2734 Employment Interviewing. Lab. 1, Prerequisite: junior standing. Prepares student to understand, prepare for, and participate in employment interviews. Resumes, researching job opportunities and other forms of preparation for an interview.

2740 Practicum 1. 1-2 credits, maximum 2. Prerequisite: speech communication major. Communication facilitation for the speech communication major, with student’s initial role as interventionist.

2750 Practicum 2. 1-2 credits, maximum 2. Prerequisite: speech communication major. Communication facilitation for the speech communication major, with student’s initial role as interventionist.

2760 Practicum 3. 1-2 credits, maximum 2. Prerequisite: speech communication major. Communication facilitation for the speech communication major, with student’s initial role as interventionist.

2770 Practicum 4. 1-2 credits, maximum 2. Prerequisite: speech communication major. Communication facilitation for the speech communication major, with student’s initial role as interventionist.

2780 Practicum 5. 1-2 credits, maximum 2. Prerequisite: speech communication major. Communication facilitation for the speech communication major, with student’s initial role as interventionist.

2790* Advanced Practicum. 1-2 credits, maximum 2. Prerequisite: consent of instructor. Supervised research projects in speech communication.

4723 Verbal Communication. The nature, function and structure of verbal behavior. Cognitive, linguistic and social influences on verbal communication and its development.

4743* Problems of Interpersonal Speech Communication. Application of communication theory to interactions in person-to-person settings. Identification and management of barriers related to the concepts of perception, attraction, self-disclosure, listening and conflict.

4753* (H)Intercultural Communication. Social and cultural differences between individuals from diverse backgrounds as possible barriers to effective communication.

4763 Organizational Communication. The interface between communication theory and organizational structure. Nature of communication problems in organizations, strategies for overcoming such problems and the design of effective communication systems in organizational settings.


4793* (S)Nonverbal Communication. Nonverbal aspects of speech communication.

4993 Senior Honors Thesis. Prerequisites: departmental invitation, senior standing, Honors program participation. A guided reading and research program ending with an honors thesis under the direction of a faculty member. Required for graduation with departmental honors in speech communication.

500* Research and Thesis. 1-3 credits, maximum 6. Prerequisite: approval of major professor. Research in speech and audiology.

5013* Introduction to Graduate Study. Research methods with special emphasis on those used most frequently in communication research; professional opportunities in the various speech fields; practical experience in outlining a piece of research.

5023* Introduction to Quantitative, Research in Speech Communication. Methods and major findings of empirical research in speech.

5210 Advanced Practicum. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Practicum experience for advanced students on and off campus.

5710 Seminar in Speech. 1-3 credits, maximum 9. Individual and group investigations of problems in speech communication, theater, and speech pathology and audiology.

5713 Rhetorical Theory. Contemporary rhetorical theory focusing on the processes of social influence.

5723 Oral Communication Theory. Modern theories dealing with symbolic and communicative behavior.

5733* Human Relations in Organizations. The place of oral communication in decision-making in organizations. Relationship of oral communication to organizational structure, organizational needs, patterns of leadership and techniques of information collection.
SPEECH PATHOLOGY

4124* Anatomy and Physiology of the Speech Mechanism.

4131* Speech Science. Prerequisite: 4124. Research on the acoustic parameters, the perceptual and productive processes of speech and the interpersonal relationships of these factors during speech communication. Laboratory applications.


4333* Voice Disorders. Prerequisite: 4313. The voice mechanism; examination, testing, and voice deviation. Recent research on diagnostic and remediation procedures for hoarseness, pitch deviation, laryngectomy, and other laryngeal conditions.


4993 Senior Honors Thesis. Prerequisites: departmental invitation, senior standing, Honors program satisfactory standing, and participation in a research program ending with an honors thesis under the direction of a senior faculty member, with second faculty reader and oral examination. Required for graduation with departmental honors in speech pathology.

5000* Research and Thesis. 1-3 credits, maximum 6. Prerequisite: approval of head of department. Research in speech and language pathology and audiology.

5013* Intermediate Statistical Analysis. Prerequisite: 2023 or consent of instructor. Application of elementary statistics, introductory experimental design, introduction to the analysis of variance, simple and multiple linear regression, correlation and simple linear regression. No credit for students with credit in 2023.

5201* Advanced Practicum. 1-6 credits, maximum 9. Prerequisite: consent of instructor. Practicum experience for the advanced student on or off campus.

5243* Language Disorders of School-Age Children and Adolescents. Prerequisite: 4232 or consent of instructor. Linguistic, cognitive and pragmatic deficits of high-risk school-age children and adolescents; impact of spoken and written language deficits on academic achievement. Assessment and intervention strategies.

5251* Seminar in Diagnostic Methods. Prerequisite: 4252. Applications of techniques used in the evaluation of speech and language disorders.

5263* Normal and Disordered Communication in an Aging Population. Description of normal age-related changes in communication skills and the impact of age-related changes on those who require specially-adapted educational intervention programs.

5710* Special Topics in Communication Disorders. 1-4 credits, maximum 9. Prerequisite: approval of department head. Individual and group investigations of problems in speech and language pathology and audiology.

Statistics (STAT)

5203(3) Mathematics I. Prerequisite: MATH 1513. An introductory course in the theory and methods of statistical communication disorders, elementary probability, samplings, estimation, hypothesis testing, correlation and regression. No credit for students with credit in 2023.

5223(3) Mathematics II. Prerequisite: MATH 3013. Statistical inference for students who are not majoring in statistics or mathematics. Probability, dependence and independence, random variables, univariate distributions, multivariate distributions, moments, functions of random variables, weak laws of large numbers, central limit theorems.


5405* Statistical Methods for Engineers II. Lab 2. Prerequisite: 4043, 4053, 4053 or consent of instructor. A continuation of 4013 and 4023, concentration on nonparametric methods. Applications to normal-theory statistical methods; analysis of categorical and ordinal data. No credit for students with credit in 4023 or 4053.

5409* Statistical Analysis System. Prerequisite: one of 4013, 4053, 4053 or equivalent. SAS dataset construction, elementary statistical analysis, and use of statistics and graphics procedures available in the SAS package.

5410* Introduction to Probability Theory. Prerequisite: MATH 2365 and one other course in MATH which has either 2265 or 2365 as a prerequisite. Basic probability theory, random events, dependence and independence, random variables, moments, distributions, functions of random variables, weak laws of large numbers, central limit theorems.

5421* Mathematical Statistics I. Prerequisite: MATH 2365. Introduction to probability theory for students who are not majoring in statistics or mathematics. Probability, dependence and independence, random variables, univariate distributions, multivariate distributions, functions of random variables, weak laws of large numbers, central limit theorems.

5423(3) Introduction to Statistical Inference. Prerequisites: 4113 and MATH 3013. Sampling distributions, point estimation, maximum likelihood methods, interval estimation, hypothesis testing, sufficiency, completeness.

