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 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.

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C. DAVID CURTIS, B.S., Bursar
ANTHONY BROWN, Ph.D., Coordinator of Programs, University Center At Tulsa (offices are located in Tulsa)
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ROBERT E. GRAALMAN, Ph.D., Director of University Scholarships
ROBIN H. LACY, Ed.D., Registrar and Director of Admissions

Oklahoma State University
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University Calendar

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 80% refund on withdrawal
August 31, Monday
Last day to add
September 4, Friday
Last day to file a diploma application
September 4, Friday
Last day to drop a course with no grade and no fees charged for course
September 4, Friday
Last day for 50% refund on withdrawal
September 7, Monday
University holiday
September 14, Monday
Last day for 25% refund on withdrawal
October 2, Friday
Last day to drop or withdraw with "W"
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 a "WP" or "WF"
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 22, Tuesday
Grades due from faculty
December 24-January 1, Thursday through Friday
University holidays

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 11, Tuesday
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"
July 30, Friday
Class work ends
August 3, Tuesday
Grades due from faculty

The University
First Semester 1993-94, Fall
August 16-20, Monday-Friday
   Enrollment
August 20, Friday
   Last day to cancel enrollment
August 23, Monday
   Class work begins
August 27, Friday
   Last day to enroll
August 27, Friday
   Last day for 80% refund on withdrawal
August 30, Monday
   Last day to add
September 3, Monday
   Last day to file a diploma application
September 3, Friday
   Last day to drop a course with no grade and no fees charged for course
September 3, Friday
   Last day for 50% refund on withdrawal
September 6, Monday
   University holiday
September 13, Monday
   Last day for 25% refund on withdrawal
October 1, Friday
   Last day to drop or withdraw with "W" or "WF"
October 15, Friday
   Progress reports for freshmen due from faculty
October 18, 19, Monday, Tuesday
   Fall break
October 20, Wednesday
   "Monday" classes will meet
October 29, Friday
   Last day to drop with "WP" or "WF"
November 8, Monday
   Enrollment for Spring begins
November 25, Thursday
   University holiday begins
November 29, Monday
   Class work resumes
December 3, Friday
   Last day to withdraw with a "WP" or "WF"
December 6-10, Monday-Friday
   Pre-finals week
December 13-17, Monday-Friday
   Final examinations
December 17, Friday
   Class work ends
December 21, Tuesday
   Grades due from faculty
December 23-31, Thursday through Friday
   University holidays

Winter Intersession
December 6-10, Monday-Friday
   Enrollment
December 20, Monday
   Intersession begins
December 31, Friday
   Intersession ends

Second Semester 1993-94, Spring
January 3-7, Monday-Friday
   Enrollment
January 7, Friday
   Last day to cancel enrollment
January 10, Monday
   Class work begins
January 14, Friday
   Last day to enroll
January 14, Friday
   Last day for 80% refund on withdrawal
January 17, Monday
   Last day to add
January 21, Friday
   Last day to file a diploma application
January 21, Friday
   Last day to drop a course with no grade and no fees charged for course
January 21, Friday
   Last day for 50% refund on withdrawal
January 28, Friday
   Last day for 25% refund on withdrawal
February 18, Friday
   Last day to drop or withdraw with "W"
March 4, Friday
   Progress reports for freshmen due from faculty
March 5, Saturday
   Spring break begins
March 14, Monday
   Class work resumes
March 21, Monday
   Enrollment for Fall begins
March 25, Friday
   Last day to drop with a "WP" or "WF"
April 22, Friday
   Last day to withdraw with a "WP" or "WF"
April 25-29, Monday-Friday
   Pre-finals week
May 2-6, Monday-Friday
   Final examinations
May 6, Friday
   Class work ends
May 7, Saturday
   Commencement
May 10, Tuesday
   Grades due from faculty

Summer 1994
Regular 8-Week Summer Session
May 30, Monday
   University holiday
June 2, 3, Thursday, Friday
   Enrollment
June 3, Friday
   Last day to cancel enrollment
June 6, Monday
   Class work begins
June 7, Tuesday
   Last day for 80% refund on withdrawal
June 8, Wednesday
   Last day to enroll
June 8, Wednesday
   Last day to add
June 9, Thursday
   Last day for 50% refund on withdrawal
June 10, Friday
   Last day to file a diploma application
June 10, Friday
   Last day to drop a course with no grade and no fees charged for course
June 10, Friday
   Last day for 25% refund on withdrawal
June 24, Friday
   Last day to drop or withdraw with "W"
July 4, Monday
   University holiday
July 8, Friday
   Last day to drop with "WP" or "WF"
July 15, Friday
   Last day to withdraw with "WP" or "WF"
July 29, Friday
   Class work ends
August 2, Tuesday
   Grades due from faculty

Oklahoma State University
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 A&M 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, approximately 19,000 are on the Stillwater campus, 2,100 at Okmulgee and 4,200 at Oklahoma City, as well as 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 90 foreign countries. Of the undergraduate population, 54 percent are men and 46 percent are women. Minorities make up 10 percent of the undergraduate student body.

The graduate student enrollment totals 4,265. Of these students, approximately 700 enroll through the University Center at Tulsa. Sixty-seven percent are from Oklahoma; seven percent from other states; and 26 percent from foreign countries. Of the graduate population, 57 percent are men and 43 percent are women. Minorities make up seven 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 Calvin Physical Education Center, the Bartlett Center for the Studio Arts, and the Seretean Center for the Performing Arts. Three state-of-the-art facilities completed during the 1990's include the Center for International Trade Development, Phases A, B, C of the Noble Research Center (a facility dedicated to interdisciplinary study of agriculture and the sciences), and a first-in-the-nation Wellness Center that is integrated into a university setting. The final Phase D of the University's showpiece Noble Research Center is scheduled for completion during 1992.

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 consis-
tent 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 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 Commission 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 Speech-Language-Hearing 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 accrediting body for programs in business and management. The School of Accounting enjoys separate accreditation by this body.

In the College of Education, programs in the School of Health, Physical Education and Leisure are accredited by the National Recreation and Park Association as well as the American Alliance for Health, Physical Education, Recreation and Dance.

In the College of Engineering, Architecture and Technology, the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology has accredited the bachelor's programs in aerospace engineering, architectural engineering, chemical engineering, civil engineering, electrical engineering, general engineering, industrial engineering and management and mechanical engineering. The Technology Accreditation Commission of the Accreditation Board for Engineering and Technology has accredited the bachelor's programs in construction management technology, electronics technology, fire protection and safety technology, manufacturing technology, mechanical design technology, mechanical power technology, and petroleum technology. The National Architecture Accrediting Board has accredited both the bachelor and master's programs in architecture.

In February 1980, the College of Human Environmental Sciences received 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 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 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 American Dietetic Association has approved the "Administrative Dietetic Internship" as an Approved Preprofessional Practice Program.

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.

Programs at OSU's branch campuses have also received accreditation from national agencies. The College of Osteopathic Medicine-OSU is accredited by the American Osteopathic Association. The nursing program at OSU-Oklahoma City is accredited by the National League for Nursing and approved by the Oklahoma Board of Nurse Registration and Nursing Education.

Refer to the appropriate college sections in the Catalog for further information on accreditation of specific programs.

Affirmative Action Program

OSU's Affirmative Action Program reflects the commitment of the University to equal opportunity and outlines the procedures necessary to fulfill this commitment. OSU is committed by policy of its Board of Regents to promote equal opportunity in all phases of university life for all persons within its constituency. The Affirmative Action Program complies with the legal requirements for federal and state civil rights laws and implements directives. Members of ethnic minority groups, women, the handicapped, disabled veterans, and veterans of the Vietnam era, and the aged in society have faced many complex barriers to equal opportunity in the past. OSU has devised action-oriented programs designed to remove tangible and intangible barriers to equal opportunity, thereby demonstrating through the success of these programs that the goals of equal opportunity held by American society are attainable.

To adequately meet the needs of protected groups, such as the qualified handicapped, self-identification is encouraged so those eligible can be afforded every opportunity to take advantage of the services offered. All information is protected by privacy laws and used only for affirmative action purposes.

Entering the University Admissions

Robin H. Lacy, Registrar and Director of Admissions
Gordon L. Reese, Associate Director
Darlene Wilson, Administrative Associate
Paulette Cundiff, Coordinator, Admissions Operations
Linda Peale, Coordinator, Admissions Programs
Karen R. Mott, Coordinator, Transfer Credit Evaluations

Application Procedure

When to Apply

Generally, it is advisable to apply for admission several months in advance of the first semester in which enrollment is
How to Apply

(Nonresidents should include a $10 non-refundable processing fee with the Application for Admission.)

First-time Freshmen. All applicants seeking admission must complete and submit an Application for Admission. A student should also request that his or her high school counselor send to the Office of Admissions a current official high school transcript that contains the most current class rank and grade-point average (6th, 7th, or 8th semester). In addition, at the time of application, a request should be made to have the results of the ACT or SAT sent to the Office of Admissions, unless such a request was made at the time of testing.

Transfers. 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 also follow the procedure outlined above for first-time freshmen.

Former Students. Students who have attended OSU but did not enroll in another college prior to applying to OSU must complete and submit an Application for Readmission. Students who have enrolled in another college since attending OSU must submit official transcripts from each school attended.

Residential Life. All freshmen are required to live on campus their first year. For exceptions, see the "Residential Life" section of the Catalog. 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 his or her private physician, or a recent equivalent report from a place of employment, school 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.

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. Independent Student Criteria: An individual who is not a citizen of the United States may become eligible for classification as an Oklahoma resident provided that he or she holds permanent resident status as defined by the Immigration and Naturalization Service, evidenced by the issuance of a green card or amnesty card, who has resided in Oklahoma for at least 12 consecutive months following issuance of the green card or amnesty card, and who meets the criteria for establishment of domicile.

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 methods, 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 the arts, English, foreign languages, mathematics, natural sciences, and social studies.

Curriculum Requirements (Residents and Nonresidents)

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

Subjects                      Years
---                           ---
English                      4
(Mathematics, composition and literature) 3
History                      2
(American history required) 2
Laboratory science           2

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

- Computer science
- Economics
- Foreign language
- Geography
- Government
- Psychology
- Sociology
- Speech

Oklahoma Residents

Freshman Admission. For the Fall 1992 or Spring 1993 Semester: to be admissible, students must graduate from accredited high schools, participate in either the American College Test (ACT) or a similar acceptable standardized test, and satisfy at least one of the following performance requirements:

1. Maintain a four-year high school grade-point average of 3.00 or higher on a 4.00 grading scale, and rank scholastically among the top one-third of their class; or
2. attain a composite score of 21 or higher on the enhanced ACT or a 990 or higher on the SAT.
Summer Probation 1992. First-time college freshmen who meet the performance requirements listed above may take a maximum of two curricular deficiencies in the summer term prior to the regular semester of desired entry. If the course/s is/are successfully completed with at least a "C" or equivalent, the student will be admitted.

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 Oklahoma State Regents for Higher Education (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.

Transfer Admission. For the purpose of determining admission, a transfer student is one who has earned a minimum of seven or more 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 more than six hours of college level credit must satisfy the retention standards listed below for the hours being transferred.
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:
- 6 through 45 semester hours: 1.70
- 46 or more semester hours: 2.00

Transfer Probation. Any transfer student falling slightly below the admission requirements listed above may be considered for admission on probation.

Nonresidents of Oklahoma
(All nonresidents must include a nonrefundable $10 application fee with their Applications 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 admitted 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 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 (a 2.00 cumulative GPA on a 4.00 scale) during their initial term of enrollment.

Transfer Probation. Any transfer student falling slightly below the admission requirements listed above may be considered for admission on probation.

Readmission. A nonresident 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 readmitted to OSU.

Pre-engineering (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 "Admission Requirements" in the "College of Engineering, Architecture and Technology" section.)

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

Special Admission Programs

Alternative Admission. As authorized by the Oklahoma State Regents for Higher Education, a number of first-time freshman students, not to exceed eight percent of the class, may enroll, beginning with the Fall 1992 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.

Adult Admission. Adults 21 years of age or older or individuals on active military duty may be admitted as "special adult" applicants. 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.

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.

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 enhanced ACT or a 950 or higher 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.

Non-degree Option. Students who wish to enroll in courses without intending to pursue a degree may be permitted to enroll in up to nine credit hours without satisfying admission requirements. If a student wishes to enroll in additional course work (over the nine hours allowed) he or she will be required to satisfy admission requirements.

International Admission

International students are required to meet academic performance standards which are equivalent to those established for all nonresident 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 Student (F) and Exchange Visitor (J) visas. 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 U.S. $10.00 made 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 1-20 processed for transfer by the Office of International Student Services at OSU. The student with J Visa status should contact his or her foreign student advisor 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," stated in the Catalog. The international student is eligible for academic admissibility under this criteria only if he or she was 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," stated in the Catalog.

Readmission (International Students). An international student who has attended OSU but did not attend OSU the immediate past semester must file an Application for Readmission and an updated Financial Guarantee. 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 readmitted to OSU.

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.

Transferring 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 reinstate 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 international 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 1-20 or on the Form IAP 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 to 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 U.S. 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 so 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 K. Jones, Associate Registrar
Darlene Wilson, Administrative Associate
Paula M. Barnes, Coordinator, Athletes' and Veterans' Eligibility
Joan M. Payne, Coordinator, Certification Services
Vera M. Bilyeu, 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.") All new freshman and transfer students are required to submit an advance fee payment prior to participation in the enrollment process.

First-time Students (Freshmen and Transfer)

The fall enrollment and orientation period for new freshmen takes place during the summer months, while enrollment for new transfer students begins in the spring. New students receive infor-
mation 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, both 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 enrolling. Wentz Scholars, President’s Distinguished Scholars (PDS), President’s Leadership Council (PLC) recipients, and participants in the OSRHE 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 day 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, 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.

Withdrawal

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” “WP” or “WF”, (accord- ing 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.

Oklahoma State University
vehicle registration cards are not lost, stolen, or destroyed. 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.

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 is 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 and paying 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.

Administrative/Professional and Classified Staff. Permanent, full-time (100%) active status staff members who meet the academic requirements of the University may enroll for credit and pay one-half the general and activity fees in effect at that time. Enrollment in University courses which meet during the staff member's normal working hours will be limited to one course or a maximum of five hours. There is no limit on the number of courses a staff member may enroll in after normal working hours. If enrollment does not exceed one course, only the department head's approval is needed to receive a fee waiver. If the staff member is enrolled in more than one course, his or her dean and vice-president must also give approval for a fee waiver. For more information, refer to the Policy and Procedures Letters.

Early enrollment. Full-time employees of the University who have approval for enrollment may turn in their Trial Schedule forms to the Office of the Registrar any time after the class schedule book is available. An effort will be made to schedule classes of full-time employees to minimize conflict with their University employment.

Official Records

Freshman 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 freshman students 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.

Transcripts of academic records at the University may be ordered in person or by mail from the Office of the Registrar, Transcripts Section, 103 Whitehurst, Oklahoma State University, Stillwater, Oklahoma 74078-0102. Official transcripts will not be available until approximately one week 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.
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.

Withholding Disclosure of Information. Currently enrolled students may withhold disclosure of directory information. During the first two weeks of the fall semester a student may file with the Office of the Registrar a written request not to release directory information. The University assumes that failure on the part of any student to specifically request the withholding of directory information indicates individual approval for disclosure.

Access to Records. No other information regarding students' educational records may be disclosed to anyone without written consent of students, except to "school officials" who have a legitimate educational interest in the student.

Students, or parents of dependent students, may inspect and review their educational records. Some form of photo identification must be displayed before access to educational records will be allowed. Parents of a dependent student may challenge denial of access by producing the most current copy of Internal Revenue Form 1040.

Definitions. "Educational Record" refers to those records which are directly related to a student and are maintained by an educational institution.

"Directory Information" includes: student's name; local and permanent addresses; telephone number; date and place of birth; major field of study; weight and height of students participating in officially recognized sports; dates of attendance at Oklahoma State University; degrees, honors, and awards granted or received; academic classification such as freshman, sophomore, junior, senior, etc.; sex; class schedule; educational institutions previously attended; degree(s) held, date(s) granted, and institution(s) granting such degree(s); dissertation or thesis title; adviser or thesis adviser; participation in officially recognized organizations, activities, and sports; parents' names and addresses.

"School official" is defined as an individual currently serving as a member of the Oklahoma State University Board of Regents or classified as faculty, administrative, or professional, and the staff such school officials supervise. "Legitimate educational interest" is defined as an interest which results from the duties officially assigned to a school official and which are related to such a school official's responsibility for facilitating the student's development.

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. If 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 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 four-digit numbers with the first digit indicating 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.

The figures which follow are for the 1992-93 academic year. These fees are subject to change without notice, as provided by University, Board of Regents, and OSRHE policies.

**Oklahoma Residents**

<table>
<thead>
<tr>
<th>Course Level</th>
<th>General Fee</th>
<th>Student Activity Fee</th>
<th>Library Automation and Mainframe Fee</th>
<th>Student Assessment Fee</th>
<th>Total per Credit Hour</th>
<th>The Daily O'Collegian Fee per Semester*</th>
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<td>$57.20</td>
<td>$2.00</td>
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<tr>
<td>Graduate-division courses</td>
<td>$63.75</td>
<td>$2.40</td>
<td>$1.50</td>
<td>$1.00</td>
<td>$72.95</td>
<td>$2.00</td>
</tr>
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*For students who are eligible to pay the lower fee.

The Daily O'Collegian fee is based on the number of pages of the newspaper.

Oklahoma State University
Nonresidents of Oklahoma

Lower-division courses
- $45.00 General fee
- $2.40 Student activity fee
- $4.30 Facility fee
- $1.50 Library automation and mainframe fee
- $1.00 Student assessment fee
- $100.00 Nonresident tuition
- $154.20 Total per credit hour
- $2.00 The Daily O'Collegian fee per semester
- $46.00 Student Health Center fee per semester* 

Upper-division courses
- $48.00 General fee
- $2.40 Student activity fee
- $4.30 Facility fee
- $1.50 Library automation and mainframe fee
- $1.00 Student assessment fee
- $112.75 Nonresident tuition
- $169.95 Total per credit hour
- $2.00 The Daily O'Collegian fee per semester
- $46.00 Student Health Center fee per semester* 

Graduate-division Courses
- $63.75 General fee
- $2.40 Student activity fee
- $4.30 Facility fee
- $1.50 Library automation and mainframe fee
- $1.00 Student assessment fee
- $138.25 Nonresident tuition
- $211.20 Total per credit hour
- $2.00 The Daily O'Collegian fee per semester
- $46.00 Student Health Center fee per semester* 

College of Veterinary Medicine

Oklahoma Residents
- $1,900.00 General fee per semester
- $2.40 Student activity fee per credit hour
- $4.30 Facility fee per credit hour
- $1.50 Library automation and mainframe fee per cr. hr.
- $2.00 The Daily O'Collegian fee per semester
- $46.00 Student Health Center fee per semester* 

Nonresidents of Oklahoma
- $1,900.00 General fee per semester
- $2.40 Student activity fee per credit hour
- $4.30 Facility fee per credit hour
- $1.50 Library automation and mainframe fee per cr. hr.
- $3,410.00 Nonresident tuition per semester
- $2.00 The Daily O'Collegian fee per semester
- $46.00 Student Health Center fee per semester* 

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

Fees for Special Services

All students pay special fees each semester to contribute to the betterment and general welfare of the campus community. The activity fee provides partial support to such programs, services and organizations as the Student Government Association, collegiate student councils and related student organizations, Allied Arts, fine arts, athletics, intramural activities and sports clubs, minority student organizations, and the Student Activities Office. User fees, other fund-raising activities, and, in some cases, membership dues provide the remaining support to make these positive, constructive, and meaningful programs and services available to all students.