4050* Research for Statistics. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Special subjects in statistics.
3533 * Theory of Linear Models II. Prerequisite: 5323. Advanced regression topics; mean model theory and application to fixed models; orthogonal polynomials; data structures, observational and sum of squares identities, mean model identities. Building linear models from data structures, parameterizations and reparameterization, conventional linear model theory, variance components, computing techniques.

5403 * Theory of Sample Design. Prerequisite: 4113 or 4203. Deriving estimates and variances of estimates for different sampling designs. Mathematical development of sampling. Consideration of simple probability sampling including simple random, stratified random, cluster and multistage sampling. Estimation techniques including ratio and regression techniques. Determination of sample sizes and allocations.


5910 Seminar in Statistics. 1-6 credits, maximum 12. Special studies for master’s students. Survey and discussion of research in mathematici- cal statistics and statistical methods.

6000 Research and Thesis. 2-10 credits, maximum 24. Prerequisite: consent of advisory committee and instructor. Development and execution of research culminating in the Ph.D. thesis.

6013 * Genetic Statistics. Prerequisites: 4213 or 4223, and ANSI 6003; or consent of instructor. Concepts and models for quantitative traits, genetic relationship and linkage. Theory of selection and crossbreeding. Mathematical techniques in inbreeding. Path coefficient theory.


5213 * Advanced Statistical Inference. Prerequisites: 5113, and 5203 or 5213. Point estimation, maximum likelihood, Cramer-Rao inequality, confidence intervals, Neyman-Pearson theory of testing hypothesis and power of test.

6323 * Advanced Design of Experiments. Prerequisite: 5303 and 5323 or consent of instructor. Construction of various experimental designs, such as mutually orthogonal series of Latin Squares, balanced incomplete block designs, complete block designs, confounded and fractionally replicated designs. Response surface methodology and factorial arrange- ments of treatments. Confounding of factorial effects. Fractional replication of factorial designs, confounding in mixed series of factorials, randomization tests, transformations of data, optimization techniques and principles of split-plot tech- niques. Analysis of series of experiments and analysis of covariance.

6101 * Special Problems. 1-6 credits, maximum 12. Investigation of special problems in the theory and application of statistics using current tech- niques. Special studies for Ph.D. level stu- dents.

3103 Introduction to Technical Education. Prereq- uisite: CAED 3113. The role and function of technical education in the development of hu- man resources. Historical and philosophic bases for technical education with emphasis on pro- grams, purposes, and objectives and the vari- ety of environments in which such programs exist. Instructional Aids. Materials and hardware currently available in typical vocational and technical education programs. Practice in the development of projected and nonprojected materials. Each student develops instructional aids appropriate for use in the special- ity. Comparative Occupational Education. Prerequisite: graduate standing, ideas, practices and systems of occupational education in other countries compared with contemporary prac- tices in the United States to provide a basis for an enlarged, critical view of technical educa- tion. Curriculum Development in Technical Edu- cation. The interrelationship of mathematics, science, technical specialty and general edu- cation in technical curricula. Contemporary practices in constructing, revising and evalu- ating technical curricula. Occupational Analysis. Techniques for deter- mining educational requirements of technical occupations. Analysis systems used by edu- cational institutions, the military and the United States Department of Labor.


3002 Introduction to Industrial Technology Educa- tion. Prerequisite: consent of instructor. Rad- ical curriculum education, including the histori- cal and philosophic bases for such programs. Purposes, objectives and functional con- temporary industrial arts and technology educa- tion programs in public schools. Participa- tion in off-campus observation experience in the public schools.

3101 Industrial Tools and Equipment. Lab 3. Proper selection, use and care of shop and laboratory tools and equipment. Laboratory exercises in the purchase, maintenance and repair of tools and equipment commonly used in the indus- trial arts programs of local schools.

3022 Theory and Practice in Home Maintenance. Lab 2. Principles of home maintenance and practice in the use of tools, equipment and materials necessary to maintain properly func- tioning heating, cooling, plumbing and electric sys- tems.


3033 Materials and Processes. Lab 4. Introduces students to the basic properties of metallic, polymeric, wood, ceramic and composite ma- terials and the proper techniques used to con- vert these materials into products. Special atten- tion is given to the safety and care of the industrial equipment.

3043 Constructing Structures. Lab 3. Prerequisite: 3033 or equivalent or consent of instructor. Comprehensive study of the activities involved in preparing to build, building, and complet- ing residential, commercial, industrial, and civil structures.

3053 Teaching Technology in the Elementary School. Educational projects and activities for stimulating student interest in technology. Analysis of the development of technology in- dustrations, concepts, and systems of technol- ogy. Practical aspects of planning, designing, and integrating technology-based activities into elementary and special education cur- riculums.

3103 Architectural Drawing. Lab 3. Prerequisites: GEOL 1021 or equivalent or consent of instructor. Architectural drafting skills and information based on current draft- ing standards and trends in the architectural industry. Preparation of a complete set of drawings in residential or light commercial drafting. Computer graphics as a drafting tool.


3301 * Metrics Measurement for Occupational and Adult Education. Practical applications of the International Metric System as it relates to industry and technology. Prefixes, exponents and symbols, weights and mass, length, vol- umes and temperature with practical exercises in calculations, conversions, and the use of terminology.

3312 Manufacturing Materials and Testing. Lab 3. Physical properties and testing of materials used in industry such as metals, woods, plas- tics, ceramics, cements, adhesives and fas- teners; stresses the use of such materials in industrial arts and technology education pro- grams.

3323 Manufacturing Processes. Lab 4. Prerequi- site: 3303 or permission of instructor. Meth- uns and procedures for processing materials used in product manufacturing and develop- ment. Laboratory activities in processing materials with implications for indus- trial arts and technology education programs in the public schools.

3333 Industrial Communication Graphics. Lab 4. Methods and techniques for the visual com- munication of information and ideas. The ele- mental aspects of drafting are presented in preparing black and white or color phototypes into a total concept of modern graphic communication.

4323 Methods for Teaching Technology Education. Lab 3. Prerequisite: 3033, 3303 or 3550 or consent of instructor. Unique methods and activities are specifically adapted for and re- lated to the systems of technology education. Fundamental and specific methods prepara- tion for those students planning to teach tech- nology education in the public schools.

3553 * Fundamentals of Power Technology. Lab 3. Prerequisites: 3033, 3034 or 4203, 4223, or 4053 or 5023. Deriving estimates and variances of estimates for different sampling designs. Mathematical development of sampling. Consideration of simple probability sampling including simple random, stratified random, cluster and multistage sampling. Estimation techniques including ratio and regression techniques. Determination of sample sizes and allocations.

3672 Fundamentals of Power Transmission. Lab 2. Basic mechanical and electrical principles including mechanical, hydraulic and pneumatic systems. Design and selection of power sources, piping, filtration, actuators and actuators for programs of industrial arts and technology education.