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 will not use the facilities and will not be charged facility fees when enrolled (1) only in a specialized course(s) offered for a special-interest group and not in any other course(s) in the University or (2) in a course(s) which requires that the student reside off the campus for the entire semester or summer session (medical technology, geology and forestry summer camps). Such courses typically are offered at unusual times and presented in a concentrated curriculum format.

The library automation and mainframe fee defrays the cost of equipment, software, and other aspects related to operating the on-line computerized library service.

The assessment fee provides for skills assessment and evaluation of students’ capabilities at various stages of their academic careers, and to get feedback from students regarding their course work.

Students enrolled in seven or more hours per semester will be assessed a health fee which includes a fee for comprehensive health and pharmacy services and a fee for bond indebtedness. Students enrolled in six or fewer hours will be assessed the bond indebtedness fee only (which does not allow use of the medical services); however, health and pharmacy services are available if the student chooses to pay the full fee.

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 int’l undergraduate students: $15.00
- Application fee for nonresident undergraduate students: $10.00
- Application fee for all graduate 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 credit hour):
- $50.00

Extension course fees (per credit 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: $6.00
- Dissertation microfilming fee: $35.00

Health risk assessment fee for first-time students: $20.00

International student status maintenance fee:
- per semester: $15.00
- per summer session: $10.00
Late enrollment fee:
- first day $5.00
- maximum $10.00

There is no charge for transcripts for OSU retirees or persons who are 65 years of age or older.

Other Expenses
Books and supplies used by the student are available in 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, enrichment, 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 to the University's Office of International Programs.

Fee Policy for Faculty and Staff
The advance fee payment, the facility fee and the student health center fee are waived for permanent, full-time faculty and staff. These employees are eligible to enroll for credit or audit courses and be charged fees at the rate of one-half the amount charged other students under the University fee waiver policy (one-half the general fee, for auditing only, and one-half the activity fee). To be eligible under this fee policy, an employee-student must submit a completed Request for Faculty-Staff Fee Waiver form to the Office of the Registrar prior to the beginning of classes. If the form is not on file prior to the beginning of classes, the student will not be granted the waiver in fees.

Any individual 65 years or older may audit a class at no charge.

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.

Refunds
Refunds and deposits that may be due a student will be first applied to encumbrances owed to the University.

Drop Fee Policy
A student dropping a course prior to the end of the second week of a regular semester or the first week of a summer session will receive a 100 percent refund of fees. No refund of fees will be given for courses dropped after the second week of a regular semester or the first week of a summer session.

Withdrawal Fee Policy
A student withdrawing from the University during the first three weeks of a regular semester or during the first week of a summer session will receive a refund of a percentage of total fees. The percentage of fees to be refunded:
- Prior to the first week of a semester or summer session: 100 percent
- During the first week of a semester or the first two days of a summer session: 80 percent
- During the second week of a semester or the third or fourth days of a summer session: 50 percent
- During the third week of a semester or the fifth day of a summer session: 25 percent
- After the third week of a semester or the first week of a summer session: 0 percent

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 academic 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.

Refunds and deposits that may be due a student will be first applied to encumbrances owed to the University.

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 1991-92.

**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 $420.00
- 10 meals per week $675.00
- 15 meals per week $707.00
- 20 meals per week $738.00

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*Oklahoma State University 17*
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.

Kerr and Drummond Residence Halls (Air-conditioned.)
- Double Room: Semester Charge $772.00
- Wentz, William North and South Residence Halls (Air-conditioned and room cable TV. Wentz is open only to students who are sophomores and above.)
  - Double Room: Semester Charge $797.00
- East and West Bennett Residence Halls
  - Double Room: Semester Charge $632.00
- Stout Residence Hall (Stout is open only to students who are sophomores and above.)
  - Double Room: Semester Charge $684.00
- Iba Graduate House (Air-conditioned.)
  - Double Room: Semester Charge $837.00

Bennett Apartments (Air-conditioned and room cable TV.)

The Bennett Apartments are available for men. The apartments range from two bedroom, two bath and a living room for three or four residents, to two bedrooms, or a living room and one bedroom with bath for two residents. To request an apartment the student should write Bennett Apartments as one of the hall choices.

- Per Person: Semester Charge
  - 4 Per Apartment: $906.00
  - 3 Per Apartment: $935.00
  - 2 Per Apartment: $1,184.00

University Apartments

(Rates include a telephone instrument and local phone service in each apartment. There is an additional $8.25 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 of residence.

- For men: 3 Per Apartment $935.00
- 4 Per Apartment $906.00
- 2 Per Apartment $1,184.00

Furnished apartments include coffee table, end or corner table, one table lamp, a love seat, 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.

- For men: 3 Per Apartment $935.00
- 4 Per Apartment $906.00
- 2 Per Apartment $1,184.00

Estimated Total Expenses for Students

An estimated budget (based on 1991-92 figures) for an undergraduate student at OSU is as follows:

**Resident**
- Tuition and Fees: $2,311.00 (Based on 14 credit hours)
- University Housing and Board: $1,480.00 (Based on average, double occupancy, residence hall charges)
- Textbooks and Supplies: $268.00
- Ave. Misc. Personal Expenses: $1,187.00
- Total Per Semester: $5,246.00

**Nonresident**
- Tuition and Fees: $822.00 (Based on 14 credit hours)
- University Housing and Board: $1,480.00 (Based on average, double occupancy, residence hall charges)
- Textbooks and Supplies: $268.00
- Ave. Misc. Personal Expenses: $1,187.00
- Total Per Semester: $3,757.00

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 in a timely manner all financial accounts owed to the University. 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 1.5 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.

Financial Aid

Charles W. Bruce, Director
Patrick Kennedy, Assistant Director, Administrative Services
Gary Garoffolo, Assistant Director, Programs
Linda K. Good, Coordinator, College Work Study Programs
Margaret Betts, Coordinator, Information Services
Cathy Bird, Coordinator, Records Management
Bonnie Joerschke, Senior Counselor
Thressa Bowler, Counselor
Gary Davidson, Counselor
Judith Finnegan, Counselor
Cindy M. Jensen, Counselor
Sandra Verboon, Counselor

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 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.

Grants

Undergraduate students who have not completed their first undergraduate degree are eligible to apply for two federal grant programs, the Pell Grant and Supplemental Education Opportunity Grant. Undergraduate and graduate students who are Oklahoma residents are eligible to apply for the state grant program, the Oklahoma Tuition Aid 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 pages 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.

College Work-Study

This program is designed to help students meet their educational expenses through part-time employment. The Office of Student Financial Aid determines award amounts on the basis of financial need. While all College Work-Study student employees are paid at least the current federal minimum wage, the actual rate of pay depends on their qualifications and the types of jobs they hold. Eligible students may be employed by any participating office or department at OSU or at an off-campus, non-profit agency. By attempting to place students in areas in which they are interested, the College Work-Study Program helps to stimulate the development of worthwhile work experience for the student while attending college.
Student Loans

OSU has several loan funds 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.

Institutional loans include short- and long-term loans. The short-term loan program provides up to a maximum of $200 per semester (less a $10.00 service charge) for the purpose of meeting educationally-related expenses which are not charged to a student’s University account. Students are billed for the loan through the Office of the Bursar on the billing statement of the month in which they apply. Applications, however, must be made in person at the Office of Student Financial Aid.

Long-term loan programs consist of the Perkins Loan, Stafford Loan, and Parent Loan and Supplemental Loan programs. The rate of interest on a Perkins Loan during the period of repayment is five percent simple interest per annum on the unpaid balance. The rate of interest on the Stafford Loan is eight percent for first-time borrowers.

The rate of interest on a Parent Loan or Supplemental Loan is variable but cannot exceed 12 percent. Both loans require additional applications which are available at lending institutions or the OSU Office of Student Financial Aid.

Student Employment

The Office of University Personnel Services, Employment Section, provides assistance to OSU students seeking part-time employment. Students are informed of on-campus job opportunities by notices posted on a bulletin board outside room 407 Whitehurst. Students may obtain job applications and referral information in room 407 Whitehurst. The largest number of jobs are available at the beginning of each semester; however, jobs do become available throughout the year.

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. Ideally, students seeking on-campus work should schedule their classes to allow for a block of four hours free time during the morning or afternoon, Monday through Friday. Off-campus job opportunities are posted at 360 Student Union, University Placement. More flexible hours may be available in off-campus jobs.

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 $700 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.

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.

Graduate students should contact their academic department regarding application procedures and scholarship deadlines.

Nonresident students should also inquire about new policies for full and partial waivers of fees and tuition.

Wentz Service Scholarships

This program provides students with work settings in which they can develop skills to benefit them in their future employment. Application is made directly to any of the respective colleges or participating administrative offices at OSU. Minimum requirements are a 3.20 GPA, completion of at least 28 hours prior to the beginning of the award period, and full-time status during the award period. Service scholarship recipients earn a minimum wage of $4.35 per hour and may earn up to $1,600 per year. Recipients will be notified about their awards and work assignments by either the colleges or administrative offices through which they receive their scholarships. Interested students should contact the Office of Student Financial Aid.

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 computerized 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.
Residential Life

Robert Huss, Director of Residential Life
Eddie Denman, Assistant Director of Residential Life-Administrative and Business Services
Dane Blubaugh, Assistant Director of Residential Life-Construction and Renovation
Kent Sampson, Assistant Director of Residential Life-Residence Halls East
Tim Luckadoo, Assistant Director of Residential Life-Residence Halls West
Dave Stoddart, Assistant Director of Residential Life-University Apartments

The Office of Residential Life exists to aid its residents’ academic pursuits. Students who live on campus are more likely to graduate in four years and maintain higher grades than those off-campus counterparts. The Office of Residential Life provides residence hall space for approximately 5,000, apartments for more than 700, and a food service program, available to all students and staff, that is nutritional, convenient and enjoyable. All freshmen live in residence halls. Exceptions can be made for one of the following reasons: being married; being 21 years of age or older; living with parents in Stillwater or the surrounding area; being a veteran; living in a fraternity or sorority house (sorority pledges generally live in residence halls due to limited sorority house space); or having completed 27 credit hours. Exceptions must be requested in writing and approved by the Office of Residential Life.

All inquiries should be addressed to the appropriate office, depending on the student’s housing needs. All accommodations are rented on a contract date priority basis. Applications and contracts are encouraged to be sent in 10 months before the desired occupancy in order to receive the preferred on-campus housing location.

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 Wilham 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 laundromat 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 Wilham 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. Special menus include delicatessen, health club, country cooking, fast food and others. These specialty plans vary as the residents’ 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, but not live there.

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., Chief of Staff
Donald L. Cooper, M.D., Staff Physician and Director of Athletic Medicine
O. Joseph Hake, M.D., Staff Physician
Thomas L. Hansen, M.D., Staff Physician
Ngheim X. Huc, M.D., Staff Physician
Mary Sue Pinski, M.D., Staff Physician
Ronald R. Sanders, M.D., Staff Physician
Sherry Maxwell, Ed.D., 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, 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 extracurricular career.

The OSU Student Health Center maintains a staff of seven full-time physicians, three mental health professionals, 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.

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 fee is charged.

For more information contact the Student Health Center, 1202 West Farm Road, Oklahoma State University, Stillwater, Oklahoma 74078.

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 individual 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, the Career and Study Skills 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 provide 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
Regina Henry, International Student Adviser

The International Student Services office (ISS) provides assistance to more than 1,500 international students from countries as far away as Singapore and Zambia 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 advisement to 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. 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
Marie Basler, Program Adviser, Off-campus Students and Adult Students
Anitra Archer, Program Coordinator, Allied Arts
Muhrizah Brunken, Program Coordinator, SUAB and Student Union Programs
Virginia Garner, Coordinator, Volunteer Center

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.

Special Programs, Services and Facilities

Special Programs

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.

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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 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 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 stated 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 associate, 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 the 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 27 degree programs, six 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
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. Credit will be awarded to students who have taken Higher Level courses through the International Baccalaureate Program and scored at least a 4 (on a seven point scale) on the Higher Level course examination. This credit will be awarded on a course-by-course basis.

Military personnel and veterans who wish to establish credit for military training should submit to the Office of 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), and any certificates of completion for military schools attended. OSU also 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.

National Student Exchange

National Student Exchange is a program designed to provide the opportunity for OSU students to attend a college or university in another state without having to pay for the high cost of out-of-state tuition. It also allows students from 106 other institutions to attend OSU, at an in-state tuition rate. For additional information contact the Office of Special Programs, 201 Whitehurst.

Oklahoma Scholar-Leadership Enrichment Program

The Oklahoma Scholar-Leadership Enrichment Program (SLEP) is a state-wide 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, the Soviet Union and Spain.

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, 322 Life Science East, 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 advising, 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-201L Business Building
- Education-102 Gundersen
- Engineering, Architecture and Technology-101 Engineering North
- Home Economics-113 Home Economics
- 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 students 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 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 a baccalaureate degree. UAS advisers are knowledgeable about the degree programs in all six undergraduate academic colleges, and they maintain close, working relationships with the student academic services offices throughout 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 experienced academic difficulty, many of whom are on probation or have been readmitted after suspension. AAP offers 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 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 information 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 two 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.

The UCC main office is 113 Math Sciences. The UCC operates remote facilities for general student and faculty use. These remote facilities include computer terminal "clusters" and printers in 009 Business, 113 Engineering South, 108 Math Science, Wentz Residence Hall basement, and 205 and 221 Thatcher Hall. Hours of availability for these terminal clusters vary by location, depending upon building hours.

A public microcomputer lab equipped with IBM and Macintosh microcomputers is located in room 020 of the centrally located Classroom Building. These microcomputers are equipped with a variety of popular software packages for word processing, statistical analysis, terminal emulation and computer programming. Other software is placed on reserve by faculty for use by their students. Students may also bring their own software for use in this lab. The micro lab is operated approximately 75 hours each week, including Saturdays and Sundays.

The UCC also provides many other valuable services. Special microcomputer purchase programs make it possible for qualified faculty, staff and students to buy equipment at very attractive prices. A central help desk provides support and problem solving to walk-in and phone-in computer users. The UCC also publishes its own user newsletter to keep users informed of the latest changes, tips and techniques.

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 and differential equations.

Graduate and undergraduate students majoring in mathematics are available in 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 faculty and staff 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 job search activities related to internships, part-time employment while attending college, and full-time professional employment following graduation. Placement services for students and alumni in the colleges of Agricultural Sciences and Natural Resources, and Engineering, Architecture and Technology are coordinated by their respective student academic services offices.

Services include facilitating the campus interview program, providing job vacancy information to registrants, responding to employers' requests for referral of qualified job applicants, assisting with resume and interview preparation, sending placement credentials to employers, and developing relationships with employers to promote opportunities for employment of OSU students and graduates, including internship and part-time employment opportunities.

Special events sponsored by University Placement provide opportunities for interaction between registrants and employers include Graduate/Professional School Information Day, Arkansas/Oklahoma Job Fair, Internship Day, Mock Interviews, Minority Career Day, MBA Job Fair, University Career Day, Summer Employment Placement Day, and Teacher Placement Days.

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. and Mrs. F. 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, Department of Art 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, Lucas 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

The F.M. "Pete" Bartlett family, with a dream of independent living for all, funded a gift to renovate a residential structure on campus. This dream of a research and demonstration laboratory illustrates universal design, that is, "design for the life span of all people regardless of age, sex, ability or change in ability."

The laboratory may serve as a residence for a disabled graduate student in order to conduct case study research related to functionality of the design features, specialized technology, and code standards for accessibility. The
special features of the laboratory include computerized environmental control systems, motorized windows, blinds, and draperies; adjustable-height work centers and other devices related to everyday functioning.

Research is in process for the numerous visitors to the laboratory to assess attitudes, knowledge, and functionality of "Independence Hall." This provides a base of knowledge for builders, architects, interior designers, and other professionals to work with clients experiencing life span changes.

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. Campus recreation programs include 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 5.2 million books, documents and microforms, and about 18,000 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 photocopy machines situated on every floor, in the 102 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.

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.

PETE is the name of the Library's new automated system. When fully operational, the system will 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 25 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. 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 on the second floor of the Center for International Trade Development.

Maps. The Map Room houses one of the largest and most comprehensive collections of maps in the state. This collection contains more than 130,000 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.

Microforms. 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.** 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 depicting 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, campus photographs dating back to 1890; and papers from the Scott, Bennett, and Willham administrations. This area is located at the east end of the second floor and is open from 8:00 a.m. to 5:00 p.m. on Monday through Friday. Material in these collections must be used in the adjacent reading room.

**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 departments of Music and Theater. 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, 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 Oklahoma Museum of Higher Education will be the only museum offering a comprehensive history of higher education for an entire state.

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. Admission is free; donations are appreciated.

**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, 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 $10.5 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.

Student Life

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 non-credit instructional programs each semester to students, faculty, staff and their dependents. Specialty 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.

Intimurals. 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 Student Union Activities Board. This series brings the best of foreign and classic films to campus.

The 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 Life

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 24 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, 050 Student Union, OSU, Stillwater, Oklahoma, 74078.

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.

Residence Hall Organizations

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.

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 concerning their interest areas.

Allied Arts conducts lecture-demonstrations in conjunction with a number of its classical arts performances. In this manner, students can gain additional knowledge of classical arts and artists.

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.

Alumni Programs and Services

The Alumni Association serves as a liaison between OSU and its former students, and provides members immediate and direct contact with the University. The mission of the OSU Alumni Association is to serve its members and alumni and to support and serve the needs of Oklahoma State University, its students, faculty, staff and friends.

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. Alumni programs are directed by an executive director, five program directors, and a student program coordinator.

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 honor programs for the top academic achievers 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 scholarships for students in their areas.

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.

Publications. The Oklahoma State Magazine is the featured publication that is sent to all Association members. This publication provides information about the University and alumni programs.

The Alumni Office is located in Room 212 of the Student Union. Opinions and suggestions are welcome and will receive the full attention of the professional staff.

OSU Foundation

Established in 1961 as an independent, private, not-for-profit corporation, the OSU Foundation is the official fund-raising 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-Oklahoma City

James E. Hooper, Provost and Vice-President of Oklahoma State University

Joe D. Kinder, Assistant Director for Business and Finance

Dr. Fred Vogel, Interim Assistant Director for Instruction

Carla C. Splaingard, Assistant Director for Student Affairs

Evelyn H. Wilson, Director of Admissions and Registrar

Moving into its third decade, Oklahoma State University-Oklahoma City (OSU-OKC) truly reflects the Oklahoma City Chamber of Commerce motto, "Growing with Pride." From its beginning enrollment of 92 students in 1961 to today's thriving learning environment of more than 6,000 full-time, part-time and continuing education students, the Oklahoma City campus has become the institution most directly related to the education of professional technicians in the United States. OSU-OKC offers college courses leading to an associate degree, preparing the student in two years for employment in various career fields, as well as providing credits that are transferable to bachelor's degree programs and general education courses.

Accredited by the North Central Association of Colleges and Schools, OSU-OKC offers two-year programs leading to the associate degree in accounting; architecture; aviation; civil; computer programming; construction; electronics; environmental systems; energy/environmental resources management; equine racing; fire protection; general engineering; horticulture; industrial drafting and design; industrial loss prevention; instrumentation; interpreter training; management; municipal fire protection; nursing science; police science; surveying; technical communications technologies.

Teaching methods emphasize the application of theory through state-of-the art laboratories and equipment. The faculty are working professionals with in-depth business and industry experience in their areas of expertise.

The curricula are designed to prepare students for a variety of positions in business, government and industry. Specialized technical courses enable graduates to understand the underlying purposes of the operations and functions for which they are responsible and to utilize basic scientific principles in developing ideas. General courses in communication skills, personal development, and social and economic principles broaden the students' interests and aid them in the further development of their abilities.

Oklahoma State University-Oklahoma City is located at the crossroads of Oklahoma City, Interstate 44 and Interstate 40, at 900 North Portland, Oklahoma City, Oklahoma, 73107.

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 pacesetter in this specialized field of higher education.
OSU-Okmulgee's mission is accomplished in a multidimensional program of general studies, related and specific technologies, and cocurricular skills. 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 on 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.

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 fire-arms, 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 or she 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 and 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.)

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<tr>
<th>Bachelor's</th>
<th>M Master's</th>
<th>D Doctor's</th>
<th>S Specialist</th>
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<td>Agricultural Sciences and Natural Resources</td>
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<td>VM</td>
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### Accounting (B,M) Bus/Gr
- Aerospace Studies (B) A&S
- Agribusiness (B) Ag/Bus
- Agricultural Communications (B) Ag
- Agricultural Economics (B,M,D) Ag/Gr
- Agricultural Education (B,M,D) Ag/Gr
- Agricultural Engineering (B,M,D) Ag/Gr
- Agronomy (B,M,D) 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/Gr
- 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

### Summary of degrees offered:
- Bachelor's: 83
- Master's: 68
- Doctor's: 46
- Specialist: 5

### Additional Departments:
- Journalism and Broadcasting (B) A&S
- Mass Communications (M) Gr
- Leisure (B) Ed
- Management (B) Bus
- Management Information 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,D,S) 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
- Psychological 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 (M) 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
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In addition to these minimal regulations, there may be additional college, department or program requirements which apply. Students are advised to review all steps of their academic progress with their academic adviser.

1. Admission-Withdrawal

1. Admission of Freshmen. Policies and procedures governing the admission of new freshmen are detailed in another section of the Catalog. (See "Admission" section.)

1.2 Admission of Transfer Students. Policies and procedures governing the admission of transfer students are detailed in another section of the Catalog. (See "Admission" section.)

1.3 Admission to Certain Professional Programs. Admission to certain programs as approved by the University may be restricted. (See "Admission" section and college sections in the Catalog.)

1.4 International Student English Proficiency Requirement. As a condition of admission to undergraduate study at OSU, all persons for whom English is a second language shall be required to present a score of 500 or higher on the Test of English as a Foreign Language (TOEFL). Applicants seeking admission by transfer who have attended an accredited college or university for a minimum of 36 semester credit hours with passing grades shall be admitted on the same basis as other transfer students. Applicants who have attended another institution for fewer than three semesters or terms shall be required to meet the same requirements as applicants for first-time admission. (See "Admission" section of the Catalog.)

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>45</td>
<td>1.70</td>
</tr>
<tr>
<td>46 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.

Any student not maintaining progress toward his or her educational objective as indicated above will be placed on probation for one semester. At the end of that semester, he or she must have a semester GPA of 2.00 in a minimum of 12 hours of regularly-graded course work, not to include activity or performance courses, or meet the minimum standard required above, in order to continue as a student.

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 or the semester GPA of 2.00, may enroll in an additional 15 semester hours in a further attempt to achieve the requirements for retention. Such students will be afforded this extension one time only.

A student enrolling on probation should seek help from an academic adviser and a counselor in the University Counseling Services when deciding on an academic load and extracurricular activities. A student whose poor grades may have been caused by health problems should seek the help of a physician.

### 1.7 Academic Suspension

A student on probation will be suspended when he or she earns a semester GPA of less than 2.00 in a minimum of 12 hours of regularly-graded course work not including activity or performance courses, and the cumulative grade-point average for all hours attempted falls below the following:

<table>
<thead>
<tr>
<th>Total hours attempted</th>
<th>Minimum cumulative grade-point average required</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 through 45</td>
<td>1.70</td>
</tr>
<tr>
<td>46 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 or the semester GPA of 2.00, may enroll in an additional 15 semester hours in a further attempt to achieve the requirements for retention. Such students will be afforded this extension one time only.

### 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 (unless the faculty appeals committee grants immediate reinstatement).

Readmission after one regular semester has elapsed will be considered on the merits of the individual case. Suspended students can be readmitted only one time. If a student is suspended a second time, he or she must attend another institution and raise the cumulative GPA before readmission to OSU can be considered.

### 1.9 Readmission

A student who has 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. 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 "WF" (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.

### 2.0 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 classified 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 12 hours during that semester.

A student in the terminal phase of the plan of study leading to a master’s or doctoral degree, 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.

### 3.0 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
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:

a. 40 semester credit hours, including six semester credit hours of English composition;
b. three semester credit hours of American history (HIST 1103), and three semester credit hours of American government (POLSC 1013);
c. 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);
d. at least one course in the International area and one course in the Scientific Investigation area;
e. 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 Provost and Vice-President for Academic Affairs.

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.

3.4 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:

a. 40 semester credit hours, including six semester credit hours of English composition;
b. three semester credit hours of American history (HIST 1103), and three semester credit hours of American government (POLSC 1013);
c. 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);
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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 Provost and Vice-President for Academic Affairs.

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A Analytical and Quantitative Thought
H Humanities
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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 1033 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
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 student's 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 better. No fee is required.

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. 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;
b. the credits must not be required or needed for the baccalaureate degree;
c. the total registration must not exceed 18 credit hours for a semester or nine credit hours for a summer session;
d. the student must either 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 summer or summer session in which graduate credit is requested;
e. admission to courses taken for graduate credit must have the approval of the course instructor, the head of the department in which the courses are offered and the dean of the Graduate College;
f. not more than 14 semester credit hours taken while a senior may be approved for graduate credit, and a minimum of 16 semester credit hours must be completed in residence after the student registers in the Graduate College. Courses taken for graduate credit during the senior year may not be accepted for graduate credit at institutions other than OSU;
g. the use to be made of the graduate courses will be determined by the adviser when the student registers in the Graduate College and submits a plan of study for an advanced degree.

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 “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. 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 absolved of the formal charge, he or she may drop the course with either a “W,” “WP,” 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.

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 those 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 5000 or 6000 level is graduate standing in addition to any other prerequisites listed. Instructors may waive prerequisites when the student’s background justifies this action. 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 scholar- ships will be given priority in enrolling. Scholarships that qualify students for priority in turning in trial schedules are University band, athletic, and graduate teaching assistantships for teaching or research assignments. Wentz scholars, President’s Distinguished Scholars (PDS), President’s Leadership Council (PLC) recipients, and participants in the OSRHE Academic Scholars program 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.) Full-time employees of the University who have approval for enrollment may turn in their Trial Schedule forms to the Office of the Registrar any time after the class schedule book is available. An effort will be made to schedule classes of full-time employees to minimize conflict with their University employment. Working part-time for the University or outside the University does not qualify the student for priority in turning in a trial schedule.

5.9 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.

5.10 Payment of Tuition and Fees. Fees and tuition will appear on the regular monthly statement which is mailed to the student’s local address. All fees and tuition associated with the student’s enrollment are 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 the advance fee payment will accrue an interest penalty at the rate of 1.5 percent per month. Accounts must be cleared before the student can obtain the release of any records, obtain a transcript, receive a diploma, or enroll at OSU for subsequent semesters.

5.11 Audit. A student who does not wish to receive credit in a course may, with the approvals 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. The audit form is available in the Office of the Registrar. (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 "AU" 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 student's college may recommend to the Office of the Registrar the student's transcript.

Any individual 65 years or older may audit a class at no charge.

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:

- **WP** and **WF**. 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" symbol from the transcript, but a second entry is permitted. A condition 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, a final grade was not reported by the student's instructor. The in-structor 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.

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," "W," "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 freshmen students shortly after mid-semester. 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 advisor.

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 transcript, 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" or contact the Office of the Provost and Vice-President for Academic Affairs.)

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 "I" 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 President's 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 student's 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 requirement 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 met 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.
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 administrative and Board of Regents approval.

To obtain copies of University policies related to students and student activities, students may go to the Office of Student Activities (060 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 disturb the public peace, do violence to any person, destroy, molest, or deface 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. 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 or she 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 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 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.

e. Subject to the provisions of Paragraphs 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 on or before the due dates herein described.

a. All students are required to pay $40 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. 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 the 15th day of each month following billing.

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 1.5 percent 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 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 financial institution against which it is drawn may result in the cancelation of the student's enrollment for failure to pay a delinquent account.

(See Policy and Procedures Letter 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 implies 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.

The total effort is directed toward corrective and preventive rather than punitive discipline. For this reason, the main concern lies with consideration of the individual as well as his or her actions. On the basis of this individual approach to discipline, emphasis is placed on due process in order to ensure 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.

- Any form of cheating, and/or assisting with cheating, including but not limited to plagiarism, unauthorized possession of examinations, falsification of records.
- The theft or improper possession of University property or property belonging to others.
- Individual or group conduct which results in disturbance or distress to others or which causes defamation, 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 21 O.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 a 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 forfeit for a period of not less than one (1) year all of the property, interest, estate, funds, equipment, and property owned or possessed by such organization or by the individual.

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 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, brandishing, forced calisthenics, exposure to the elements, forced consumption of any food, alcoholic beverage as defined in Section 506 of Title 37 of the Oklahoma Statutes, nonintoxicating beverage as defined in Section 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 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 A.M.

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

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

i. 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 or 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 other Student Union Hotel space, is prohibited.

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 while 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 ensure 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 fire safety equipment. In addition, vandalism, tampering or reckless action that causes sprinkler 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 conferee or guest, the above measures (excluding 1 b) 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 Officer. After the review with the student, staff members of the University Discipline Office have a responsibility and authority to take disciplinary action if such appears in their judgement 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 or she has been treated unfairly, he or 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 Office of 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 Office of 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 Student 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 Office of the Vice-President for Student Services, the Office of the President 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 or 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 of 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 or 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 or 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 or her choice.

5. The student or his or her counsel shall be entitled to ask questions of the hearing officer or of any witnesses.
5. Drug and Alcohol Use and Abuse

a. Consumption. See 3. k.

b. Policy of Misconduct at Off-campus Events. Students who participate in off-campus events where alcohol is consumed are expected to obey all civil laws. Any misconduct at an off-campus event sponsored by a student organization shall be referred for possible disciplinary action against the organization and/or the individuals involved, in accordance with University policies and procedures.

c. 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.

d. 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. Guest speakers and other special programs on alcohol abuse.
   e. Education as a part of disciplinary action for students violating local or civil laws pertaining to alcohol or drug 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.
4) Training programs for staff and other persons interested in intervention techniques.
5) Curricular activities--assist in the development of curriculum modules on substance abuse for appropriate courses.

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 of employment, referral for prosecution and/or completion, at the individual's expense, of an appropriate rehabilitation program. Any disciplinary action shall be taken in accordance with applicable policies of the University.

4.01 External Sanctions

Local, state and federal laws provide for a variety of legal sanctions for the unlawful possession and distribution of illicit drugs and alcohol. These sanctions include, but are not limited to, incarceration and monetary fines.

Federal law provides rather severe penalties for distributing or dispensing with the intent to distribute or dispense, a controlled substance and penalties of a less severe nature for simple possession of a controlled substance. The type and quantity of the drug, whether the convicted person has any prior convictions, and whether death or previous injury resulted from use of the drug in question (this, however, is not a factor in a case of simple possession) all affect the sentence. For example, if less than 50 kilograms of marijuana are involved and it is an individual's first offense (no prior convictions), then the person is subject to imprisonment of not
more than five years, a fine of $250,000, or both. If, however, 50-100 kilograms of marijuana are involved instead of less than 50, and all other factors are the same as in the preceding example, the person is subject to imprisonment of not more than 20 years or life, a fine of $1,000,000, or both. With regard to simple possession, the number of convictions makes both the minimum period of imprisonment and fines greater. Under special provisions for possession of crack, a person may be sentenced to a mandatory term of at least five years in prison and not more than 20 years, a fine of $250,000, or both.

State law provides similar penalties with regard to the simple possession, distribution, or possession with the intent to distribute a controlled dangerous substance. Simple possession of marijuana is a misdemeanor and carries a punishment of up to one year in the county jail. A second or subsequent conviction for simple possession of marijuana carries two to 10 years in the state penitentiary. Possession of marijuana with the intent to distribute is a felony and carries a punishment of up to 20 years or life, a fine of $20,000 for the first conviction. A second or subsequent conviction carries a punishment of four years to life in prison and a fine of up to $40,000. Dependent upon the quantity involved, a convicted individual could be sentenced under the Oklahoma “Trafficking in Illegal Drugs Act” which provides for much harsher penalties.

In addition, state law provides that possession of or possession with the intent to consume 3.2 beer by someone under 21 years old in a public place is a misdemeanor punishable by a fine not to exceed $100.00 or by appropriate community service not to exceed 20 hours. Possession of other alcoholic/intoxicating beverages by someone under 21 years old in a public place is a misdemeanor punishable by imprisonment in the county jail for not more than 30 days, a fine not to exceed $100.00, or both. There are also state laws concerning driving under the influence of alcohol and using a false driver’s license to obtain 3.2 beer or other alcoholic beverages. Depending upon the number of previous convictions, or gravity of the circumstances, the individual may be convicted of a felony or misdemeanor for such an offense. It is most likely that that person will also forfeit driving privileges in the event of conviction of such an offense.

There are also Stillwater laws similar to those described above. If drugs are involved, the city will, most likely, defer to the state or federal authorities because their penalties are more severe. If alcohol is involved, the person may be convicted of violating both local and state law and punished according to both laws.

Courts do not excuse individuals convicted of these offenses from a prison sentence in order to go to college or work. A conviction for such an offense is a serious blemish on an individual’s record which could prevent one from entering many careers or obtaining certain jobs.

Further information regarding these local, state and federal laws may be found in the OSU Police Department and the Student Activities Office, where copies are available to students and employees. Students and employees are encouraged to review this information. The above-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 dependence. 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. Long-term effects of alcohol abuse include damage to the liver, heart and brain, ulcers, gastritis, malnutrition, delirium tremens and cancer. Alcohol combined with other barbiturates/depressants can prove to be a deadly mixture.

Amphetamines/stimulants (speed, uppers, crank, ice, caffeine, etc.) speed up the nervous system which can cause increased heart and breathing rates, higher blood pressure, decreased appetite, headaches, blurred vision, dizziness, sleeplessness, anxiety, hallucinations, paranoia, depression, convulsions and death due to a stroke or heart failure.

Anabolic steroids seriously affect the liver, cardiovascular and reproductive systems. These can cause sterility in males and females, as well as impotency in males.

Barbiturates/depressants (downers, quaaludes, valium, etc.) slow 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. These effects 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. It 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, percodan, 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. Approximately 170,000 people in the United States die each year from smoking-related coronary heart disease. Thirty percent 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. Individuals should also consult their personal physicians about the health risks associated with alcohol and drug use.

6.01 Drug and 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 a person’s needs, there are other programs in the community or nearby that may be better suited. 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, 1-800-780-2737

National Drug Abuse Hotline, 1-800-722-6661

National Cocaine Helpline, 1-800-COCAINE

Reach-Out Hotline, 1-800-522-9054

OSU/Stillwater Resources

Employee Assistance Program (employees only), 127 Wellness Center, OSU, Stillwater, 405-744-6415

Health Resource Center (students only) 146 Student Health Center, OSU, Stillwater, 405-744-2437

Student Mental Health Clinic (students only), 002 Student Health Center, OSU, Stillwater, 405-744-7007

University Counseling Services (students only), 315 Student Union Building, OSU, Stillwater, 405-744-5458

Payne County Volunteer Program for Misdemeanants, Inc., 116 W. 8th, Stillwater, 405-372-0198

Starting Point II, 608 Highpoint Dr., Stillwater, 405-377-1517

Stillwater Medical Center/Renew Center, 1323 W. 6th, Stillwater, 405-372-1480, ext. 468

End Notes

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

2A 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.

3Cocaine, marijuana, opiates, amphetamines, and other designated substances as set forth in Section 202 of the Controlled Substances Act (21 U.S.C., Sec. 812).4

4Cocaine, 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.

5Note: 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, regardless of 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 even-handed 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.

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 Office of the Provost and Vice-President for Academic Affairs 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 Office of the Provost and Vice-President for Academic Affairs.

Any student at Oklahoma State University may file a complaint with the Office of the President regarding the English language ability of any instructional employee. The president or 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 Office of the Provost and Vice-President for Academic Affairs summarizing the complaints received and the disposition of each complaint.

The Office of the Provost and Vice-President for Academic Affairs shall prepare an annual report for submission by the Office of the President to the Oklahoma 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 Office of 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 Provost and Vice-President for Academic Affairs, 101 Whitehurst Hall.)
8. Alleged Academic Dishonesty/Misconduct

Academic Dishonesty

Academic dishonesty 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. 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 compounding 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 ensure 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 or drop/add forms, falsifying and altering trial schedules or any other academic material in order to receive undeserved credit or advantage.

Knowing Cooperation with Another Person in an Academically Dishonest Undertaking. Failure by a student to prevent misuse of his or 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 or her own work, but he or 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

The experience of the Academic Appeals Board has indicated that the standard of proof requires more than 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 insuperable evidential difficulties. A person's actions in context can provide clear and convincing evidence of his or 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:

a. 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.

b. If, after consultation with the student, the instructor of record decides to initiate disciplinary action, he or she may do one or more of the following:

1. Require the student to complete a substitute assignment or examination.
2. Award a grade of "zero" or "F" for the assignment or examination.
3. Award a reduced grade for the examination, assignment or course.
4. Award a grade of "F" for the course.
5. 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.
6. If such a recommendation is made, the unit administrator involved will write a memorandum to the Office of the Registrar requesting that the student's transcript/diploma be withheld until a decision can be made concerning the recommendation.

c. 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 adviser, (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 dishonest academic dishonesty shall have the right of due process and appeal as delineated herein, should he or she believe the instructor's action was unfair. If the student decides to challenge any disciplinary action(s) not involving a recommendation of suspension or expulsion, he or she may file an appeal with the Academic Appeals Board.