4013 * Research and Development in Industrial Technology Education. Lab 3. Special study in research and development conducted in an industrial and educational setting. Laboratory activities in performing basic tasks associated with product and process research and development.


4322 * Industrial Technology. Materials and manufacturing and processing techniques including automation and distribution systems as observed in films, field trips and lectures. Employer-employee relations are studied as the human element in the system.

4343 * Curriculum Development in Industrial Tech- nology Education. Prerequisite: admission to Teacher Education. Principles, practices and problems in construction of industrial arts and technology education curricula.

4440 * Industrial Crafts. 1-2 credits, maximum 6. Development of knowledge and skills in work- ing with materials, tools and equipment used in various industrial crafts. Special emphasis placed on specific crafts that are most appli- cable to the elementary and special education curriculum.
TECHNOLOGY EDUCATION

5200 Seminar in Industrial Technology Education. 1-3 credits, maximum 6. Oral and written discussion of selected current interest topics concerning industrial arts and technology education. Forum for review of research proposals, student programs, other projects and timely topics having an impact on the industrial arts and technology education profession.

5133 Teaching Technology Education. Prerequisite: 3423 or equivalent, or consent of instructor. Advanced techniques and activities associated with teaching technology education systems. Specific emphasis on scientific inquiry, decision making, problem-solving concepts and activities in the public school technology education programs.


5340 Special Problems in Technical Content in Industrial Arts and Technology Education. 1-3 credits, maximum 6. Prerequisites: 3033 and 3323 or equivalent or consent of instructor. Problems associated with the technical content areas in industrial arts and technology education. Introduction of new and advanced technological systems into the curriculum of public school technology education programs.

5443 Special Problems in the General Shop. Problems concerning the organization and management of classes and personnel organizations, as well as special teaching methods and class control.


5663 Special Problems in Industrial Drawing. Special problems, techniques and methods applicable to the teaching of mechanical drawing in industrial arts courses. Selection and use of equipment, preparation of course materials and practice in the application of advanced techniques.

Theater (TH)

1000 Theater Practicum. Lab. 2. 1 credit, maximum 6. Laboratory experience in theater production: acting and crew assignments. Graded on pass-fail basis.

1910 Voice and Diction. Freeing the natural voice; development of proper breathing techniques, resonance, and range; use of International Phonetic Alphabet in developing articulation and pronunciation; exercises in phrasing and intonation; preliminary dialect work.

2413 (H)Introduction to the Theater in Western Civilization. Character, plot, theme, historical and production analyses of various types of plays; understanding of the work of various theater artists; developing appreciation of audience; scene performance workshops.

2613 Technical Production I. Lab. 4. Elementary techniques of stagecraft, lighting and costume for the stage. Emphasis on basic skills. Practical experience preparing for Departmental productions.

3010 Upper-division Projects. 1-3 credits, maximum 6. Prerequisites: 60 credit hours and consent of instructor. Individual or group study of techniques, history, or literature of the theater. Required written survey of the project and self-evaluation of its results, or a term paper.

3453 Acting II. Prerequisite: 2453. Continuation and refinement of 2453. Emphasis on textual and character analyses, characterization, and inner motivation. Exploration of audition techniques and realistic comedy through scene work with contemporary plays.

3623 Technical Production II. Lab. 4. Prerequisite: 2613. Continuation and refinement of skills from 2613. Introduction of conceptualization principles and skills. Practical experience preparing for departmental productions.


3883 Stage Movement for Actors. Techniques and exercises to build the actor's awareness and abilities for use of the bodily instrument on stage; preparation and readiness routines; rhythms, postures, and movement patterns appropriate to various styles of theater and to specific character roles.

4253 Acting III. Prerequisite: 3453. Continuation and refinement of 3453. Exploration of performance techniques in classical to modern acting styles—Shakespeare to Miller.

4413 Lighting for Theater and Television. Lab. 2. Stage lighting design, elementary electricity, design of lighting instruments. Practical experience in lighting in preparing for productions.

4433 Scene Design for Theater and Television. Prerequisites: 2613 and 2623. The designer's approach to the design of settings: composition of sketches, models and working drawings.

4443 Directing. Prerequisite: 2453. Emphasizes play analysis for production, problems in staging, and the role of the director. Planning and direction of scenes in laboratory situations.

4453 (H)Theater History I. Aesthetic and social relationships of theater and western civilization from primitive times to the mid-17th century.

4453 (H)Theater History II. Aesthetic and social relationships of theater and western civilization from the mid-17th century through the 19th century.

4473 Theater History III. Aesthetic and social relationships of theater and western civilization from the 19th century to the present.

4503 Theater Graphic Techniques. Fundamental theater graphic techniques to communicate theatrical design ideas.

4713 Stage Costume History I. Lab. 2. Comprehensive history of theatrical costume from ancient Egypt to 1700. Impact of fashion on the stage. Practical experience preparing for departmental productions.

4723 Stage Costume History II. Lab. 2. Comprehensive history of theatrical costume from 1700 to the present. Impact of fashion on the stage. Practical experience preparing for departmental productions.

4813 Stage Costume Design. Lab. 4. Prerequisites: 2413 and 2613 and 2623. Basic treatment of costume design; practical application of costume design sketches. Style of stage costume. Practical experience preparing for departmental productions.

4993 Senior Honors Project. Prerequisites: departmental invitation, senior standing, Honors program participation. A guided reading and research project ending with an honors thesis or literature of the theater. A term paper or written report and self-evaluation of the study or project is required.

5090 Individual Theater Projects. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Individual projects in directing, acting, or design and technology for a specified theater production, with concept, realization, and self-evaluation under faculty guidance.


5422 Problems in Advanced Directing. Prerequisites: 4443, consent of instructor. Problems in directing period styles, especially Shakespeare. Restoration comedy, absurdist drama, and avant-garde drama. Preparation, rehearsal and staging of a complete production.

5453 Problems in Advanced Acting. Prerequisite: 4253 and 4263 and consent of instructor. Experimentation in psychological realism. Concentration on analysis, technical skills, and contacting the emotions. Special preparations for professional interviews and auditions.

Trade and Industrial Education (TIED)

3203 Introduction to Trade and Industrial Education. Opportunities provided by vocational education, with special emphasis on trade and industrial education programs. Other projects and timely topics having an impact on the industrial arts and technology education profession.

4103 Instructional Procedures in Trade and Industrial Education. Prerequisites: 4344 and full admission to Teacher Education. Methods and techniques for effective teaching and learning in classroom and shop instruction. Emphasis on the use of instructional aids and computer-assisted development. No credit for students with credit in OAES 4103.

4110 Trade Technical Information. 1-4 credits, maximum 6. Prerequisite: consent of instructor. New developments in scientific and technical information and knowledge that are relevant to current trade practices.