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 or 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, 315 Student Union.

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:

1. Failure to observe the rules governing the conduct of examinations through ignorance, carelessness, preoccupation, or psychological stress.
2. Failure to observe the rules governing the conduct of examinations through negligence, carelessness, preoccupation, or psychological stress.
3. Failure to observe strict requirements governing cheating in examinations.
4. Failure to observe the rules governing cheating in examinations.
5. Failure to observe the rules governing cheating in examinations.

Excessive reliance upon and borrowing of ideas and work of others in a group effort.

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 or 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 (10) 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 or 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 or she should be prepared to present corroboration in support of the claim.

**Academic Appeals Board**

The Academic Appeals Board is authorized by the Office of the President of the University to review appeals of alleged academic misconduct or dishonesty, and to decide upon the appropriateness of any 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 cases. Either party may elect not to appear; in this instance, the hearing shall be held in his or her absence. Failure to appear must be noted without prejudice;
- The right to meet with the Academic Appeals 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 adviser, colleague or friend;
- The right to call witnesses to assist in establishing the 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 adviser, (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 Academic Appeals Board as a party (either student or instructor), an 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 Office of the Provost and Vice-President for Academic Affairs, and one student selected by the Office of the Provost and Vice-President for Academic Affairs 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 Office of the Provost and Vice-President for Academic Affairs.
- 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 Office of the President from a list recommended by the Office of the Vice-President for Student Services, four faculty members appointed by the Office of 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 Office of 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 Office of 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 will be forwarded to the Office of the Director 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 Student Government Association; 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 yearbook, the Redskin;
   3. The opportunity to use the announcement service in the student newspaper, 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. 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.
   B. Membership is open only to students.
   C. Organizations especially for spouses of students, faculty and staff may seek official University registration.
   D. 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.
   2. Certain written information and documents must be filed in the Office of the Manager of Student Activities:
      A. The name of the organization;
      B. The purpose of the organization;
      C. A list of the organization’s officers and its adviser, with their current addresses and telephone numbers;
      D. A list of its charter members;
      E. A copy of its constitution and by-laws;
      F. A disclosure statement of the sources of financial support;
      G. A current “Affirmation of Compliance” statement; and
      H. A statement signed by the department head or president of an entity listed in 12.a.1.A., verifying that the purposes of the petitioning group are and continue to be consistent with those of the sponsoring entity.
   3. Eligibility for office within the student organization requires an overall grade-point average of at least 2.00 (organizations may require a higher average if they so desire) and the student must be enrolled in a full course of study (12 hours for undergraduates; 9 hours for graduates). Exceptions may be granted only by the Committee on Student Organizations.
   4. The organization must not unlawfully discriminate on the basis of race, sex, religion, national origin, or handicapped.
   5. After the required information is filed in the Student Activities Center and a subsequent meeting with one of the staff of the Office of Student Activities, the president of the organization (and normally the faculty adviser) must appear before the committee in order to justify the merits of recognizing or registering the organization.
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 proposed organization does not duplicate in specific purpose existing organizations.
   2. There is indication of sufficient student interest as evidenced by a sufficient number of charter members.
   3. The purpose and structure of the organization is in accord with these policies and the established rules and regulations of Oklahoma State University.
   4. If a group is organized for the primary purpose of individual instruction in an art or skill, if tuition is charged, and/or the instructor is compensated for services rendered, such a group will not be granted status as a student organization. Instruction may be a secondary purpose but the organization must be under the supervision and control of the officers and members of the organization as reflected by the constitution.
c. Action on application. A majority vote of the total membership of the Committee on Student Organizations is necessary to deny or grant recognized or registered status to a petitioning group. The committee’s recommendation will be presented to the SGA Senate for its action. The committee’s recommendation and the action of the SGA Senate will then be sent to the Office of the Director of the Student Union for a final decision, with a copy to the petitioning organization. If the Committee on Student Organizations and/or the Student Senate have not acted upon an organization’s application for recognition or registration within six school weeks from the time it was presented to the Office of the Manager of Student Activities, the application will be sent to the Office of the Director of the Student Union for a decision. Any subsequent appeals will be processed through the Office of the Vice-President for Student Services.

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 Office of the Director of Student Activities. Any disciplinary action taken will be reported to the Student Government Association Senate and to the Office of the Director of Student Activities. Any disciplinary action taken will be reported to the Student Government Association Senate and to the Office of the Director of Student Activities.

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 ten (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 Office of the Director of the Student Union. Any subsequent appeals will be processed through established administrative channels beginning with the Office of the Director of the Student Union.

Under extraordinary circumstances, the vice-president for student services or his or 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.

14. Advisers
Each organization must have an adviser 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 advisers 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 providing the adviser's name, address and telephone number to the Office of the Coordinator for Greek Life.

Other exceptions to this policy may be granted by the Office of the Manager of Student Activities with the concurrence of the Committee on Student Organizations. An organizational adviser 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 exempt 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 the Office of 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 average, number of hours carried by each officer;
3) name of faculty adviser;
4) time and place of regular meetings. Changes during the school year in officers and/or faculty adviser 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 Office of 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 Office 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:
1) 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 adviser.
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.

19. Recognition of Greek System Groups

The Interfraternity Council (IFC) or Panhellenic, with their staff advisers, 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 the staff advisers. The appropriate council will review the applications and then make a recommendation to the Office of the Vice-President for Student Services through the Office of 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, Residential Life
- 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 Office of 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 Student Rights and Responsibilities 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, Residential Life
- 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 scheduling, Office of the Registrar, Sectioning
- Gallagher-Iba Arena 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 the facilities utilization policies of the scheduled areas.

b. Campus University Grounds. All outdoor activities of student organizations on the OSU main campus shall be scheduled and approved through the Office of the Manager of Student Activities. The only exceptions shall be for academic (classes) and intramural sports. Location assignments shall be made with the appropriate department head, or in the case of the residence halls groups, the Residence Halls Program Office. In all cases, consideration should be given to the public safety, welfare, health, and non-interference with University academic endeavors. Each group is responsible for the preservation and the maintenance of the grounds assigned. In the event damage occurs, financial responsibility will be assumed by the group and its officers.

23. Pre-finals Week Statement

a. Policy:

1. Final examinations are scheduled at the end of each semester and are preceded by pre-finals week which shall begin seven (7) days prior to the first day of finals.

2. During pre-finals week, all normal class activities may continue; however, no assignment, test or examination accounting for more than five percent of the course grade may be given; and no activity or field trip may be scheduled that conflicts with another class, this excludes make-up and laboratory examinations, out-of-class assignments (or projects) made prior to pre-finals week, and independent study courses.

3. 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.

b. Procedure:

Any deviation from the above policy must have prior approval of the department head, the dean of the college, and the Office of the Provost and Vice-President for Academic Affairs.

24. Chaperones

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 exceptions above, the usefulness of chaperones is to be determined by the faculty-staff adviser 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. Residential Life 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. Loudspeakers

Loudspeakers 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. Permission to use such equipment shall be given as to appropriate times for use and locations prior to the activity by the Office of the Manager of Student Activities.

28. Gambling

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 the 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 Office of 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. Guidelines for advertising events at which alcoholic beverages are present are available in the Department of Student Activities.
   5. 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.
   6. 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 bulletin board or sign standard.
   7. The painting of sidewalks, buildings, etc., is not permitted.
   8. Lawn signs for campus elections will be stumped as registered in the same manner as those to be posted and must conform to the SGA Election Board posting rules. The Office of 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 signs in the residence halls must make such arrangements through the Residence Halls Program Office (Student Union 040). 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 married 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 Uni-
versity 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 Office of 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 Office of 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 Office of 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. **Housing Requirements for Undergraduate Unmarried Students**

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 or 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 Residential Life and the student program coordinator for fraternities and sororities.) Freshman students de-pledging 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 Residential Life, 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 Residential Life, 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 hall students 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
The chapter shall room or board in a rooming at aientes, and single graduate students may select 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 Office of the Vice-President for Student Services.

2. Revisions and amendments may be proposed by living-unit governments to the Office of 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 Office of 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 Office of 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 Office of the Vice-President for Student Services to the Office of the President of Oklahoma State University.

c. All decisions by the Office of 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 Office of the Registrar.

b. Official Announcements. Official announcements are published in the Official Bulletins section of The Daily 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-Iba Arena--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 forum generally open to members of the university community and others for the purpose of expression. 2

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 the Office of the University Legal Counsel, and its decision in this regard shall be final.

II. Principles and Standards

a. 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 the 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. Time, 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 Supreme Court. Accordingly, in determining whether to deny or limit expression based on its content, the University should be guided by its commitment to the educational mission of the institution.

d. Disclaimer Regarding Expression.

1. Given the wide diversity of expression that occurs at higher education institutions, the use of any University-controlled facility, area or medium for any expression shall not constitute or suggest endorsement of the content of that expression or any proponent thereof, by the Board of Regents, the University, its administration, staff, faculty, student body, or any individual member of these constituencies.

2. Presenters of expression shall assume full responsibility for any violation of law they commit while on University property.

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

a. Requests for the Use of a Scheduled University Facility or Area.

1. The extracurricular use of any scheduled university-controlled facility or area for the purpose of expression shall be preceded by a request made to an authorized designee. A request shall contain the name of the requestor and the name of the who he or she can be contacted; the proposed date, time, and location for the contemplated activity; the expected size of the audience; the topic(s) or subjects to be addressed; and any other information which may be necessary to accommodate the needs associated with the activity.

2. 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 or 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 question about whether to grant the request, he or she should consult with his or her administrative supervisor(s) and the Office of 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 Office of 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 Office of the Manager of Student Activities shall promptly notify the requestor and the authorized designee of his or 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 or 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.

4. No final arrangements or advertising shall be made for the proposed expression prior to the granting of the request for the use of the facility or area.

b. Limitations Based upon Time, Place or Manner Considerations.

1. If a request is denied or limited based on time, place or manner considerations, or for failure to submit a timely request, the requestor shall be promptly informed of such decision. A written statement of the reasons for the denial or limitation shall be provided upon request.
2. The requestor may appeal denials or limitations by filing a written statement with the chairperson of the Campus Review Committee. The statement shall set forth the reason(s) for appealing the denial or limitation. The committee shall hear all appeals and render a final decision no later than five working days from the filing of the appeal. Although the committee may, if necessary, take the full five days to render a decision, it should make every reasonable effort to reach its decision in time to allow the requestor to carry out final arrangements for the proposed expression in the event the Committee reverses the authorized designee and grants the request.

c. Denials or Limitations Based upon Content Considerations.

1. An authorized designee may recommend that a request be denied or limited on the basis of content only if it is determined, after appropriate inquiry (including consultation with the Office of the University Legal Counsel), that the proposed expression is unprotected. In determining whether to make such a recommendation, full and adequate consideration should be given to the educational mission of the University and specifically the responsibility of the University and its officials to actively encourage free and open inquiry by avoiding and resisting limitations of expression. Any such recommendation, and the reasons upon which it is based, shall be stated in writing and delivered to the office of the chairperson of the Campus Review Committee, and the Office of the President no later than six working days from the submission of the request. If the authorized designee has been granted additional time such recommendation shall be delivered no later than the last day of the extension period. The authorized designee shall also inform the requestor of the recommendation within the same time period and make arrangements for him or her to receive a copy of the written report and this policy statement.

2. Upon receipt of the recommendation of the chairperson shall convene the Campus Review Committee for the purpose of a hearing. At this hearing, the authorized designee shall have the burden of establishing that the proposed expression is unprotected. The requestor shall have the right to appear at the hearing to present oral and written arguments against the recommendation. The extent to which the authorized designee was guided by the educational mission of the University in arriving at his or her recommendation shall be a relevant and appro- priate inquiry at this hearing. The Campus Review Committee shall approve or disapprove the recommendation and report its action to the Office of the President and the requestor no later than five working days from the receipt of the recommendation. Although the Campus Review Committee may, if necessary, take the full five days to render its decision, it should make every reasonable effort to reach a decision in time to allow the requestor to carry out final arrangements for the proposed expression in the event the Office of the President ultimately decides to grant the request.

3. No later than three working days from notification by the Campus Review Committee of its decision, the Office of the President shall take one of the following actions:

   A. Disapprove the recommendation of the authorized designee and direct him or 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 Office of the President shall also inform the authorized designee, the chairperson of the Campus Review Committee, and the requestor of his or her action within this same period of time. If the Office of the 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.

e. 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, video 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 Office of the 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 Campus Review 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 Campus Review 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 Office of the President. When appropriate, the Campus Review Committee shall provide administrative assistance and the services of the University’s Office of Legal Counsel.
2. Duties. The Campus Review Committee shall convene and conduct hearings in accordance with the Procedural Standards stated in Section III. In the conduct of such hearings, the Campus Review 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 Campus Review 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 steeling 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 lawful rights of the Board of Regents, institutional officials, faculty members, staff members or students; or
   v. Other campus disorder of violent nature.

2. "Fighting 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 of Regents on December 12, 1970. In accordance with Article I of the Rules and Regulations of the Board of Regents 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 IV.

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 IV.

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 Office of the University Coordinator of Conferences located in the Student Union. Groups not sponsored by University departments or personnel, and groups not previously convened on the University campus must have approval of the Office of the President (through the Office of the Coordinator of Conferences and the Auditorium Usage and Maintenance Committee where applicable).

Any off-campus group approaching the Office of 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 a 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 disciplinary actions will be reviewed under the appropriate grievance procedures for the person accused.) Grievance procedures are available for students in the Office of the Vice-President for Student Services, Student Activity Center, and the offices of student...
academic 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 the Provost and Vice-President for 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 such 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.

c. Procedures.

1. 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.

2. This policy will be published in the Student Handbook, the Faculty Handbook, the Student Rights and Responsibilities document, and the Policy and Procedures Letters.

3. 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 (EEOC) published the Interim Guidelines on sexual harassment as an amendment to the Guidelines on Discrimination Because of Sex, 29 CFR part 1604. II, 45 FR 25024. This amendment will re-affirm the purpose and effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working/academic 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 seq.) (FR Doc. 80-34981 Filed 11-7-80, 8:45 a.m.) billing Code 6570-06-M
Federal Register/Vol. 45, No. 219/ Monday, November 10, 1980/Rules and Regulations 746676-74677

Family Rights and Privacy Act

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. Have a hearing if the outcome of their challenge is unsatisfactory.
4. Submit an explanatory statement for inclusion in their educational records if the outcome of the hearing is unsatisfactory.
5. Prevent disclosure, with certain exceptions, 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 Office of the Registrar 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 Office of 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, date(s) granted, and institution(s) granting such degree(s)
m. Dissertation or thesis title
n. Adviser and/or thesis adviser
o. Participation in officially recognized organizations, activities and sports
p. Parents' names and addresses
q. The appropriate placement office--for records pertaining to securing employment.

Equal Opportunity Policy

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Acts of 1964, Title IX of the Educational Amendments of 1972 (Higher Education Act), and the Americans with Disabilities Act of 1990, does not discriminate on the basis of race, color, national origin, sex, age, religion, handicap, or status as a veteran, in any of its policies, practices or procedures. These equal opportunity provisions include, but are not limited to, admissions, employment, financial aid and educational services.
College of Agricultural Sciences and Natural Resources

Charles B. Browning, Ph.D., Dean
Paul D. Hummer, Ph.D., Associate Dean for Academic Programs
C. Wesley Holley, Ed.D., Assistant Dean for Academic Programs
Clement R. Henderson, M.A., Director of Student Academic Services

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 be a part of the modern agricultural technology that will bring new discoveries and techniques to the world.

The College of Agricultural Sciences and Natural Resources prepares students to analyze information, explore opportunities and solve problems. Students are prepared in the science and technology of agriculture, and they also receive a solid general education in communications, humanities and social sciences. In the new agriculture, the graduate will have a rewarding career that will last as long as food is consumed and fiber is grown on this earth.

Accreditation

Agricultural Sciences and Natural Resources include broad and diverse professions and do not have a single accrediting society as do some other professions. Programs in agricultural education, forestry, and landscape architecture are accredited by their professional organizations.

In addition, each department’s program is reviewed at least once every five years by a panel of scientists and other professionals 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: agribusiness, agricultural communications, agricultural economics, agricultural education, agronomy, animal science, biochemistry, entomology, forestry, general agriculture, horticulture and landscape architecture, 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, crop science, entomology, 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, algebra, and natural science 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 high 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 Office of the Dean, 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.

Academic Advising

All students in the College have the advantage of being advised by a faculty member working in the individual student’s academic discipline. Such advisers are readily available to students and work closely with the students throughout their academic careers.

Special Academic Programs

Honors Program. The Honors Program in the College of Agricultural Sciences and Natural Resources is designed to provide outstanding students with opportunities to pursue new challenges and academic excellence. Honors courses, seminars, and special honors contracts provide for discussions and independent thought by students who have the desire and ability to explore academic subjects beyond the normal class work material. Honors awards available in the College are:

1. General Education Honors.
2. Departmental Honors.
3. The bachelor’s degree, with honors. Awards (1) and (2) may each be earned independently of the others. Award (3) is earned by satisfying the requirements of both (1) and (2). The completion of each award is noted on the student’s transcript. Students who complete all three receive the bachelor’s degree with honors diploma.
All entering freshmen who have ACT composite scores of 27 or higher are eligible to become a part of the Honors Program. Sophomores, juniors, and seniors, with minimum cumulative grade-point averages of 3.25, 3.37, and 3.50, respectively, may enroll in the Honors Program.

Additional information may be obtained from the director of the Agriculture Honors Program, 136 Agricultural Hall.

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): PHYSIC 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 Office of the Assistant Dean for Academic Programs in the College of Agricultural Sciences and Natural Resources.

Pre-veterinary Science Degree. A Bachelor of Science in Agriculture degree 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 in Agriculture and Bachelor of Landscape Architecture degrees. For the Bachelor of Science in Agriculture 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 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 Horseman’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, M.A.

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 emphasis on 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 communications and journalism program.

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, general, international agricultural marketing, marketing and business, pre-law, pre-veterinary business management, rural development and natural resources, science, with three additional options offering double majors in agricultural economics and accounting, agricultural economics and agricultural education, agricultural economics and computer science.

Agribusiness is a major at Oklahoma State University. The major in agribusiness is administered through the Department of Agricultural Economics. This major is oriented toward subject matter that prepares students for decision making in agribusiness firms.

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.

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Agribusiness is a major at Oklahoma State University. The major in agribusiness is administered through the Department of Agricultural Economics. This major is oriented toward subject matter that prepares students for decision making in agribusiness firms.

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 give 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.

Agricultural Education

Professor and Head H. Robert Terry, Ph.D.

The programs of study offered by the Department of Agricultural Education are designed to provide both comprehensive and specialized training to prepare graduates for careers in a wide range of fields of agriculture. In addition to being prepared for licensure as teachers, graduates are professionally prepared for work in cooperative extension and other federal and state programs and services, as well as international education endeavors. Graduates also may find employment as educational directors and consultants with agribusiness industrial firms and organizations. Studies may culminate in the B.S., M.Ag., M.S. or Ed.D. degrees.
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, or adult education. An attempt is made to develop individual study programs to meet needs of both international and domestic students.

The Master of Agriculture is offered to further knowledge and skills of agriculture and education in preparation for and advancement in teaching, extension, administration and other professional areas. Three options are offered in the Master of Agriculture program. Option A requires 32 approved semester credit hours of course work, including a two-credit-hour formal report. Option B requires 36 approved semester credit hours of course work, including a two-credit-hour creative component, which may involve curriculum, teaching methods, literature or some similar area. Option C requires 36 approved semester credit hours of course work, which include six hours of credit for a professional internship.

The Master of Science develops the theoretical and research foundation for further graduate studies in addition to further knowledge and skills in agriculture and education. It is designed primarily for those students interested in research who may later wish to continue their graduate studies toward a specialist or doctoral degree. A total of 30 approved credit hours of course work, which includes a six-credit-hour formal thesis following the graduate college format, is required.

The Doctor of Education program is designed to prepare graduates for careers in teacher education, supervision, administration, curriculum development and other areas of professional leadership in agriculture, agricultural extension or vocational education. Within the minimum 60 credit hour requirement, 20 credit hours must be completed in agricultural education. In addition, 20 credit hours must be completed in an area of specialization like agricultural extension, technical agriculture, educational administration, or other similar area. The additional 20 credit hours includes research design, statistics and the dissertation.

Full admission to the master's degree program requires a bachelor's degree in agricultural education, agriculture, education, or related area and a grade-point average of 2.80 or higher. For grade-point averages below 2.80, combinations of experience, references and standardized test scores can be considered. Provisional or deferred admission may also be made.

Full admission to the doctoral degree program requires a minimum of a 2.80 undergraduate grade-point average and a 3.00 grade-point average in 24 or more graduate credit hours; a composite score of 1000 or higher on the Graduate Record Examination or 48 or higher on the Miller Analogy Test; three years of successful professional experience; written evidence of ability to express thought with reasonable clarity, correctness, and precision; and three strong recommendations for graduate study. Alternative criteria may be considered by the graduate committee for those who submit ample supportive evidence of other exemplary qualifications.

Student fee waivers are available for qualifying master's degree candidates. A grant and loan program is available through the Office of Student Financial Aid. Doctoral degree candidates may qualify for teaching and research assistantships. In addition to the assistantships, doctoral candidates may qualify for fellowships and fee waivers. A grant and loan program is available through the Office of Student Financial Aid.

Agricultural Engineering

Professor and Head Billy J. Barfield, 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 teach students to design solutions to real problems of society. Students work both as individuals and in teams to solve design prob-
Agriculture

(General)

Associate Professor and Assistant Dean C. Wesley Holley, Ed.D.

The general agriculture program 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, agriculture 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.

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 student 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 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 "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.
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 feed crops 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. Concern for future food supplies creates an urgency for technological advancement in food production which cannot be ignored.

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 federal or state experiment stations or private industries; teaching and extension positions with colleges and universities; and a broad range of employment or ownership in retail businesses supplying feed, seed, grain, fertilizers, agricultural chemicals and other agricultural supplies and services.

Study for the B.S. degree, in addition to a standard agronomic academic program, provides a thorough grounding in the biological and physical sciences, and communications, with sufficient elective hours to permit flexibility.

### Agronomy

Regents Professor and Head Robert L. 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.

### Graduate Programs

The Department of Agronomy offers programs of course work and research leading to the Master of Agriculture in the emphasis area of agronomy, the Master of Science degree in agronomy, and the Doctor of Philosophy degree with majors in crop science or soil science. Programs are available in the areas of plant breeding and molecular genetics, cytogenetics, range management, forage management, weed science, crop physiology, soil morphology and genesis, soil microbiology, soil fertility and management, soil physics, soil-water management, and soil chemistry. Applicants should indicate their specific area of interest upon application.

The graduate programs of the Department of Agronomy prepare individuals for successful careers in a variety of areas, including farming and ranching, extension education, agricultural business, and plant or soil science research and teaching.

### Prerequisites

Admission to the graduate program requires a B.S. degree in agronomy 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 student's 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 5230, Research, for a professional internship.
- **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**.

Intensification. Consistency may 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 agriculture courses at the 5000 level or above (excluding thesis), and meet cer-
taint 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 degree. Graduate studies culminate in the Master of Science degree in animal science, or the Doctorate of Philosophy degree in animal 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 an undergraduate major in animal science, dairy science or poultry science, or in closely-related biological sciences or biochemistry. In addition, students with a major in dairy manufacturing, microbiology, human nutrition, food science, or food technology can qualify for the program in food science. A student enrolling in a degree program must have been accepted by an adviser prior to official admission. In all cases, the student's graduate adviser or committee may recognize specific undergraduate deficiencies and require measures to attain proficiency.

**Biochemistry**

Professor and Head James B. Blair, Ph.D.

Biochemistry, the central scientific discipline linking the chemical, physical and biological sciences, exerts a profound influence on the progress of medicine and agriculture. By applying concepts and methods of chemistry and physics to the fundamental problems of biology, biochemists have made great progress in their effort to understand the chemistry of living organisms.

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 education 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 background 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 course work, 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 undergraduates.

The Master of Science Degree.
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 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.

Entomology
Professor and Head Daniel P. Bartell, Ph.D.
Entomology, the science and study of insects and related organisms, offers unlimited opportunities for students to investigate the diversity of nature, intricate biological phenomena, and at the same time contribute to the well-being of the global ecosystem. Although insects are the primary competitors for food and fiber, they are also extremely important in biomedical research, pollination of plants, transmission of disease and are an intricate part of the food web.

A strong academic background in the physical and biological sciences is essential before specializing in subject matter areas like insect identification, biology, ecology, physiology, biochemistry, population dynamics and pest management.

Job and career possibilities for graduates are diverse and numerous. Current undergraduates are preparing for careers in veterinary medicine, medicine, law, graduate school, employment with private industry or public agencies or organizations, or developing their own businesses as consultants and entrepreneurs.

Graduate Programs
The department offers programs of study and research leading to the degrees of Master of Science and Doctor of Philosophy. Students making application must be accepted by an adviser and approved by the departmental graduate committee prior to being admitted to the Graduate College.

Each program of study will be under the direction of an advisory committee. The program will be adapted to the individual's needs but will comply with all departmental and Graduate College requirements. The thesis option for the M.S. requires a minimum of 30 credit hours while the report option has a mini-
The Department of Forestry offers a major in forestry leading to a Bachelor of Science in Agriculture degree. Course work in forest management is offered for the individual with career aspirations in the U.S. Forest Service and other federal agencies, state and local forestry organizations, forest industry and consulting. Considerable breadth exists in the forestry curriculum, affording the student and faculty adviser the opportunity to develop a specialized curriculum focused on a wide array of natural resource specialties, such as water, recreation, range or wildlife. For the student with a research career in mind, course work in basic and applied 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 Ouachita 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 work 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.
administration, horticulture business, production, teaching, extension and research.

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 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, athletic fields, 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** as a field deals with the planning design and 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 design, with supporting courses in art, business, construction, design, ecology, engineering and horticulture in a five-year professional program leading to the accredited Bachelor of Landscape Architecture (B.L.A.) 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 in order 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 a 2.50 GPA or higher in all courses required as prerequisites to the last two years of the B.L.A. 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 nursery companies, contracting companies, design and 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.

**Plant Pathology**

**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.

To qualify for graduate study in plant pathology an undergraduate student should obtain a solid background in the basic sciences, especially biology and chemistry, mathematics, 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 ongoing projects in the Oklahoma Agricultural Experiment Station, which include investigations on disease control (chemical, cultural, biological, and genetic) soil-borne diseases, virology, phytopathology, 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.
College of Arts and Sciences

High School Preparation

The College of Arts and Sciences strongly recommends that high school students have: four units of English; at least three units of mathematics; three units of laboratory science; three units of social studies including American history and world history; two units of foreign language; and one unit of arts such as music, theater, or studio art.

Scholarships

A number of undergraduate scholarships are available through the College and through the departments and schools within the College. Interested students should inquire in the Office of Student Academic Services for a list of available scholarships. Arts and Sciences students are also encouraged to apply for the variety of scholarships available through the University, and that are listed in the "Financial Aid" section of the Catalog.

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 freshman, 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 graduation certification, information about college programs and requirements, and referral of A&S students to campus support services.

The "Undecided" Student. The general education program in the College of Arts and Sciences, while providing the breadth necessary for a quality undergraduate education, also makes it possible for freshmen who enroll without having decided on a major to make satisfactory progress toward most degrees for up to four semesters. Students who initially enroll as undecided students may explore possible major fields of study with an academic counselor in the Office of Student Academic Services while completing required basic courses.

Academic Programs

Undergraduate Programs. Requirements for all degree programs and options are detailed in the book Undergraduate Programs and Requirements, available in all Oklahoma colleges and high schools. Separate sheets, stating the requirements for any particular degree, may be obtained on request from the department or college in which the degree is offered.

Bachelor of Arts (B.A.): art, economics, English, French, geography, German, history, journalism and broadcasting, mathematics, music, philosophy, political science, psychology, Russian language and literature, sociology, Spanish, speech (communication consultancy), and theater.

Bachelor of Science (B.S.): aerospace studies, biochemistry, biological sciences, botany, chemistry, computer science, economics, geography, geology, journalism and broadcasting, mathematics, medical technology,
microbiology, military science, physics, physiology, political science, psychology, sociology, speech (communication consultancy), speech pathology, statistics, wildlife and fisheries ecology and zoology.

**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 and indicate those the second degree are to be satisfied. All students wishing to complete degrees should consult with the offices of student academic services of both. Concurrent enrollment in two colleges at OSU 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 another field, 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, or from the Office of Student Academic Services. The student should, at the end of his or her senior year, ask the adviser in the second major or minor to submit the request to the department head and then to the Office of Student Academic Services in the College of Arts and Sciences.

**Graduate Programs.** Master's degrees are offered in most undergraduate subjects, with doctor's degrees available in some. (For details, see the departmental entries below or consult the "Graduate College" section in the Catalog.)

**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 that encourage the exchange of ideas through discussion and writing. Honors seniors complete the requirements of the Honors Program by undertaking a senior 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 A&S 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 A&S 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 A&S 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 cumulative grade-point average.

**Bachelor of University Studies.** 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 Provost and Vice-President for Aca-

demic Affairs. At least 45 semester hours must be completed after the plan has been approved.

**Area Studies Certificates.** 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) A&S 3603, "Areas Studies Colloquium" (three credit hours).

For further information and advisement inquire at the Center for Global Studies, 208 Life Science East.

**Ancient and Medieval, Native American, and Women's Studies.** Certificates in Ancient and Medieval Studies, Native American Studies and Women's Studies are also available. These programs require approximately the same number of credit hours required for a minor in a specific department. 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 fields of interest, and should apply for admission to teacher education as soon as possible, preferably before the end of their sophomore year.

It is 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.** Premedicine, Pre-osteopathic Medicine, Pre-dentistry, and Pre-veterinary Medicine. (See also "Pre-veterinary 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 contribute 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 up to 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 preprofessional course requirements are listed under "Pre-veterinary Medicine Curriculum" in the "College of Agricultural Sciences and Natural Resources" section of the 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) taken within the previous four years.

**Allied Health Professions.** The allied health professions for which one can prepare at Oklahoma State University include athletic training, 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 single preference for a specific undergraduate major. Admission to law school is primarily based upon a strong record achieved in a rigorous undergraduate program and a competitive score on the Law School Admission Test (LSAT). Other admission considerations include course of study and difficulty of curriculum, college activities, and applicant's motivation and personality as revealed in a letter of application.

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 that are particularly critical for success in law school.

Pre-law students are advised by the pre-law adviser in the Office of Student Academic Services until they select a particular degree program. Continued consultation with the pre-law adviser is encouraged throughout the undergraduate years.

**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. At least 40 credit hours of General Education are required for the B.S. and B.A. 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 POLSC 1013. Six credit hours of English composition is a University requirement, and this must be satisfied by ENGL 1113 or 1313 and 1213 or 1413. Students who obtain a grade of "A" or "B" in ENGL 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 General Education elective.
College Requirements. In addition to the 40 hours of general education, the college requires one credit hour of orientation, (A&S 1111), for both the B.A. and the B.S. 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 B.A., 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. College requirements define the B.A. or B.S. degree in the College of Arts and Sciences.

Foreign Language Proficiency Requirement. For the B.A. 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 10 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, completion of a 1225 course or equivalent, or completion of a second year course or above in the language. FRNCH and GRMN 3013, 3023, FRNCH 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 successful completion of 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; FLL 3500, 3503; GEOG 3753, 3763; HIST 1713, 3013, 3203, 3403, 3413, 3423, 3433, 3980, 4613; JAPAN 2115, 2123, 2223; PHIL 3943; POLSCI 3213, 3223, 3253, 3313; REL 3403, 3413, 3533, 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 (excluding courses in the major prefix) 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 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 2103, 2123, 2133, 2145, 2155.
4. 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 B.A. 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, as calculated for graduation purposes, is also required. (See "University Academic Regulations" in the Catalog.)

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 necessitated by degree requirements may be 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, and before their last semester, students should 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 in repeated courses (unless officially approved in course descriptions in the Catalog), do not count. ENGL 0123, MATH 0123, and all courses with the ATHL prefix are not applicable to a degree. Students must ascertain that grade changes for the removal of "I's" have been sent to the Office of the
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. Exemption. 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 that 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
Advising 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/Silver Wings
Arnold Air Society
Army Blades
Arts & Sciences Student Council
Association for Computing Machinery
Chinese Club
Dobro Slovo (Slavic languages)
Economics Club
English Club
French Club
Friends of the Forms (philosophy)
Gamma Theta Upsilon (geography)
Geological Society
German Club
Japanese Club
Kappa Kappa Psi (band honor society)
Mathematical Association of America
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 honor society)
Pi Sigma Alpha (political science honor society)
Political Science Club
Psi Chi (psychology honor society)
Psychology Club
Public Relations Student Society of America
Radio-Television News Directors Association
Russian Club
Scabbard & Blade
Sigma Alpha Iota (music)
Sigma Delta Chi (journalism)
Sigma Pi Sigma (physics)
Sigma Tau Delta (English honor society)
Society of Physics
Society of Professional Journalists
Sociology Club
Spanish Club
Speech Communication Organization
Speech Pathology Club
Statistics Club
Tau Beta Sigma (band honor society)
Wildlife Society
Women in Communications

Art
Associate Professor and Head Nancy B. Wilkinson, Ph.D.
The Department of Art provides courses for students interested in: (1) a strong general education 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 (B.A.) with options in studio art and art history and the Bachelor of Fine Arts (B.F.A.), a professional degree with options in studio art or graphic design. Fields of concentration are available in 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, freshman through senior.

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, and biotechnology.

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 will 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.

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 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 4236, 4246; Summer-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 facilities 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.

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, inorganic 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 take the appropriate courses 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 admissions officer. Acceptance by a permanent adviser is not a prerequisite to admission to the program.

Degree Requirements. A more detailed description of the graduate study 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, 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 planned and supervised employer organizations. It blends classroom study with practical work experience in cooperating employer organizations. It also provides the opportunity for students to graduate with a degree in cooperation with an employer. The student must pass a final oral examination covering the thesis and related material.

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 provide individuals with 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.

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 B.A., M.A. 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 M.A. 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.

**M.A. Examinations.**

During the last semester of course work but no earlier, graduate students may take Exam A. Students in TESL and technical writing students will take the exams designed specifically for those areas.

Exam A. This five-hour exam will be administered on a single day. The exam contains three essay questions in each of the 10 areas of study, from which the student will answer four questions. Exam A, therefore, presents students with 30 questions, three from each of the 10 areas. The areas of study are:

1. British literature Old English to 1660 (including Milton)
2. British literature Restoration through 19th century
3. American literature colonial through 19th century
4. Twentieth century British and American literature
5. Literary theory and criticism
6. Linguistics
7. Composition and rhetoric
8. Film
9. Technical writing
10. Teaching English as a second language (TESL)

Questions in technical writing and TESL on Exam A are general; they are not designed for technical writing and TESL students seeking the M.A., who take different exams.

**Ph.D. Examinations.**

After the appropriate amount of course work and prior to beginning the dissertation, the student must take and pass Exam B.

Exam B. Exam B will consist of two five-hour exams. The student, in consultation with the advisory committee, will select the two areas on which he or she will be examined. These two areas will be chosen from the following:

1. Early American literature
2. Nineteenth-century American literature
3. Old and Middle English literature
4. Renaissance British literature (including Milton)
5. Restoration and eighteenth century British literature
6. Nineteenth-century British literature
7. Modern British and American literature
8. Contemporary British and American literature
9. Literary theory and criticism
10. Practical poetics and fictional rhetoric
11. Film
12. Composition and rhetoric
13. Linguistics
14. Technical writing
15. Teaching English as a second language

Details on Exam A and Exam B are found in the departmental Guidelines.

**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 M.A. 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 addi-
The Master's Program In Technical Writing. 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. Admission to Teaching English as a Second 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 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 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 M.A. 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 filmcripts), 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 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 Studies certificate. Several certificates, such as Asian, Latin American, Russian and Eastern European
Studies 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 French or Spanish, is available for prospective teachers of foreign languages in elementary and secondary education.

Geography

Professor and Head Olen P. 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 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 B.A. 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, state 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
School of Geology

Professor and Head Zuhair F. Al-Shieb, Ph.D.

Geology is concerned with the processes, the history, and the characteristics of the rocks and sediments which shape the earth. Human activities, predominantly on or near the surface, have utilized rocks and products stored in rocks, mainly petroleum and metals, to contribute to the quality of life. Because the earth is dynamic—that is, the land surface is constantly changing—knowledge of earthquakes, volcanoes, plate tectonics, floods and landslides, to name a few dynamic events, is critical to minimize human suffering and economic loss. Within geology, different specialties, such as petroleum geology, groundwater geology (geohydrology), geomorphology (study of surface processes), structural geology, and paleontology (study of fossils), have developed.

Success in geology is linked to other sciences that contribute to the techniques used by geologists to understand the earth. Information acquired from basic courses in chemistry, physics, mathematics, and, to a lesser degree, statistics and computer science, is utilized by the geologist in his or her quest for new knowledge about the earth. Such broad, course work provides geologists with many career options.

Geologists are employed extensively in applied and pure research and in teaching. Applied research includes the exploration for, and development of, oil and gas fields, metallic and nonmetallic mineral deposits, and reservoirs of ground water. The geologist is well-prepared to pursue and direct environmental studies. Careers in research may be found with private employers, governmental agencies or universities. Teaching positions in geology are available at all levels, beginning with secondary education. As with most other sciences, more employment opportunities will be available to students with advanced training and a broad background. In general, careers as teachers at the college and university level and in research are open only to those with graduate training.