4123 Coordinating Trade and Industrial Youth Activities. Youth clubs in vocational education at local, state and national levels. Procedures for planning programs of work, incorporating youth activities into curriculum, adviser characteristics and responsibilities, fund-raising activities, and techniques for recognizing outstanding members and community supporters.

4214 Safety, Organization and Management of Learning Facilities. Prerequisite: full admission to Teacher Education. Techniques and procedures for organizing and managing shop and laboratory facilities and learner activities to enhance the quality of instruction and improve efficiency of equipment and space utilization including all safety rules and procedures.

4344 Trade Analysis and Instructional Planning. Prerequisite: full admission to Teacher Education. Analysis of trades and occupational job activities; development of course outlines and specific instructional materials for shop and laboratory courses.

5114 Interdisciplinary Cooperative Education. Prerequisites: 3203 and 4344. Techniques and procedures for coordinating cooperative education programs. Includes planning, organizing, implementing and evaluating effective cooperative programs.

5163 Supervision of Vocational Education. Prerequisite: consent of instructor. Role and function of administrators responsible for supervising the planning, implementation and management of vocational education programs.

5223 Evaluation of Instruction. Prerequisite: 4103. Principles of evaluation and methods for applying these principles to improve the effectiveness of vocational education programs.

5232 Teaching Related Information. Selection of job-related topics common to most trades with procedures for incorporating those topics into the regular curriculum.

5313 Guidance, Placement and Follow-up in Occupational Education. Principles of placement and follow-up in teacher-counselor cooperation in vocational student advisement, placement and follow-up.

5443 Individualizing Competency-based Instruction Programs. Develops knowledge and skills utilizing the concept of open entry/open exit necessary for planning, developing and implementing a competency-based vocational education program.
Veterinary Medicine (VMED)

5111 Veterinary Medical Orientation I. Prerequisite: permission of the Department of Veterinary Medicine. Veterinary medical terminology, history and ethics of the profession, veterinary surveys of the biological kingdom, selected techniques and clinical presentations and special topics. Graded on pass-fail basis.

5221 Veterinary Medical Orientation II. Prerequisite: 5111. Major breeds of animals; veterinary perspectives concerning animal production and marketing systems; selected techniques and clinical presentations; and special topics. Graded on pass-fail basis.

6610 Clinical Science elective. 1-8 credits, maximum 8. Prerequisite: third-year standing in the College of Veterinary Medicine. Problems in the clinical sciences. Graded on pass-fail basis.

6611 Veterinary Medical Specialty Conference. Prerequisite: third-year standing in the College of Veterinary Medicine. Special conference for third-year veterinary medical students presented by visiting professionals. A listed number of field trips will be conducted in which special presentations will be made.

6720 Veterinary Medical Clinic Conference I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Presentation and discussion of selected clinical cases by fourth-year students and interdepartmental faculty groups. Graded on pass-fail basis.

6821 Veterinary Medical Clinic Conference II. Prerequisite: 6711. Presentation and discussion of selected clinical cases by fourth-year students and interdepartmental faculty groups. Graded on pass-fail basis.

Veterinary Medicine and Surgery (VMS)

5412 Jurisprudence and Medical Economics. Prerequisite: second-year standing in the College of Veterinary Medicine. Veterinary jurisprudence, medical economics, ethics, public relations, records, banking, insurance, U.S.D.A. and P.D.A. regulations. Visiting lecturers in specialty areas assist in this course.

5422 Veterinary Surgery I. Prerequisite: second-year standing in the College of Veterinary Medicine. The pathophysiology of surgery including an introduction to techniques in veterinary surgery and anesthesia.

5431 Veterinary Radiology I. Prerequisite: second-year standing in the College of Veterinary Medicine. Veterinary radiology, radiological diagnosis and therapy; use of radioisotopes in veterinary medicine.

6002 Elective I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Continuation of clinical rotations.

6012 Elective II. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Continuation of clinical rotations.

6022 Elective III. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Continuation of clinical rotations.

6032 Elective IV. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Continuation of clinical rotations.

6042 Elective V. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Continuation of clinical rotations.

6052 Elective VI. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Continuation of clinical rotations.

6071 Animal Medicine and Surgery. Prerequisite: third-year standing in the College of Veterinary Medicine. Clinical aspects of diseases of pet, zoo, exotic, and wild birds.

6156 Systemic Medicine and Diseases of Domestic Animals I. Prerequisite: third-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of diseases of food and fiber animals.

6223 Veterinary Surgery II. Prerequisites: 5422 and third-year standing in the College of Veterinary Medicine. Lectures and discussions in operative techniques and practices in veterinary surgery.

6532 Veterinary Radiology II. Prerequisites: 5431 and third-year standing in the College of Veterinary Medicine. Recitations and demonstrations pertaining to the interpretation of radiographs and evaluation of radiological therapy. Continuation of 5431.

6543 Clinical and Surgical Techniques I. Prerequisite: third-year standing in the College of Veterinary Medicine. Behavioral traits, physical examination and restraint of animals, introduction to clinical techniques of medicine and surgery relating to clinical handling of animals. Graded on a pass-fail basis.

6614 Systemic Medicine and Diseases of Domestic Animals II. Prerequisite: third-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of diseases of horses.

6615 Systemic Medicine and Diseases of Domestic Animals III. Prerequisite: third-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of diseases of companion animals.

6642 Veterinary Surgery III. Prerequisites: 6523 and third-year standing in the College of Veterinary Medicine. Lectures and discussions in anatomical topics, operative techniques and practice in veterinary surgery.

6643 Clinical and Surgical Techniques II. Prerequisites: 6543 and third-year standing in the College of Veterinary Medicine. Continuation of 6543. Graded on a pass-fail basis.

651 Foreign Animal Diseases. Prerequisite: third-year standing in the College of Veterinary Medicine. Lectures and discussions involving diseases of the world. Emphasis on diseases which are a potential threat to United States livestock.

7000 Preceptorship Clinic. 1-8 credits, maximum 8. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of diseases of animals presented in the preceptorship program. Graded on a pass-fail basis.

University (UNIV)

1001 American Studies Survey. Provides an overview of the United States society and culture using an interdisciplinary approach. Study of U.S. culture from sociological, anthropological, language, educational, political, geographical, economic, and historical perspectives.

1111 University Academic Services Freshman Orientation. Prerequisite: beginning freshman standing in University Academic Services. Designed to help students ease the transition from high school to college; become aware of campus resources and administrative structures; explore various majors and careers; increase awareness of current issues in education; and enhance study skills and attitudes which can contribute to academic success.

2001 Academic Assessment and Evaluation. Prerequisite: acceptance into the University Academic Assessment Program or consent of instructor. Required for students in University Academic Assessment Program. Designed to help students identify reasons for experiencing academic difficulty; assess individual learning styles and personality types; understand the educational system and current issues in American education; develop goals, attitudes and study skills needed to achieve academic success; and explore careers, majors, and alternative educational opportunities. Does not apply toward total hours for graduation.