Graduate Programs

Prerequisites. The student should have at least 39 credit hours in geology. Additional undergraduate requirements to enter the master's degree program include: nine credit hours of chemistry, eight credit hours of physics, four credit hours of zoology or botany, 10 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 recommended, but not required for admission to the program.

The Master of Science Degree. Emphasis in the master's degree program is placed on applied geology including paleontology, environmental geology, hydrogeology, petroleum geology, and structural geology.

Each candidate must complete at least 30 semester credit hours of work 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.

Students who wish to pursue the Ph.D. degree upon completion of the M.S. have the option of entering the interdisciplinary program in environmental science administered through the Graduate College. Numerous Department of Geology faculty members currently advise students seeking the doctoral degree. Funding as a teaching or research assistant may be available to assist students seeking the Ph.D. in environmental science if the thrust of their research is related to geology.

History

Associate Professor and Head W. Roger Biles, 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 self 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

The Department of History offers programs leading to the M.A. 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 1877
United States since 1877

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 a non-United States history. (See "Fields of Study" listed under Plan I.) The 36 hours must also include at least three hours of research seminar, nine additional hours of seminar offered by the department (reading and/or research), Historical Methods (HIST 5023) and a three-hour creative component (master's research paper). The creative component requirement is satisfied by the course HIST 6120, Special Studies in History. At least six hours of the course work must be in United States history and at least six hours in non-United States history. With the approval of the student's advisory committee, as many as nine of these hours may be taken in related disciplines.

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 Oklahoma State University requirements for the M.A. 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 graduate credit hours beyond the M.A. 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
3. Two fields from the following:
   - Ancient Mediterranean world
   - Medieval Europe
   - Early modern Europe to 1789
   - Europe since 1789

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

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.

School of Journalism and Broadcasting

Professor and Director Marlan D. Nelson, Ed.D.

At Oklahoma State University, the professional areas of mass communication are grouped in the School of Journalism and Broadcasting (SJB). These areas seek to complement each other with a minimum of duplication.

A modern democratic society cannot live by its ideals if its mass media practitioners are merely competent technicians.
who worry less about what is reported to the people than how it is reported. Citizens must have accurate information about social, political and economic problems as well as knowledge of actions taken by government agencies at all levels. From village council to Supreme Court, there can be no exception from the rule that public business is the public’s business.

To speak to people through radio, television or the printed page requires a knowledge of the people to whom one wishes to speak and an understanding of the world in which they live. Therefore, the curricula of the School of Journalism and Broadcasting are designed to offer more than training in communication techniques. Three-quarters of the SJB student’s time at the University is devoted to a liberal education in the arts and sciences. At the same time, the student gains competence in a professional field through courses in the SJB.

In brief, then, the purposes of the School of Journalism and Broadcasting are:

1. To provide thorough, broadly-based professional education for the mass-media professions.
2. To encourage liberal and cultural background in the arts, literature, languages, and social, biological and physical sciences.
3. To promote scholarly research and professional performance.
4. To provide media leadership and assistance in extension and public service through high school and college educators and 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 the course Newswriting I (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 an SJB 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 routine 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 Agricultural Sciences and Natural Resources 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.

Journalism majors assist in the publishing of a campus newspaper, The Daily O’Collegian, in the newsroom of radio station KOSU, and in audio and video news programming cablecast over a local cable station. Many juniors and seniors find this work a source of revenue to assist them in the cost of their education. Advanced news-editorial students also spend one summer on an internship with a commercial newspaper or broadcasting station, and some spend the spring or fall semester on a daily newspaper. Some hold part-time jobs as campus correspondents for various publications or work for media in the Stillwater area. Part of the laboratory work in JB 2393, 2413, 3413, and 4413 is done on The Daily O’Collegian or other publications.

The journalism program is affiliated with the Oklahoma Press Association, Southwest Journalism Congress, Society of Professional Journalists, and the Association for Education in Journalism and Mass Communications.

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. Graduates of a non-mass communication discipline may enter the Master of Science program, with the stipulation that they complete, without graduate credit, foundation courses relevant to career interests.

Basic emphasis is on application of current communication theories and research methods and designs to the professional aspects of mass communication. Electives in the behavioral sciences are encouraged.

Mathematics

Associate Professor and Head J. Brian Conrey, Ph.D.

Contemporary mathematics is concerned with investigations into far-reaching extensions of such basic concepts as space and number and also with the formulation and analysis of mathematical models arising from varied fields of application. Mathematics has always had close relationships to the physical sciences and engineering. As the biological, social and management sciences have become increasingly quantitative, the mathematical sciences have moved in new directions to develop interrelationships with these subjects.

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. Firms employing large numbers of mathematicians are in the aerospace, communications, computer, defense, electronics, energy, and insurance 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, and linear and modern algebra. 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. For example, 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. The department offers two Master of Science degrees, one in mathematics and one in applied mathematics. Each degree requires 32 credit hours of graduate course work in mathematics or related subjects. Two of these hours are waived if a master's thesis is written. The applied mathematics degree requires 12 credit hours in computer science, statistics, physics, or other related fields. Each student must pass a comprehensive exam on the basic graduate courses of his or her program.
Microbiology and Molecular Genetics

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.

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 a 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 final examination covering the thesis research is given promptly after the candidate has given a public seminar on his or her research work.

Departments of Military Studies

Coordinator Smith L. Holt, Ph.D.

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 four-year scholarships may be obtained through local high school principals or advisers and the ROTC departments. Information concerning three-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 of-
ferred 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 courses. 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 nine 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.

Military Science

Professor of Military Science and Head LTC Michael C. Milam, M.B.A.

Students desiring to expand the scope of their education, while preparing for a dynamic and rewarding career as an officer in the United States Army, active duty, National Guard, or Army Reserve, choose the Army Reserve Officer Training program (ROTC) as an adjunct to their chosen field of study. With courses dealing in a wide range of subjects from leadership to tactics, taught both indoors and out, the Army ROTC program produces 8,000 second lieutenants each year.

The Army ROTC program consists of a basic course and an advanced course. Students desiring to see what the program is like may enroll in up to 10 hours of military science with no commitment to the United States Army. During this basic course, emphasis is placed upon leadership, war gaming, individual tactics and skills, rappelling, and land navigation. All lower-division ROTC courses are open to the entire University community regardless of year in school.

Students committing themselves to a commission in the United States Army are permitted to enroll in the Army ROTC advanced course upon completion of the basic course or equivalent. The advanced course consists of 12 hours of academic work taken during the junior and senior year. In addition, participation in a six-week summer camp is mandatory. The advanced course emphasizes further development of leadership skills, offensive and defensive tactics, physical conditioning, ethics, military law, professional and basic military knowledge and skills. Additionally, advanced course students are responsible for use of required military skills as they act as assistant instructors during laboratory periods, plan leadership laboratories, plan and conduct field training exercises and are responsible for coordinating and supervising departmental extracurricular activities.

All advanced course students must satisfy directed professional military education (PME) requirements prior to receiving a commission. The PME consists of two essential parts—a baccalaureate degree and at least one undergraduate course from each of the following fields of study: written communication, military history, human behavior, computer literacy, and math reasoning.

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 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 under-graduate 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 (B.A.) in music. In addition, the Bachelor of University Studies degree is also excellent preparation for music majors in another 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.
The Department of Philosophy offers a Master of Arts degree in philosophy. Under the auspices of the Department of Educational Administration and Higher Education (EAHED) and with the cooperation of the Department of Philosophy, a student can earn the degree of Doctor of Education in higher education with special emphasis in philosophy.

The Master of Arts degree will be especially valuable to persons interested in pursuing predoctoral studies in philosophy, religious studies, or some other area of the humanities; to persons who already possess an advanced degree and who wish to expand their field of professional competence; and to college graduates who wish to broaden their own educational horizons.

The degree may be earned through any one of three options: with thesis (usually eight three-credit-hour courses and a six-credit-hour thesis); with report (usually 10 three-credit-hour courses and a two-credit-hour report); and with neither a thesis nor report (usually eight three-credit-hour courses and a six-credit-hour thesis). Thus the thesis degree requires 30 hours, the report degree requires 32 hours, and the courses-only degree requires 36 hours.

Prerequisites for admission to the program are 24 semester credit hours (at least 18 at the upper-division level) in philosophy including courses in the history of ancient, medieval, and modern philosophy (PHILO 3113 and 3213 or equivalents) and a course in logic (PHILO 1313 or 4303 or equivalents).

Students may pursue work in philosophy as part of their general education, as a support to their major area of concentration, as a minor, as a major leading to a B.A. degree, as a second major or in connection with a graduate program. Philosophy majors have an excellent educational base from which to pursue careers in teaching, the ministry, law, government service and private business of many sorts. They have available to them one of the most flexible programs offered at the University, for the minimum philosophy requirements include only two lower-division introductory courses, two upper-division historical survey courses and 18 hours of additional unspecified philosophy courses numbered 3000 or above, which permit up to 34 hours of related and elective study in other areas, in addition to General Education and other college requirements. A minor or a second major in philosophy will comple-
General requirements concerning the Ed.D. in higher education are listed in the "Doctor of Education" and "Educational Administration and Higher Education" sections of the Catalog. The basic prerequisite is a significant background in philosophy (ordinarily at least 24 semester hours of upper-division and graduate-level work). Depending on the student's record, 40-60 credit hours of philosophy, excluding the dissertation, are normally required, in addition to specific EAHED courses.

Departmental acceptance is required for admission to the M.A. program and the Ed.D. program. Persons who meet the stated prerequisites for the M.A. degree are encouraged to apply directly to the Graduate College for admission. Applications will be forwarded to the department for evaluation and recommendation of admission status. Persons interested in the M.A. program but who do not meet the prerequisites should contact the head of the department prior to application. Application for admission to the Ed.D. program must be initiated through the Department of Educational Administration and Higher Education.

Students pursuing a master's or doctor's degree in another field may elect philosophy as a graduate minor. Selected courses and seminars in philosophy can broaden and complement work in such areas as economics, education, engineering, English, history, psychology, and sociology.

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 advisor. 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 PHYSC 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 William Parle, 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.

Graduate Programs

The Department of Political Science offers a program leading to the Master of Arts degree in political science. Candidates for the M.A. 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, and STAT 2013.

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 POLSC 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-Preprofessional Programs in the Health Professions."

Psychology

Associate Professor and Head Vicki Green, Ph.D.

The student pursuing a B.A. or B.S in psychology is provided with a background which can be of great value in dealing with the personal, social and vocational areas of his or her life. The course of study applies the scientific method to the study of the behavior of an individual and behavior between individuals. The understanding of such material can be directly related to functioning in a job or career.

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.)

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 first-year requirements, the student may be admitted to doctoral status in clinical psychology or experimental psychology.

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**

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 questions related to career planning. Faculty members are also available to assist and advise students.

B.A. and B.S. degrees are offered in sociology. Both B.A. 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 scientifically excavated remains of past societies (archaeology) 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 methodological, social deviance, environmental sociology, industrial and complex 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 graduate committee, chaired by the director of the graduate program, prior to official admittance, and must 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 coursework, without degree credit for such courses, as determined by the director of the graduate program and graduate 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 offers 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 I-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 individuals of all ages who exhibit speech, language, cognitive 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 he or she 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 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.
The Master of Arts degree may be achieved in accordance with any of the three plans described in the section "Master's Degree Programs" in the "Graduate College" section of the Catalog.

A limited number of teaching and technical assistantships are available to highly qualified students. Information and application forms may be obtained from the department head.

Undergraduate credentials should be referred to the department head for evaluation to assist advisement and to determine any possible deficiencies which will affect the admission status.

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 career in wildlife ecology, including preparation for graduate programs. Undergraduates majoring in wildlife and fisheries ecology may choose a degree emphasis from communications, fisheries, or 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 in biology with 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 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 the Water Quality Research Laboratory and the Cooperative Fish 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. 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.

The Doctor of Philosophy Degree. In addition to the general Graduate College requirements, students are required to show competence in either a reading
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.

Accreditation
The College of Business Administration at Oklahoma State University is fully accredited by the Accreditation Council of the American Assembly of Collegiate Schools of Business, the only recognized accrediting organization for schools of business at the university level.

High School Preparation
Although a sound high school program is adequate preparation, prospective business students will benefit from a strong background in English and mathematics. Also, course work in history and government, science, geography, computer science, foreign language and public speaking will be quite valuable.

Scholarships
Oklahoma State University has an extensive scholarship program for entering freshmen, and applications should be sent to the OSU Financial Aid Office by February 1 during one’s senior year in high school. College of Business Administration scholarships are mainly reserved for sophomores, juniors and seniors. Scholarship awards are based on academic performance, leadership and need.

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 account-
ing.
Administrative services, with majors in general business and agribusiness.
Economics, with a major in economics and an option in business economics and quantitative studies.
Finance, with a major in finance.
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 Business Administration.

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.

Humanities and fine arts: Six semester credit hours elected from two different fields identified by the University as satisfying humanities (H) credit.

Natural science and mathematics: A minimum of 10 semester credit hours with the specific number of required hours in mathematics and natural science varying with the major chosen. Specific requirements for each major are published by the University in the book Undergraduate Programs and Requirements.

Communications: English composition, six semester credit hours, and introduction to public speaking, three hours.

Pre-business core: For business students, a minimum GPA of 2.00 in the following 30-hour pre-business core is prerequisite for MGMT 3013, MSIS 3223, MKTG 3213 and FIN 3113; ENGL 1113 and 1323; ACCTG 2103 and 2203; ECON 2013 and 2023; MATH 1513; MSIS 2103; STAT 2023; and SPCH 2713. For non-business students, the University prerequisite for upper-division courses applies. (See “Academic Regulations” elsewhere in the Catalog.)

General electives: In addition the student may elect courses from any area except lower-division aerospace studies and military science and HPEL activity courses to complete lower-division requirements.

Credits earned during the freshman and sophomore years in another institution may not be substituted for junior and senior course requirements in majors in the College of Business Administration.

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 information systems, and management science and computer systems)
Personnel Association
Phi Beta Lambda (business leadership)
Toastmasters

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 objec-
The Master of Science Degree. The specific objectives of the M.S. in accounting are 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 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 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, 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 speciality 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 candidate must 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 areas: auditing, managerial accounting, financial accounting, 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.

Graduate Programs

The Doctor of Philosophy Degree. The Ph.D. in the College of Business Administration has a major in accounting emphasizing 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 areas: auditing, managerial accounting, financial accounting, 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.

Administrative Services

Professor and Head Joe W. Fowler, J.D.

The department offers undergraduate majors in general business and agribusiness.

General Business

The general business program gives students a broad, comprehensive type of business education preparing them to enter employment in a wide range of administrative positions in private business, government, or non-profit organizations. The scope of their educational experience enables these graduates to assume management positions in organizations of varying sizes and ranges of operations.

Students majoring in general business or agribusiness will take general education or foundation course work in behavioral and social sciences, communications, humanities and fine arts, natural science, mathematics, and statistics, as well as business foundation courses in accounting, business communications, business law, economics, finance, management information systems, management, and marketing.

This major, which provides for a high degree of individual student choice, includes required upper-division course work beyond the business core in each of the business disciplines as well as substantial work in business or business-related courses, selected by the student in consultation with his or her major advisor.

Agribusiness

The major in agribusiness is offered in cooperation with the Department of Agricultural Economics. Students pursuing this major may obtain a Bachelor of Science in Agriculture or Business Administration. Typically, a graduate of this program would be prepared for employment in the food industry by organizations involved in the production, processing, distribution, marketing, transportation, research, or supplying of food, food products, or input for the production or processing of food products for human or animal consumption.

The student will take regular general education course work as well as foundation courses in agriculture and business
administration. Additional upper-division course work in agricultural economics and business will be selected by the student in consultation with his or her major adviser.

Business Administration

M.B.A. Program Director Cynthia S. Gray, M.B.A.

Graduate Programs

The Master of Business Administration Degree. The Master of Business Administration program provides graduate professional education for students 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 management 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, interdepartmental 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 under-graduate 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 CBA.

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 Col-

Economics

Professor and Head Ronald L. Moomaw, 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-both national and international. It provides an excellent background for the study of law and international relations. 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 a graduate program 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 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 course work 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.

There are financial implications in virtually all organizational decisions, whether the organization is a business firm, a nonprofit organization, or a government. Thus, financial executives are of central importance to overall planning and control, and nonfinancial executives must know enough finance to work the financial implications into their areas of expertise. The increasing importance of finance for any organization has accompanied the evolution of the field of finance itself.

Finance has evolved since the early 1900s from a descriptive to an analytical discipline recognized as a genuine science. Finance builds on economic theory to focus on both sides of the organization's balance sheet, asset analysis and the optimal mix of liabilities and equity, including the implications of investor portfolio theory for the firm. Finance consists of three interrelated core areas: financial markets and institutions, investments and portfolio theory, and managerial (business) finance. Other topics interwoven within these core areas include international finance, futures and options, bank management, insurance, real estate, and personal finance. Recent issues of emphasis include deregulation of financial institutions, the implications of telecommunications on financial information and decisions, innovative methods of financing long-term investments, and the influence of inflation on interest rates.

The primary objective of the undergraduate finance curriculum is to develop a broad understanding of the financial aspects of the activities and decisions and to provide thorough training in the fundamental tools of financial analysis. Toward these ends, the study of finance is complemented with the development of elementary mathematical and statistical skills and with study in economics, accounting, and business administration. The major in finance is intended to prepare students for positions with a wide variety of organizations that require special understanding of financial analysis, financial management and financial systems.

Finance majors entering the corporate world may begin in one of several positions. A career in financial management can lead to a major executive position, including chief executive officer. The positions within managerial finance include capital budgeting analyst, daily cash manager, credit analyst, financial analyst (who works closely with accountants), and property manager.
Alternatively, finance majors may choose to enter the financial services industries. Career possibilities include: the banking industry as a loan officer, retail bank manager, or a member of the trust department; the securities industry as a stockbroker or account executive, a securities analyst, investment banker, or financial planner; and the insurance industry as an agent or underwriter.

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.

Management

The major in management is designed to prepare students for leadership careers as managers with business or nonprofit organizations. It emphasizes the study of management systems and problems. Majors are typically employed by organizations of all types and sizes as managers, management trainees or staff specialists. The field of management has much to offer those interested in leadership roles in business and public sector organizations.

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 integra-
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/management science. 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, management, and marketing. 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.

Competence in planning and executing research must be demonstrated in a dissertation. In addition, each candidate must pass a series of comprehensive qualifying examinations, both written and oral, and a separate, final oral examination on the dissertation itself. To enhance teaching skills, all Ph.D. students in residence are required to teach on a quarter- or half-time basis for at least one semester while earning the degree.

Outstanding students with master's degrees in any field of study may apply. The application for admission to the program is evaluated on the basis of (1) undergraduate and graduate grade-point averages, (2) the 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 responsi-

Marketing

Professor and Head L. Lee Manzer, Ph.D.

Marketing is an exciting field of study in which a wide variety of job opportunities exist. It is also an excellent foundation study for eventual movement to top management within an organization.

Marketing is concerned with the identification of wants and needs by consumers and the development of products, distribution channels, price and communication methods to best satisfy those wants and needs. Our economic system is dependent on the ability of organizations to match resources with needs. As such, firms become more marketing-oriented every year.

A marketing graduate will likely be involved in performance and management of many different traditional areas of decision-making-sales, advertising, logistics and marketing research. In addition, one will frequently assist in product planning, developing marketing information systems, and general management.

The effective marketing executive today must develop a perspective and capability that reflect a four-dimensional program of study: (1) a liberal education in the sciences, humanities, behavioral and social sciences, mathematics and communications; (2) an adequate knowledge of the major functional areas of business; (3) a high-level competency in marketing; and (4) study in a supportive field. Liberal education is emphasized
during the freshman and sophomore years. The study of the functional areas of business begins in the sophomore year and continues into the junior year. During the junior and senior years, the focus is on marketing. In addition to the introductory course, which provides an overview of the field of marketing, the student will take courses in consumer behavior, promotion, sales management, marketing research, channels and marketing policy. While studying marketing, one typically selects courses in fields such as management finance, statistics, advertising/public relations and other fields to support a particular career choice within the marketing field.

Graduate Programs

The Department of Marketing 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 Marketing provides intensive study in marketing. 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. The program is designed to create scholars and researchers in the field of marketing. Highly student oriented, the program focuses on training individuals in current marketing theory and research techniques. Collaboration between students and faculty is strongly encouraged.

Program Content. The student will take 15 hours of Ph.D. seminars in marketing. The student must also complete a nine-hour minor in another discipline, such as economics, management, sociology or psychology. As support for the major and minor fields of study, extensive course work (normally 18 credit hours) in the area of quantitative/research methodology is required. In addition, each student must attain graduate level competence in economic theory.

Each candidate must pass a series of comprehensive qualifying examinations, both written and oral, that address knowledge in the major and minor fields. A separate final oral examination will be held on the dissertation itself. To enhance teaching skills, all Ph.D. students who plan to teach in the United States are required to teach on a quarter- or half-time basis for at least one semester while earning the degree.

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.

Application Procedure. Outstanding undergraduate or graduate students from any field of study may apply. For those with an M.B.A., the program will 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) the 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 recommendation, (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.
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. Undergraduates 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)
Administrator (secondary school principal)
Library media specialist
School counselor (elementary and secondary)

School psychologist
School psychometrist

I. Teaching Specialties—Certification Areas
Elementary school certificate (K-8)
Elementary education
  (Middle school math)
  (Middle school science)
  (Special education)
Elementary-secondary school certificate (K-12)
Art
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
Middle school math
Middle school science
Science
Social studies
Speech/Drama
Technical education
Trade and industrial education

II. 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 and 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

The College of Education programs are accredited by the Oklahoma State Regents for Higher Education, the Oklahoma State Board of Education, the North Central Association of Colleges, the Federal Aviation Administration, the National Recreation and Park Association, and the American Association of Leisure and Recreation.

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 youth depending on the chosen teaching field.
Admission Requirements

Freshman students are admitted to the College of Education consistent with criteria published for admission to the University. For continuing enrollment in good standing, the College of Education requires a minimum of a 2.50 GPA for admission to Teacher Education, student teaching, and graduation. This standard is consistent with state requirements for students in the state of Oklahoma who complete teacher education programs and seek licensure.

Criteria for students wishing to transfer into the College of Education include a required minimum grade-point average based on the total number of hours attempted by the students according to the following scale:

<table>
<thead>
<tr>
<th>Total hours attempted</th>
<th>Minimum GPA required</th>
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</thead>
<tbody>
<tr>
<td>fewer than 36</td>
<td>1.75</td>
</tr>
<tr>
<td>36 through 54</td>
<td>1.90</td>
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<tr>
<td>55 through 73</td>
<td>2.00</td>
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<tr>
<td>74 through 90</td>
<td>2.10</td>
</tr>
<tr>
<td>91 through 108</td>
<td>2.25</td>
</tr>
<tr>
<td>over 108</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Requests from students seeking readmission after having been under probation/suspension should be submitted to the Office of Student Academic Services in the College of Education and will be reviewed by the College of Education Academic Status Review Committee prior to readmission. The recommendations of this committee will be subject to approval by the dean of the College of Education.

All student grades are reviewed at the end of each semester to determine whether appropriate academic progress is being made.

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 21st Century Scholarship
- College of Education Alumni Association Centennial Scholarship
- College of Education Special Leadership Award
- Valerie Colvin Scholarship
- Community Awareness and Creative Leadership
- Community Awareness Scholarship
- Gretchen Lynnette Cumberledge Air Traffic Control Association Scholarship
- Paul Douglas Teacher Scholarship
- Lacrisha Diane Stephens Earls Memorial Scholarship
- Education Student Council Scholarship
- Charles A. “Adam” Esslinger Outdoor Recreation Scholarship
- Future Teachers Scholarship
- Leo Galanis 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 Distinguished Graduate Fellowship Fund
- Kappa Delta Pi Scholarship
- John Leslie Lehew III Scholarship
- Locke, Wright, Foster, and Cross Graduate Scholarship
- Mable Marietta Macy-Oaks Memorial Art Scholarship
- Leon L. Munson Memorial Scholarship
- The Ninety Nines, Inc.
- Percy W. Oaks, Sr. Memorial Art Scholarship
- Oklahoma Recreation and Parks Society Scholarship
- Outstanding Freshman Aviation Education Student
- Resort & Commercial Recreation Association Scholarship
- Southwest Park & Recreation Instruction Scholarship
- Technical Education Alumni and Faculty Scholarship
- James Vandegrift Scholarship
- Amy Louise Wagner Memorial Scholarship
- Hoyt E. Walkup Scholarship

In addition to these scholarships, Oklahoma State University is allocated, on an annual basis, a large number of Oklahoma State Regents for Higher Education scholarships. These scholarships are available in teaching fields identified by the Oklahoma State Board of Education as critical shortage areas and are only available to Oklahoma residents attending or desiring to attend OSU.

Privately funded scholarships are also available. Information concerning these scholarships may be obtained through the office of the appropriate department head.

Academic Advising

Academic advisement for undergraduate students is coordinated through the Office of Student Academic Services, 108 Gundersen, in the College of Education. Students with fewer than 28 earned semester hours are advised by academic counselors in the Office of Student Academic Services. Students with 28 or more earned semester hours are assigned to a particular academic adviser in the Office of Student Services or to the faculty in the academic departments, based on the student’s declared major. Faculty academic advisers are nominated by their department heads and appointed by the dean of the College. Academic advisers may confer with their advisees on such matters as vocational counseling, course selection, academic problems, long-range professional goals, and semester by semester enrollment.

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 of nontraditional students may 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
HPEL 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, school 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. At the master’s level, students may pursue sub-area emphases in learning disabilities, emotionally disturbed, mental retardation, gifted/talented, and general special education.

Ph.D. Programs. Doctoral level emphasis in special education is available through the Ph.D. in applied behavioral studies. Graduates of this program pursue careers in university teaching and in the administration of special education programs in public and private settings.

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, 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. 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 and practica requirements for licensure as licensed professional counselors in Oklahoma. Applications for all M.S. programs are due and will be reviewed March 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 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 two emphases: general educational psychology or instructional systems.

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.

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 competencies in educational psychology and will also complete course work in teaching and research in educational psychology.

The teaching and research in educational psychology prepares 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, educational psychology, human development, and research and evaluation. This program is available through the M.S. in applied behavioral studies.

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 adjunct field that provides course work 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.

Aviation and Space Education

Professor and Head Kenneth E. Wiggins, Ed.D.

Aviation Education

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. The aviation sciences program is also offered in Tulsa through the University Center at Tulsa (UCT).

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. Flight training for the University Center at Tulsa is administered by Oklahoma State University at the Hardesty Flight Center, Tulsa International Airport. 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 manufacturers, the Federal Aviation Administration, or air carriers.

The technical services management option builds on an individual's technical development with avionics and aircraft manufacturers, the Federal Aviation Administration, or air carriers. 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

Professor and Head Leah Engelhardt, Ph.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 in Elementary Education degree 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 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.
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; or, (2) 3.80 for all average of at least (1) 3.00 for all undergraduate course work; and, (2) 3.80 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 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 and under "Master's Degree" of the "Graduate College" section of the Catalog.

The Specialist in Education Degree. A student may earn the degree of Doctor of Education (Ed.D.) 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 curriculum/instruction, early childhood education, language arts, mathematics, science and social studies. Students planning to emphasize secondary education must incorporate graduate course work from an academic discipline.

The Doctor of Education degree requires a minimum of 60 semester hours beyond the master's degree.

Unqualified admission to the doctoral 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 "Specialist in Education" in the "Graduate College" section of the Catalog.

The Doctor of Education Degree. A student may earn the degree of Doctor of Education (Ed.D.) 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 curriculum/instruction, early childhood education, language arts, mathematics, science and social studies. Students planning to emphasize secondary education must incorporate graduate course work from an academic discipline.

The Doctor of Education degree requires a minimum of 60 semester hours beyond the master's degree.

Unqualified admission to the doctoral 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.

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 stu-

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 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.

**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. 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.

**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.S.) in educational administration or in higher education. The degree is designed for teachers and administrators in public schools, colleges and universities. 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.

Further information about this degree may be found under "Doctor of Education" in the "Graduate College" section of the Catalog.

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**School of Health, Physical Education and Leisure**

**Professor and Director George H. Oberle, P.E.D.**

**Associate Professor and Coordinator, Graduate Programs, Bert H. Jacobson, Ed.D.**

The School of Health, Physical Education and Leisure (HPEL) is a multi-faceted organizational unit encompassing undergraduate and graduate academic programs in health, physical education and leisure, lifetime sports instruction and outreach programs. The School of HPEL seeks to fulfill the traditional functions of teaching, research, extension and public service which are consistent with Oklahoma State University. The mission of the School of HPEL is to promote excellence in human development and environmental consciousness to enhance the knowledge, attitudes and behaviors of individuals through increased responsibility for social, physical, mental, emotional and environmental health. This mission is accomplished through programs and services via teaching, research and scholarly activity, university and professional services and extension programs.

**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.

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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.

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.

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 advanced 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 average 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 with a specialization 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, or leisure is offered. Based on an analysis of the student's previous 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 or leisure.

Admission Requirements. Depending upon the area of emphasis, a bachelor's degree in physical education, health, 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 accredited undergraduate program; (2) MAT score of 40 or GRE score of 1450; and (3) three letters of recommendation. Applicants not meeting these requirements are subject to review by the Graduate Screening Committee.

Degree Requirements. A non-thesis minimum of 32 hours or 30 hours with six hours for a thesis must be taken, including 21 hours of courses at the 5000 level and 15 hours in the School.

The Master of Science degree is not a teacher certification program. Undergraduate requirements for certification must be satisfied before the student is eligible for certification from the Oklahoma State Department of Education.

The health program offers a master's degree with specialization in health promotion, while the physical education program offers a master's degree with specialization in administration, pedagogy, adapted physical education or exercise science. The program in leisure has four areas of specialization: administration and management, outdoor recreation, therapeutic recreation and campus recreation.
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 is required. The applicant should have an undergraduate GPA of at least 3.00 and a graduate GPA of at least 3.70. Students are required to take the Miller Analogies Test or Graduate Record Examination.

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 12 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 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, OSU, Stillwater, OK 74078.

School of Occupational and Adult Education

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 nontraditional 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, 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 programs 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. 

Occupational and Adult Education

Graduate Programs

The M.S., Ed.S., and Ed.D. programs in occupational and adult education are intended for individuals who wish to prepare for broader educational roles relating to all vocational education disciplines.
Graduate Programs

The technical education curriculum for the M.S. degree is offered for persons who are preparing for employment in 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 vocations 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, blacksmithing, cabinetmaking, carpentry, commercial art, cosmetology, diesel engines, drafting, electricity, electronics, individualized cooperative education, machine shop, photography, printing, plumbing, sheet metal, small engines, tailoring, upholstery, 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.

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.

Teacher Education Programs

Officers of the Teacher Education Council

Kenneth L. King, Director of Teacher Education

Ray Sanders, Chair of Teacher Education Faculty

Faculty 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, 101 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 pro-
grams 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. Teacher Education programs at Oklahoma State University have the approval of the Oklahoma State Board of Education.

Undergraduate Teacher Education programs are offered in the College of Education as well as in the colleges of Agricultural Sciences and Natural Resources, 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.

Students classified by the Graduate College as "special" or "provisionally admitted" who are pursuing teacher certification must be admitted to the Teacher Education program. Information regarding admission requirements may be obtained from the Office of Teacher Education, 101 Gundersen.

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, 101 Gundersen.

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; 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; 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 Intent to Pursue a Program in Teacher Education. This form can be obtained in the Office of Student Academic Services, 108 Gundersens, for College of Education students. Students wishing to enter teacher education programs within the College of Education must meet the required minimum grade-point average based on the total number of hours attempted. (See "College of Education Admission Requirements.") If the student is enrolled in the Teacher Education program in the college of Agricultural Sciences and Natural Resources, Arts and Sciences, or Home Economics, the student should check with the office of the department head for further information. In addition to completing the Declaration of Intent to Pursue a Program in Teacher Education 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 available from the University Testing and Evaluation Service, 109 North Murray and the Office of Teacher Education, 101 Gundersens.

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.

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 and in the Office of Teacher Education, 101 Gundersen. 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 PPST until passing scores in all areas are obtained. Students whose score on any section of the PPST does not meet the established scores will be qualified to apply for admission to teaching education under the OSRHE current alternative plan.

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. The student must have completed an approved Teacher Education program and hold a valid Oklahoma license or Provisional, Standard, or Professional Certificate; or

2. Students in a master's program must (a) satisfy the departmental requirements for unqualified admission to the master's degree program; (b) have a minimum overall GPA of at least 2.50; (c) pass the Preprofessional Skills Test or meet published alternatives; (d) complete the interview for Teacher Education; and (e) 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"; or

3. 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 the OSRHE current alternative plan; (c) complete the interview for 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 repeated, course will be ignored. Grades of "I," "NP," "P," "R," "W," "WP," 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 field relations and through the Office of Teacher Education. Students are notified of this meeting through consultation with advisors, the "Official Bulletins" section of The Daily Collegian and unqualified admission to the Teacher Education program.

Criteria for student teaching placement for all Teacher Education students are:

1. Must have achieved full admission to a Teacher Education program;
2. Must have a current 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.
Required Grades in Student Teaching.
A student must receive grades of “B” or better in all sections of student teaching in order to be recommended for a teaching license. Upon recommendation of the Entry-year Assistance Committee the student is eligible for recommendation for a standard certificate. A student who receives a grade of “C” in any section of student teaching will be recommended for provisional licensure. Upon recommendation for certification by the Entry-year Assistance Committee the student is eligible for recommendation for the standard certificate. A student assigned a 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-Area/Out-of-State Placements
A student requesting an out-of-area/out-of-state placement due to extreme, extenuating circumstances must have the approval of the coordinator of field relations 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 pursue an appeal through the Admission and Retention Committee. Information pertaining to the appeals process is available through the Office of Teacher Education, 101 Gundersen.

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, 101 Gundersen. 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). Applicants recommended by Oklahoma State University for a license, certificate or endorsement must have achieved grades of “B” or better in all sections of student teaching. A grade of “C” in any section of student teaching will result in a recommendation for provisional licensure. 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. 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 satisfactorily complete the second year as an entry-year teacher, the Entry-year Assistance Committee will recommend noncertification for the candidate.
The professionals and semi-professionals who will be largely responsible for the shape of the world in the year 2000 and beyond are now in higher education. The power they will exercise makes an exciting prospect and presents a sobering responsibility. Many of the easy problems that are usually solved first are now a part of history. Many difficult problems remain. The need for well-qualified and well-trained people is obvious; one will be embarking on a lifetime of challenge if he or she decides to prepare for a career in engineering, engineering technology or architecture while at Oklahoma State University.

Most of the work of engineers, technologists and architects is concerned with the conception, design and fabrication of devices and installations, and processes and systems that serve human needs. This work provides ample opportunity to express creativity. It requires an ability to make decisions. Engineers and architects, working side by side and supported by technologists, constitute one of the most powerful agents for change in our society. New ways are found to control the environment, to utilize the resources and forces of nature and to increase productivity of needed goods and services, in short, to improve the quality of life for all.

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.

**Accreditation**

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

**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 (pre-medical option), Civil Engineering, Electrical Engineering (computer engineering option), General Engineering, Industrial Engineering and Management, Mechanical Engineering (aerospace, petroleum and premedical options).

**Master of Agricultural Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Environmental**

**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.

School of Architecture:
- Bachelor of Architecture, Bachelor of Architectural Engineering, Master of Architecture and Master of Architectural Engineering.

Division of Engineering Technology:
- Bachelor of Science in Engineering Technology with programs in construction management technology, electronics technology, fire protection and safety technology, general technology, manufacturing technology, mechanical design technology, and mechanical power technology.

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, students should 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.

**Admission Requirements**
Admission requirements for the college are the same as for the University with the exceptions noted below and in the “Schools of Engineering” section of the Catalog. Students must first be admitted to the pre-engineering, pre-architecture or technology program and complete certain minimum requirements as outlined under “Lower-division Requirements.”

Transfer students will not be admitted if, in their most recent semester of transfer credit, their performance would have placed them on probation if enrolled at Oklahoma State University.

**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. If one or more courses meeting the Humanities or Social Science requirements are selected from those meeting the University requirement for an International Dimension, the total number of hours for the degree can be held to a minimum.

**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.

Scholarship application forms for transfer students may be obtained by contacting the Office of Student Academic Services, CEAT, 101 Engineering North, OSU, Stillwater, OK 74078.

Freshman scholarship applications must be completed and on file by January 15 preceding the academic year for which the student expects to receive the scholarship in order to receive full consideration. The OSU Freshman Fee Waiver and Scholarship form should be submitted to the Office of University Scholarships.

Continuing 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.

**Retention Criteria**
The following terms are subject to approval by the Oklahoma State Regents for Higher Education and are in addition to the OSU criteria in the “University Academic Regulations” section of the Catalog.

**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 both full-time and part-time students, and
2. for full-time students, at least 24 grade points (12 in a summer term). Only courses which may be counted toward the degree will be considered in meeting the above requirements. For purposes of this criteria, a full-time student will be defined as one who is enrolled in 12 or more hours at the beginning of the academic term (six hours in the summer).

**Probation and Suspension.**
1. Students will be placed on probation at the end of any academic term in which they fail below the criteria for satisfactory progress toward their degree objectives as stated above.
2. Probation conditions are set on an individual basis but require as a minimum that students make satisfactory progress toward their degree as defined above.
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.
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 e and base 10, and the trigonometric and inverse trigonometric functions.

Special Academic Programs
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. A placement seminar is held early each fall.