2510 Innovative Studies. 1-3 credits, maximum 6. Lab 0-6. May be used for not more than two semesters for new or experimental topics or techniques.

3110 Directed Study. 1-6 credits, maximum 6. Prerequisite: written application approved by instructor, the department head, and the dean of the student’s college. Independent study, research, field work or internship.

Veterinary Parasitology, Microbiology Public Health (VPARA)

5123 Laboratory Hygiene. Prerequisite: junior standing in the College of Agriculture. Principles of sanitation and of prevention and control of common diseases of livestock.

5000* Theriogenology. 1-6 credits, maximum 6. Prerequisite: senior standing with registration for graduate credit or graduate standing. Research problem for credit in meeting requirements of the M.S. degree under the supervision of a graduate faculty member and with permission of the department head.

5110 Special Problems. 1-6 credits, maximum 6. Prerequisite: graduate standing or consent of instructor. Special research problems in veterinary microbiology and parasitology.

5111 Current Topics in Veterinary and Biomedical Sciences. Prerequisite: a minimum of one undergraduate introductory course in microbiology. Development of oral presentation skills, critical thinking and deductive reasoning through the use of discussion of current literature from the field of veterinary and biomedical science as it pertains to the study of infectious disease in humans and animals.

5131 Veterinary Immunology. Lab. 3. Prerequisite: first-year standing in the College of Veterinary Medicine or consent of instructor. Basic principles of immunology and their application to veterinary medicine.

5213 Diseases and Parasites of Wild Animals. Lab. 1. Prerequisite: consent of instructor. A systematic approach to bacterial, viral and parasitic diseases of wild animals. Principles of disease transmission as it relates to individuals and populations of wild animals. Principles applicable to all areas of zoology, veterinary medicine and wildlife management. Same course as ZOOL 5593.

5224 Veterinary Bacteriology. Lab. 2. Prerequisite: first-year standing in the College of Veterinary Medicine or consent of instructor. Pathogenic bacteria of domesticated animals. Fungi pathogenic for domesticated animals and their relationships to public health.

5242 Veterinary Biometry and Principles of Public Health. Lab. 1. Prerequisite: consent of instructor. Application of statistical methods in veterinary medicine. Use of computerized clinical pathology data for routine practice. Use of veterinary databases to apply biostatistical methods to biomedical science of veterinary medicine. Application of such methods to student research projects.

5313 Veterinary Virology. Lab. 3. Prerequisite: second-year standing in the College of Veterinary Medicine or consent of instructor. Viruses responsible for disease in domesticated animals.

5322 Food Hygiene. Prerequisite: second-year standing in the College of Veterinary Medicine. Public health principles and standards applying to the maintenance of a wholesome food supply. Regulations and procedures for inspection of meats and meat products, inspection of milk and dairy products, and inspection for food and of food products of animal origin. Human nutrition, environmental and consumer aspects of food quality.

5323 Introduction to Public Health. Prerequisite: second-year standing in the College of Veterinary Medicine or consent of instructor. Responsibilities of the veterinarian to public health programs. Topics in community and environmental health.

5333 Veterinary Parasitology. Lab. 3. Prerequisite: second-year standing in the College of Veterinary Medicine or consent of instructor. The important pathogens and parasites of domestic animals.

5404 Techniques in Parasitology. Prerequisites: graduate standing and general parasitology. Helminthology or concurrent enrollment. Experimental laboratory work in basic research in helminthology and parasitology. Individual participation and analysis of experimental situations and techniques applicable to all areas of zoology.

5424 Veterinary Parasitology. Lab. 2. Prerequisite: second-year standing in the College of Veterinary Medicine or graduate standing with major in certain biological sciences. Proctoanal and external parasites of domestic animals.

5523 Advanced Helminthology. Lab. 3. Prerequisite: senior or graduate standing in zoology or entomology or graduate standing or consent of department head. Structure, taxonomy, life cycles and host-parasite relationships of helminths, including penetrating invertebrate and vertebrate animals.

5533 Veterinary Virology. Prerequisites: 5313, MIRC 4124 or equivalent. Discussion of theoretical and practical problems relating to the molecular biology of virus replication including virus structure and replication strategies, virus-host cell interactions, and anti-viral mechanisms.

5613 Biology of Parasites. Prerequisite: graduate standing, general parasitology, or consent of instructor. A systematic and ecologic approach to the study of parasitology. Host-parasite relationships, physiology, ecology and behavioral aspects of parasitic organisms.

5723 Parasitic Protozoa. Lab. 3. Prerequisite: graduate standing in zoology or entomology or consent of instructor. Structure, life cycle, physiology, host-parasite relationships, and diagnosis concerned with protozoan parasites.

5833 Veterinary Diagnostic Microbiology. Lab. 6. Prerequisite: graduate standing or consent of instructor. Laboratory methods employed in the isolation of microorganisms and application of these methods in the diagnosis of specific animal diseases.

6000 Research Thesis. 1-11 credits, maximum 45. Prerequisite: candidacy for the Ph.D. degree. Research problems for graduate student to meet thesis requirement of the Ph.D. degree.

6110 Seminar. 1-6 credits, maximum 6. Prerequisite: graduate standing. Subjects for study and discussion for graduate students.

6224 Advanced Concepts in Veterinary Immunology. Prerequisite: 5113 or BIOCH 3653 or MICRO 3254. Induction of immune responses, host defense, mechanisms of immunoregulation, antigen presentation and immune recognition by B and T lymphocytes, using contemporary research publications.

6242 Public Health and Preventive Medicine. Prerequisite: third-year standing in the College of Veterinary Medicine or consent of instructor. The relationship of zoonotic diseases to community and environmental health. Epidemiological principles in the practice of veterinary preventive medicine.

6711 Veterinary Preventive Medicine. Prerequisite: fourth-year standing in the College of Veterinary Medicine or consent of instructor. The uses of epidemiology in the practice of veterinary preventive medicine.

6753 Advanced Veterinary Epidemiology. Prerequisite: STAT 2013 or equivalent. The application of epidemiologic techniques to disease investigations in veterinary medicine. A group discussion format. Also a project involving the application of epidemiologic principle to population disease problems.

6753* Special Topics in Veterinary Immunology. Prerequisite: one course in immunology or consent of instructor. Selected areas of current interest in veterinary immunology. The subject matter varies from year to year.

Veterinary Pathology (VPATH)

5000 Thesis. 1-6 credits, maximum 6. Prerequisite: graduate standing. Research in veterinary pathology. Graduate credit in meeting requirements of the M.S. degree.

5315 Veterinary Pathology I. Lab. 2. Prerequisite: second-year standing in the College of Veterinary Medicine or written consent of department head. Lectures in cellular and tissue pathology, pigments, inflammation, and disturbances of growth and circulation lead to pathology of the various systems. The functional disturbances that accompany changes in these systems, as well as the course and genesis of disease, are stressed. Students are taught to correlate altered structure and function with clinical signs.

5413 Clinical Pathology. Prerequisite: second-year veterinary standing or graduate standing with consent of department head. Laboratory methods used in evaluation of pathology conditions in animals. Hematology, urinalysis and clinical chemistry.

5425* Veterinary Pathology II. Lab. 2. Prerequisite: 5315 or written consent of department head. Continuation of 5315.

5550 Pathological Techniques and Special Problems. 1-4 credits, maximum 20. Prerequisite: graduate standing in veterinary medicine or concurrent enrollment. Special techniques and methods used in diagnosis, technical work and research in pathology.

6000 Thesis. 1-15 credits, maximum 40. Prerequisite: second-year standing. Research in veterinary pathology. Graduate credit in meeting requirements of the Ph.D. degree.

6524 Pathology of Infectious Diseases. Prerequisite: 5425. Pathology of specific infectious diseases of animals, including those communicable to humans, foreign animal disease, and methods employed in their diagnosis.

6699 Poultry and Laboratory Animal Diseases. Prerequisite: 5425 or written consent of department head. Biologic characteristics, husbandry, disease, prevention, and treatment of diseases of domestic poultry and selected species of animals used in teaching and biomedical research.

6818 Differential Diagnosis. Prerequisite: fourth-year standing in the College of Veterinary Medicine. The differential diagnosis of diseases of domestic animals.

6823 Diagnostic Pathology Clinic. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Participation in animal necropsy, clinical pathology and clinical parasitology laboratories to study diagnosis, prognosis, prevention and treatment of diseases.

Mammalogy. Lab 4. Prerequisite: 3205 or consent of instructor. Classification, distribution, life histories, ecology, and management of major invertebrate groups.


Vertebrate Natural History. Lab 6. Prerequisite: BISC 1603. Basic principles of vertebrate classification and functional organization: systematic, life histories, reproduction, behavior and ecological adaptations of vertebrates, emphasizing local fauna. One weekend field trip required.

Human Heredity. The impact of genetics on human endeavor.

Evolution. Prerequisite: BISC 3003 or 3024. Development of the evolutionary concept: specification, evolutionary mechanisms and phylogenetic concepts.

Oceangoing. Ocean basins, circulation, tides, waves, chemistry of sea water, life in the ocean, ocean communities.


Vertebrate Natural History. Lab 6. Prerequisite: BISC 1603. Basic principles of vertebrate classification and functional organization: systematic, life histories, reproduction, behavior and ecological adaptations of vertebrates, emphasizing local fauna. One weekend field trip required.

Prerequisite: BISC 3034. Application of ecological principles to the production and control of natural populations.

Prerequisites: 60 credit hours, including BISC 3034. Application of ecological principles to the production and control of natural populations.

Prerequisites: BISC 3014 or equivalent. Analysis and description of the behavior of animals in their natural environment, especially in terms of natural selection and adaptation. A synthesis of ethology, population genetics, sociobiology, and evolutionary theory. Largely descriptive and generalized with limited emphasis on mathematical theory.

Prerequisite: 1-2 credits, maximum 20. Prerequisite: graduate standing in the College of Veterinary Medicine or written approval of department head. A weekly review of current cases submitted to the department and the methods employed in their diagnosis. Students examine necropsy reports, species, and preparations individually and are required to formulate their own diagnosis. Laboratory Animal Pathology. 2-1 credits, maximum 2. Prerequisite: 6701 or written consent of department head. Etiology and pathogenesis of spontaneous and experimentally induced diseases of common-used species of laboratory animals.

Neuropathology. Prerequisites: 5425, graduate standing and written consent of department head. Total credit not to exceed six for the M.S. degree and 12 for the Ph.D. Re-enrollment is not permitted. The nervous systems of the domesticated animals and the correlation of such lesions with recognized specific diseases.

Advanced Oncology. Prerequisite: 5315. Neoplastic diseases of animals with emphasis on morphologic characterization, etiology, metabolism, genetics, and mechanisms and comparative relationships among different animal species.

Advanced Systemic Pathology. 3-4 credits, maximum 18. Prerequisites: 5425, graduate standing and written consent of department head. Applied clinical biochemistry, organ function tests and related cytologic examination.

Advanced Hematology. Prerequisites: 5425, or equivalent, graduate standing, written consent of department head. The etiology and pathogenesis of the diseases of the blood and bone marrow.

Human Anatomy. Prerequisite: BISC 1603. Gross anatomy of the human body and its systems based on comparisons with recognized specific diseases.

Zoology (ZOOL)

1. Seminar. 1-2 credits, maximum 6. Prerequisite: graduate standing in biological sciences. Introduction to research problems in veterinary pathology.

2. Diagnostic Pathology. 1-4 credits, maximum 20. Prerequisite: graduate standing in the College of Veterinary Medicine or written approval of department head. A weekly review of current cases submitted to the department and the methods employed in their diagnosis. Students examine necropsy reports, species, and preparations individually and are required to formulate their own diagnosis.

3. Laboratory Animal Pathology. 1-2 credits, maximum 2. Prerequisite: 6701 or written consent of department head. Etiology and pathogenesis of spontaneous and experimentally induced diseases of common-used species of laboratory animals.

4. Neopathology. Prerequisites: 5425, graduate standing and written consent of department head. Total credit not to exceed six for the M.S. degree and 12 for the Ph.D. Re-enrollment is not permitted. The nervous systems of the domesticated animals and the correlation of such lesions with recognized specific diseases.

5. Advanced Oncology. Prerequisite: 5315. Neoplastic diseases of animals with emphasis on morphologic characterization, etiology, metabolism, genetics, and mechanisms and comparative relationships among different animal species.

6. Advanced Systemic Pathology. 3-4 credits, maximum 18. Prerequisites: 5425, graduate standing and written consent of department head. Applied clinical biochemistry, organ function tests and related cytologic examination.

7. Advanced Hematology. Prerequisites: 5425, or equivalent, graduate standing, written consent of department head. The etiology and pathogenesis of the diseases of the blood and bone marrow.

8. Human Anatomy. Prerequisite: BISC 1603. Gross anatomy of the human body and its systems based on comparisons with recognized specific diseases dissected in the laboratory, with minor emphasis on embryology and histology.

9. Introduction to Wildlife Conservation. Prerequisite: BISC 1114 or 1303. The profession of wildlife conservation; the interdisciplinary nature of the field; interactions and impacts of humans and animals; basic wildlife conservation; the integration of ecological principles to the production and management of wildlife populations and habitats, with emphasis on current management problems.


12. Wildlife Management. Prerequisite: 3513. Biological basis for the management of wildlife populations and habitats, with emphasis on current management problems.

13. Wildlife Management Techniques. Prerequisite: BISC 3513, ENGL 3323 strongly recommended. The semi-structured format includes problem development, project planning and design, land use surveys and mapping, wildlife popula-
5143* Ecological Computer Modeling. Lab 3. Prerequisites: BISC 3034; BISC 5133 strongly recommended. Use of BASIC to write programs that model simple concepts in ecology and behavioral biology. Use of interactive program packages that model more complex ecological and evolutionary phenomena at the computer console. No prior experience with computers or programming necessary.

5203* Physiological Systems Modeling. Lab 1. BASIC programs to model and analyze simple physiological processes. Models to evaluate more complex physiological processes. No prior experience with computers or programming necessary.

5213* Comparative Physiology. Prerequisites: 4264, BISC 3014, or BIOC 3853. Comparison of circulation, digestive, excretory, and sensory systems of vertebrates and invertebrates. Same course as PHSI 5213.

5223* Membrane Biophysics and Bioenergetics. Prerequisites: PHYSC 1214, and RISC 3014. Application of biophysical, biochemical and biological techniques to the study of the structure and function of membranes and membrane components; kinetic measurements, spectroscopic techniques and diffractive techniques. Application of these illustrated with current research problems. Same course as PHYSC 5223.

5314* In Situ Toxicology. Lab 6. Prerequisites: BIOC 3653, BISC 3024, 3034. Examination of methods used for in situ evaluation of toxic responses of indigenous biota to pollutants; demographic survey, biomarker assays, toxicity tests.

5413* Principles of Ecotoxicology. Prerequisites: BISC 3653 and consent of instructor. Integration of major processes involved with transport, exposure and response of biological systems to xenobiotics.

5423* Analysis of Environmental Contaminants. Lab 6. Prerequisites: organic chemistry and graduate standing. Analytical methods for measuring environmental contamination or pollution; toxicity bioassay, gas chromatography, atomic absorption, infrared and ultraviolet spectrometry.

5433* Advanced Fishery Science. Lab 4. Prerequisite: consent of instructor. Application of ecological and evolutionary theory to problem solving in fishery research and management.

5443* Aquaculture. Lab 2. Prerequisite: graduate standing or consent of instructor. Environmental and nutritional requirements, diseases and cultural practices affecting growth and production of aquatic animals. Three weekend field trips required.

5453* Water Pollution Ecology. Lab 6. Prerequisite: 4453 or consent of instructor. Effects of pollution on the ecology of aquatic ecosystems. Effects of contaminants on the structure and function of ecosystems; ecology of plankton, fish and benthic macroinvertebrates.

5552* Population Dynamics. Prerequisites: BISC 3034, STAT 4013. Quantitative approaches to population parameters and related processes. Natural regulation of numbers emphasized.

5553* Wildlife Nutritional Ecology. Prerequisite: 4523. Basic nutritional principles for application in solving wildlife and fisheries management problems. Importance of nutrition in regulating wildlife populations through examination of the effects of malnutrition on recruitment, growth, disease, and survival. Techniques and skills for assessing both the nutritional suitability of the habitat and condition of the population.

5563* Woodland Wildlife Ecology. Lab 3. Prerequisite: 4513 or BISC 3034. Vertebrate species diversity in the world's woodland and forested biomes. Changes imposed by land clearing and development and their effects upon wildlife diversity and populations. Options for wildlife conservation, from strict nature reserves to integrating wildlife habitat management into land use practices. Field trip required.

5573* Grassland and Desert Wildlife Ecology. Prerequisite: BISC 3034. Ecology of grasslands and deserts with emphasis on vertebrate species diversity, adaptations to semi-arid and arid ecosystems, and management problems associated with such habitats.

5583* Wetland Wildlife Ecology. Lab 3. Prerequisite: 4513 or BISC 3034. Vertebrate species diversity in various types of wetlands with emphasis on the management problems for waterfowl and furbearers.

5593* Diseases and Parasites of Wild Animals. Lab 2. Prerequisite: consent of instructor. A systematic approach to bacterial, viral and parasitic diseases of wild animals. Principles of disease transmission as it relates to individuals and populations of wild animals. Principles are applicable to all areas of zoology, veterinary medicine and wildlife management. Same course as VPARA 5213.

6000* Research for Ph.D. Dissertation. 1-15 credits. Maximum 30. Prerequisite: 30 credit hours of acceptable graduate work. Independent research for the Ph.D. dissertation under the supervision of a graduate faculty member.

6110* Advanced Physiology of Selected Systems. Prerequisite: 4215 or PHSI 5125. Advanced studies in gastrointestinal, cardiovascular, respiratory, excretory and neuroendocrine physiology. Each part of this sequential course may be taken for two hours credit. Student should ascertain the topics before registering for this course a second time. Same course as PHSI 6110.
INDEX

A
Abbreviations of Course Listings, 163
Academic Regulations, 42, 135
Accounting, 77, 164
Accreditation, 6
see also specific colleges
Activities, Student, 35
Adding Courses, 11
Administration
Administrative Services, 77
Higher Education/Educational Administration, 86
University, ii
Admission
Application, 7
Freshman, 7, 9
High School Preparation for, 8
International Student, 10
Nonresident, 9
Readmission, 10
Resident, 8, 9
Transfer, 7, 9
Admission to the Graduate College
Chart, 129, 130, 131
Departmental or Program Requirements, 133
International, 132
Test Scores, 132
Transfer Credits, 133
Adult Education/Occupational, 88, 89, 223
Advanced Standing Program, 9
Advertising, 67
Advisement, 37, 58
Aerospace/Mechanical Engineering, 102, 217
Aerospace Studies (Air Force), 69, 164
Agricultural
Communications, 51
Economics, 51, 165
Education, 52, 166
Engineering, 52, 97, 167
Agricultural Science and Natural Resources, College of, 50
see also specific subjects
General, 53
Mechanized, 220
Agronomy, 53, 167
ALPHA Program, 11
Alumni Programs and Services, 41
Animal Science, 54, 169
Anthropology, 73, 170
University, 28, 34

Application
Admission, 7
Housing, 7
Applied Behavioral Studies, 83, 170
Architecture, 97, 172
Area Studies Certificates, 59
Art, 61, 173
Arts and Sciences, 58, 174
see also specific subjects
Assistantships, Teaching and Research, 126
Astronomy, 175
Athletics, 175
Auditing
Faculty and Staff, 12
Fee, 14
Aviation and Space Education, 84, 175

B
Bachelor's Degrees, 48
see also specific colleges
Behavioral Studies, Applied, 83
Biochemistry, 54, 176
Biological Sciences, 176
Botany, 61, 176
Branch Campus
College of Osteopathic Medicine, 111
OSU-Oklahoma City, 42
OSU-Okmulgee, 42
OSU-Okmulgee, 36
Broadcasting/Journalism, 76, 177
Business Administration, College of, 76
see also specific subjects
Department of,
Business Communications, 177
Business Education, 83, 178
Business Law, 178
Business Professions, 178

C
Calendar
University, 4
Graduate College, 123
Certificates, Area Studies, 59
Women's Studies, 59
Chemical Engineering, 98, 178
Chemistry, 62, 179
Child Development/Family Relations, 107, 196
Chinese, 80
Civil Engineering, 99, 180

College of
Agricultural Science and Natural Resources, 50
Arts and Sciences, 58
Business Administration, 76
Education, 82
Engineering, Architecture and Technology, 93
Graduate, 123
Home Economics, 106
Osteopathic Medicine, 111
Veterinary Medicine, 113

Communications
Agricultural, 51
Mass, 215
Speech, 73, 233

Computer/Electronics Technology, 104, 193
Computer Engineering/Electrical, 100, 190
Computer Systems/Management Science, 80
Computer Science, 63, 125, 182
Construction Management Technology, 104, 184

Corrections, see Sociology

Costs
Auditing, 14
Correspondence Courses, 14
Estimated, 15
Extension Courses, 14
Facilities and Special Services, 13
Faculty/Staff Members, 14
General Fees (Nonresidents), 13
General Fees, (Residents), 13
Graduate Assistants, 14
Graduation Fee, 14
Obligation, 15
Residence Hall Rates, 14
Special Class Charges, 14
University Apartments, 28, 34
Veterinary Medicine, 13

Counseling Services, 34
Course Listings, 163
Curriculum and Instruction
Education, 85

D
Degrees
Agricultural Science and Natural Resources, 50
Arts & Sciences, 58
Business, 76
Education, 82
Engineering, Architecture and Technology, 93
Graduate, 123
Home Economics, 106
Osteopathic Medicine, 111
Veterinary Medicine, 113
University Studies, 36, 59
Extended Studies, 36, 59
listing, 48

Dentistry, Pre, 36
Design, Housing and Merchandising, 107, 186
Disabled Student
Housing, 34
Services, 35
see also Facilities
Disruption of the Educational Process, Regents' Resolution, 48
Doctoral Degrees, 139
see also specific departments
Dropping Courses, 11
Refund Policy, 14
Drug and Alcohol, 19
Drug Prevention Policy, 20
Drug/Alcohol Counseling, 21

E
Ecology, Wildlife and Fisheries, 75
Economics, 787, 188
Education, College of, 82, 189
see also specific subjects
Educational Administration and Higher Education, 86, 190
Electrical and Computer Engineering, 100, 190
Electrical Power Technology, 193
Electronics and Computer Technology, 104, 193
Employment, see Financial Aid
Engineering, Architecture and Technology, College of, 93
see also specific subjects
Admission, 94
General, 101, 202
Science, 194
Technology, 103, 194
English, Department of, 63
Enrollment Procedure
Continuing, 11
Faculty, Staff, 12
First-time, 11
Graduate, 123
Transfer Students, 7, 9

Entomology, 55, 195
Environmental Science, 128, 196
Expenses, see Costs
Extended Studies, see University Studies, Bachelor of

F
Facilities, 6
Family Relations and Child Development, 107, 196
Fees, see Costs
Finance, 79, 198
Financial Aid
see also specific colleges
INDEX

Employment, 16, 32
for Graduate Students, 126
Grants, 16
Loans, 16
Scholarships, 16, 58
Work-study, 16
Fire Protection and Safety Technology, 104, 199
Food, Nutrition and Institution Administration, 109, 199
Food Science, 128
Foreign Languages and literatures, 65, 200
Forestry, 55, 200
Former Students, Readmission, 10
Foundation, OSU, 42
Fraternities/Sororities, see Greek Organizations
French, 201
Freshman
Enrollment, 9, 11
Nonresidents, 9
Oklahoma Residents, 8, 9

G
General Administration, 202
General Education, 6
see also specific colleges
General Engineering, 202
General Technology, 202
Genetics, 202
Geography, 65, 202
Geology, 65, 203
German, 204
Graduate
Calendar, 123
Centers, 125
College, 123
Council and Members, 124
Enrollment, 134
Programs, see specific departments
Regulations, 132
Graduation Requirements, see Academic Regulations
see also specific colleges
Greek, 205
Greek Organizations, 29, 41
Grants, see Financial Aid

J
Japanese, 210
Journalism and Broadcasting, 67, 210
Judicial Process, 19

K
Kyoto, OSU, 36

L
Landscape Architecture/Horticulture, 56, 210
Latin, 212
Law, Pre-, 59
see also specific colleges
Leisure, 87, 212
Library Science, 213
Loans, see Financial Aid

M
Major fields, see specific colleges and degree listing
Management, 79, 213
Management Information Systems, 214
Management Science & Computer Systems, 80
Manufacturing Systems Engineering, 132
Manufacturing Technology, 104, 214
Marketing, 80, 214
Marketing Education, 89, 215
Mass Communications, 215
Master's Degrees, 135
see also specific departments
Mathematics, 68, 215
Mechanical and Aerospace Engineering, 102, 217
Mechanical Design Technology, 105, 219
Mechanical Power Technology, 105, 219
Mechanized Agriculture, 220
Medical Technology, 62, 220
Medicine
Osteopathic, 111
Pre-, 36
see also specific colleges
Veterinary, 113
Merchandising/Design, Housing, 107, 186
Microbiology, 68, 220
Military Science, 221
Military Service Fee Refund Policy, 14
Military Studies, Departments of, 69
Aerospace Studies, 69
Military Science, 69, 221
Minority Programs and Services, 35
Minors, 58
Mission of the University, 6
Music, 69, 221
Fees, 14

N
Natural Science, 129, 223
Nonresidents of Oklahoma
Costs, 14
Freshmen, 13
Pre-engineering, Transfers, 7, 9
Nutrition/Food, and Institution Administration, 109

O
Occupational and Adult Education, 88, 89, 223
Off-Campus Program, 127
Office Management, 224
Oklahoma City, OSU-, 42
Okmulgee, OSU-, 42
Organizations
Greek, 41
Honor and Service, 41
see also specific colleges
Osteopathic Medicine, College of, 111
Osteopathy, Pre-, 36

P
Parking
Fees, 12
Regulations, 12
Pathology
Plant, 56
Speech, 73, 233
Veterinary, 115, 238
Petroleum Technology, 224
Philosophy, 70, 224
Physical Education, 87, 225
Physical Examination, 7
Physics, 71, 227
Physiology, 75
Physiological Science, 113, 226
Placement, University, 38
Plant Pathology, 56, 227
Political Science, 71, 227
Preprofessional Programs, 36, 59
see also specific colleges
Privacy, Students' Rights, 12
Professional Degrees, Doctor of Osteopathy, 111
Veterinary Medicine, 113
Psychology, 72, 229
Public Relations, 68

R
Radio/TV Film, 68
Readmission, 10, 133
Research Centers, 125
Refund, Withdrawal and Drop Fee Policy, 14
Regents
for Higher Education, State, ii
for OSU, Board of, ii
Regulations
Academic, 21, 22, 42, 135
Graduate, 132
Parking, 12