Tutoring Program. A tutoring program is provided to assist students in their understanding of fundamental courses in mathematics, physics and chemistry.

Departmental Clubs and Honor Societies
Alpha Epsilon (agricultural engineering honor society)
Alpha Pi Mu (honor society for juniors & seniors in industrial engineering and management)
Amateur Radio Club
American Indian Science and Engineering Society
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 Safety Engineers
CEAT Student Council
Chi Epsilon (civil, architectural or general engineering honor society)

Construction Management Society
Construction Specifications Institute
Engineerettes (spouses of students in CEAT)
CEAT Student Council
Eta Kappa Nu (electrical engineering honor society)
Fire Protection Society
Fluid Power Society
Institute of Electrical & Electronics Engineers
Institute of Industrial Engineers
Omega Chi Epsilon (chemical engineering honor society)
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 Hispanic Engineers
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 Eta Epsilon (technology students)

Schools of Engineering
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.

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.

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 chair of the board. The chair, 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. These procedures do not supersede those in the "University Academic Regulations" in the Catalog.

Chi Epsilon (civil, architectural or general engineering honor society)
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 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 disciplines.

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 similar 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.

Bachelor of Science. The Bachelor's programs prepare students to either practice the engineering profession in industry or government or to enter graduate study in engineering or other disciplines. Each program includes 60 or more semester credit hours of pre-engineering course work and the remaining program requirements in one of the professional schools.

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 the 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, and a 32-semester-credit-hour study program in graduate-professional status meeting Graduate College requirements for a Plan III master's degree.

The 32 semester hours in graduate-professional status combine with 68 or more semester 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

Freshman and resident transfer students are 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.

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.

For these purposes, all GPAs are calculated using only the last grade in any repeated course.

Nonresident transfer students not directly admissible to pre-engineering but 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.

Students transferring to pre-engineering from another major at OSU or University Academic Services must meet the same requirements for admission as a student transferring from another college or university.

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.

Admission to the Professional Schools. In each school of engineering the lower-division course work is devoted to qualifying the student for admission to the professional school. 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.

A student is eligible to apply for admission to one of the professional schools of engineering when the classes 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 specified 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. Passage of the University English Essay Proficiency Examination.

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. Individual schools may impose higher standards for admission. For example, for the School of Electrical and Computer Engineering, the grade-point averages in 1. and 2. above are currently increased to 3.00 and the average in 3. is 2.70.

Consult the Office of Student Academic Services for these details.

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 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, mathematics, 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

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 exceeds 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. Humanities and Social Science courses must be selected from the CEAT approved list in order to assure compliance with accreditation requirements.

**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 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 or more 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, 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 5 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 scholars 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 3.25 or higher 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) submission of a formal application for the honors degree within two weeks after the beginning of the final semester.

**Academic Advising**

The College's Office of Student Academic Services provides advisement for all pre-engineering students. When a student has gained admission to a professional school of engineering, he or she will be assigned a faculty adviser.

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.
Agricultural Engineering

Professor and Head Billy J. Barfield, 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 system 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 curriculumb 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 advisor 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.

Chemical Engineering

Amoco Chair and Head Robert L. Robinson, Jr., Ph.D., P.E.

Chemical engineers apply 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 engineers often find themselves defining a problem or product, developing a process to do what is needed, and then designing the plant to carry out the process. After the plant is started, chemical engineers will commonly manage operations, oversee equipment maintenance, and supervise control of product quality. They troubleshoot the problems which hinder smooth operations, and they plan for future expansions or improvements. Their training and knowledge make them well qualified to market the products from a plant, the processing equipment for it, or even the complete plant itself.

The varied background and experience of chemical engineers make them ideally suited for advancement into top-level managerial and executive positions.

The academic preparation of chemical engineers for such a broad variety of careers must be based on a strong foundation in the basic sciences and mathematics. Computer competency is a
must. Fundamental professional courses follow to provide the student an opportunity to apply the basic sciences to chemical engineering problems. Engineering design and laboratory courses integrate the more fundamental studies and demonstrate that engineering is a process of assembling knowledge from many fields and sources into a practical answer to a real problem. At the bachelor's level, two degree options are offered: (1) the regular course option prepares a graduate for a wide range of employment opportunities; and (2) the premedical option is for those who wish preparation for medical school or seek employment in medically-related professions. All of these options prepare a student for success in M.S. or Ph.D. study at OSU or at other universities.

Upon completing the B.S. studies the qualified student is encouraged to continue in the master's program.

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 of 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.

Civil Engineering

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, and airports and terminals, structures of every kind including buildings, bridges, towers, industrial plants, tunnels and subway systems, schemes for the control of water and air pollution, and many other works of general benefit to society.

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, engineer-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 similitude, (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.

Electrical and Computer Engineering

Professor and Head James Baker, Ph.D.

Electrical Engineering

The electrical engineering program provides the fundamentals for a career in many related areas. All around is seen the astounding impact of microelectronics on consumer products such as calculators, electronic watches, TV games, home computers and microwave ovens, but the future impact will be even more astounding on worldwide satellite communications, energy conservation, automation of industrial plants, oil and gas exploration, electrical power generation and distribution, to mention a few.

The undergraduate electrical and computer engineering program at Oklahoma State University prepares each graduate for a life-long professional career. During the first two years, students complete a carefully designed pre-engineering program consisting of mathematics, physical sciences, engineering sciences and selected courses in the humanities and social sciences. During the final two years of the program, each student concentrates his or her study on electrical and computer engineering subjects and can elect from the following areas: computer engineering, electronics, energy systems, communications, control systems, electromagnetics, solid state devices, optics, and network theory/signal processing.

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, communications systems, power systems and process control systems. Students in computer engineering will work directly with microprocessors, microcomputers, 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 additional advanced course work and on-campus creative activities.

The Doctor of Philosophy degree is designed to prepare the student for high-level research and 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 with high scholastic performance from an electrical engineering curriculum accredited by the Accreditation Board for Engineering and Technology 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 the School of Electrical and Computer 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

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.

General engineering embodies the fundamentals of four major engineering disciplines (civil, electrical, industrial and mechanical), to develop breadth and competence in basic science and engineering fundamentals regardless of the context in which these concepts are applied.

As a professional with an interdisciplinary background, the general engineer is prepared to analyze, design and synthesize solutions in a technically expedient manner, while considering the economics of design or process, as well as the humanistic requirements for utilization and operation. The student may choose to follow a professional practice within one of the four disciplines; he or she may look to a career in research and development, particularly of an interdisciplinary nature; he or she may choose the avenues of development in professional consultation or individual proprietorship; or finally, because of his or her background and
The option of limiting studies to one of the engineering disciplines is pursued with electrical, industrial and mechanical degrees. The Doctor of Philosophy degree is characterized by a higher degree of technical specialization. The Master of Science degree is a research-oriented degree designed to prepare the candidate for a professional level in any or all of the disciplines covered by the curriculum, each student is encouraged to plan a program leading to a master's degree, which will assure a more competitive level of competence in all four of the engineering disciplines.

**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 admis-

**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, 11 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 of 32 semester credit hours designed to produce the breadth expected of a general engineer.

The Doctor of Philosophy degree in general engineering requires the completion of not 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: six to nine 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, that will include representation from the departments in which course work is taken.

**Industrial Engineering and Management**

Professor and Head Timothy J. Greene, Ph.D.

Industrial engineering and management is one of the five major engineering disciplines and is concerned with designing, analyzing and operating a wide range of systems that include people, materials, money and equipment. Industrial engineering is the only engineering discipline which is specifically concerned with the role of the human being in the processes by which goods and services are produced and as such is often called the "people-oriented engineering discipline."

Productivity and effective utilization of resources, including energy and hazardous materials management, are principal concerns of practicing industrial engineers. The industrial engineer may follow a career in almost any type of enterprise; manufacturing companies, service organizations such as consulting firms, insurance companies, banks and hospitals, and government agencies, including city, state and federal government functions. The industrial engineer's position in an organization is usually as a management adviser in contact with every phase of the organization. Because of the breadth of his or her background, the industrial
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, manufacturing 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, mathematics, 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 off-shore 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 people to the moon and continues to lead in the expansion of 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 3M, General Dynamics, Schlumberger, Seagate, Hilti, Mercury Marine, Purolator, Moore Business Forms, and Mobil. Students may also help aggressive, smaller firms that may need assistance with the development of new products. These industrial firms also are representative of those hundreds of firms that employ mechanical engineers with the aerospace option.

The student designs, with the guidance of an adviser, an individualized program of study consistent with his or her interests and career plans. Some students terminate their studies with a bachelor's degree, while others receive one of several graduate degrees.

**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, system 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.")

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 (NCARB).

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.

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.

Most states require that an individual intending to become an architect hold an accredited degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board: (1) the Bachelor of Architecture, which requires a minimum of five years of study, and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor’s degree or two years following a related preprofessional bachelor’s degree. These professional degrees are structured to educate those who aspire to registration/licensure as architects.

The four-year, preprofessional degree, where offered, is not accredited by NAAB. The preprofessional degree is useful for those wishing a foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment options in architecturally related areas.

Architectural Engineering

The architectural engineering program focuses on the creative and analytical
Admission criteria are subject to annual review for admission to the upper division. Architecture. Upon completion of these two years, who satisfy the University admission requirements for 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 (pre-architecture). 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. As a minimum, 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 higher. Furthermore, first preference will be given to students who have completed ARCH 2024 prior to admission.

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.

General Education. Opportunities to satisfy General Education requirements with required courses in the architecture curriculum include American Urban History (HIST 4503), used to meet requirements in Social and Behavioral Sciences. At least 12 semester hours of basic science and mathematics can be counted toward General Education requirements, and required upper-division course work in History and Theory of Architecture can be used for General Education credit.

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 are spent in France under the direct supervision and instruction of faculty from OSU. 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 homes, 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 fully-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.


**Division of Engineering Technology**

**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 the 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 socioeconomic 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-contacts 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, estimator, scheduler, project engineer 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.
- Communication-English composition, and written and oral technical communication.
- **Social sciences and humanities**—history, government, religion, literature, art, music.
- Electives—controlled and general.

**High School Preparation and Counseling**

At least two semesters of high school algebra and a course in plane geometry are recommended for entering students. One year of high school credit in physics and chemistry is desirable.

Those less intrigued with theoretical concepts but who have the interest and aptitude toward applications are likely engineering technology majors. These students particularly appreciate the engagement of technical specialty courses beginning with the first semester and continuing throughout the course of study. The relevance of the technical science and related technical courses adds further satisfaction.

**Transfer Students**

An important, contemporary educational development is the "two-plus-two" bachelor’s program. Those completing an associate degree in technology-oriented curricula at other institutions are generally admissible to the junior year with a minimum loss of academic time. The "two-plus-two" concept provides the attractive feature of two occupational-entry levels-technician or technologist.

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.

**Co-op Program**

The College of Engineering, Architecture and Technology offers an experience-based program, Cooperative Education (Co-op). Co-op allows 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, 101A Engineering North.

**Curricula**

**Bachelor of Science in Engineering Technology Degree Programs**

- Construction Management
- Electronics
- Fire Protection and Safety
- General Manufacturing
- Mechanical Design
- Mechanical Power

The Bachelor of Science in Engineering Technology degree credit hour requirements vary from 126 to 129 credit hours.

**Construction Management Technology**

**Associate Professor and Head Charles A. Rich, 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 them with a knowledge of 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 "heavy" option of construction management which provides them with a knowledge of highways, soils, foundations and other course work for a career in the heavy and industrial construction industry.

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 managers, 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 diverse areas of electronics and computers.

The work of the electronics graduate may range from assisting in the design and development of new equipment in the laboratory, 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 in Engineering Technology degree 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 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 in Engineering Technology degree with an electronics major, and a computer option. 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.

Graduates will have the opportunity to work for many different kinds of industrial concerns. Computer manufacturers, as well as companies that are incorporating computers into their product will be interested in employing the graduates. Others may choose to seek employment in computer sales or software development.

Fire Protection and Safety Technology

Professor and Interim Head
Marvin D. Smith, Ph.D., P.E.

Fire protection and safety technology is designed to provide a bachelor's degree program that will prepare men and women for employment as engineering technologists in more than one specific area. Normally, there are two groups of students who enroll in this program: those who have an associate degree in one of the traditional technology specialties, but desire more diversification than continuing in the same specialty; and those who have an associate degree from another institution in a technical specialty not offered at Oklahoma State University.

Each student who completes the program must show proficiency in the following areas by completing appropriate courses: technical graphics, machine accidents. The curriculum is further designed to present alternatives for elimination of hazards or reduction of loss potential once problem areas have been identified. With respect to fire, reducing the loss potential might involve designing buildings with special emphasis on life safety or fire resistivity or specifying automatic detection or extinguishing systems. When considering safety, reducing accidents may require special protective equipment or clothing or even redesign of machinery or processes. Reducing losses caused by environmental problems may require, for example, sampling air for contaminants such as asbestos, toxic chemicals or evaluating noise levels. Application of ventilation systems or redesign of lighting systems may be necessary.

Handling and disposal of hazardous chemicals as well as current safety legislation affecting the industrial community and its impact upon the environment have also become essential parts of the curriculum.

The graduates of the program have been consistently and actively recruited by the major businesses and industries of the United States. The general loss control emphasis of the curriculum continues to make OSU graduates widely sought after by industries working toward reducing fire and safety losses. Since there are only a few academic institutions in the world offering a bachelor's degree in fire protection and safety, the employer competition for OSU graduates has boosted salary levels to a point that they compare favorably with any career field. Graduates have also shown a tendency toward rapid advancement into managerial positions.

General Technology

Professor and Head
James E. Bose, Ph.D., P.E.

The general technology curriculum is designed to provide a bachelor's degree program that will prepare men and women for employment as engineering technologists in more than one specific area. Normally, there are two groups of students who enroll in this program: those who have an associate degree in one of the traditional technology specialties, but desire more diversification than continuing in the same specialty; and those who have an associate degree from another institution in a technical specialty not offered at Oklahoma State University.

Each student who completes the program must show proficiency in the following areas by completing appropriate courses: technical graphics, machine operations, technical writing, customer service and sales.
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 curriculum provides the Bachelor of Science in Engineering Technology with a major in manufacturing technology. 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 Technology

Associate Professor and Head
Gerald R. McClain, M.S., CMFgT.

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.

The curriculum has been carefully constructed to provide a realistic progression from the basic or elementary principles, to advanced or more sophisticated techniques. The curriculum has two emphases available. The graphics emphasis requires the courses that would best prepare a graduate to work as a mechanical designer, tool designer, or product designer. The broad emphasis requires greater breadth and allows more flexibility to prepare for the broader fields of mechanical technology, such as, test, evaluation, operation, liaison or sales. Companies utilizing the talents of designers are diversified in their products, as well as geographical location, thus providing a variety of choices in respect to both type of work and place of residence. In addition to ABET accreditation, this technology program is certified at the Engineering Designer level by the American Institute for Design and Drafting (AID).

Mechanical Power Technology

Professor and Head Marvin D. Smith, Ph.D., P.E.

The mechanical power program in the School of 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.

A graduate of this program will be thoroughly familiar with the scientific principles and the equipment associated with the generation, transmission and utilization of mechanical power.

Preparation for specific areas of industry can be accomplished by selecting courses which emphasize a given area, such as power generation, fluid power, air conditioning and heating, and petroleum.
College of Human Environmental Sciences

Patricia K. Knaub, Ph.D., Dean
Lynda Harriman, Ph.D., Associate Dean for Cooperative Extension
Margaret J. Weber, Ph.D., Associate Dean for Research and Graduate Studies
Debra C. Engle, M.S., Director for University Extension and Development

On May 22, 1992, the College of Home Economics was renamed the College of Human Environmental Sciences. Since this catalog was ready to go to press, it was not possible to change “Home Economics” to “Human Environmental Sciences” in all areas of the Catalog. Please excuse any inconsistencies in the text and realize that “Human Environmental Sciences” will replace “Home Economics” in future publications. Changes in courses require approval of the Oklahoma State Regents for Higher Education, and will be forwarded for their approval within the coming year.

The College’s administrative and departmental structure will remain unchanged. This name change is based on the current mission of the College and a change in focus of the curricular programs that has occurred over the last several years. Programs are science-based areas of professional study with a focus on human beings within specific environmental contexts.

The College of Human Environmental Sciences offers nationally accredited programs which focus on professional preparation while emphasizing the importance of a liberal education in the arts, humanities and sciences. The College is composed of three departments, Design, Housing and Merchandising, Family Relations and Child Development, and Nutritional Sciences, and the School of Hotel and Restaurant Administration. Each science-based program deals with human beings in their environmental context with particular reference to the interaction between those human beings and their social, physical, psychological, economic, political or esthetic environments. The preparation received allows graduates to pursue professional careers in business, health, communications, education, extension, international service, research, social welfare, and a variety of agencies, organizations and institutions. Students interested in law, medicine or dentistry may enroll in pre-professional programs of pre-law, premedicine or pre-dentistry.

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 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 to challenge the academically-talented student enrolled 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.

Scholarships
A number of scholarships are awarded each year to students enrolled in the College. Over $100,000 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 profession.

A minor may be pursued in each of the departments within the College, and in the School of Hotel and Restaurant Administration.

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. The student is encouraged to maintain a close relationship with the adviser throughout the college career and to visit the adviser at times other than enrollment when only brief meetings may be possible.

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.

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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; and, Nutritional Sciences.

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 through the College in conjunction with the departments in the College of Human Environmental Sciences. 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 Nutritional Sciences 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 the 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 Nutritional Sciences in cooperation with other University graduate programs.

Departmental Clubs and Honor Societies
Apparel, Merchandising, Design Association
Club Managers Association of America
Dean's Speakers Bureau
Family Relations and Child Development Club
Graduate Student Home Economics Association
Home Economics Education and Community Services Club
Home Economics Freshman Council
Home Economics Student Council
Hotel and Restaurant Society Club
Kappa Omicron Nu (scholarship and leadership honor society)
Nutritional Sciences Club
Oklahoma Council on Consumer Interest Club
Phi Upsilon Omicron (scholarship and leadership honor society)
Student American Society of Interior Design Club

Design, Housing and Merchandising
Professor and Head Grovalynn Sister, Ed.D.

The mission of the Department of Design, Housing and Merchandising is to provide superior instruction, research and extension programs in design, housing and merchandising that focus on the individual-environment interaction, that are globally oriented, scientifically based and that enhance the quality of life in a socially responsible manner. Three undergraduate options are available: interior design, apparel merchandising and apparel design.

Students in interior design are preparing for careers as professionals who assist families and businesses in planning interior spaces and solving problems relative to the functionality and quality of interior living and work space. Course work includes fundamental design, design analysis, space planning and programming, design of interior space, and related aspects of environmental design. Career opportunities include professional practice in interior and architectural firms, historic restoration and preservation, product design and sales, and facility management. The Foundation for Interior Design Education Research (FIDER) has accredited the undergraduate interior design program.

Students in apparel merchandising are preparing for careers in buying, selling, promoting or coordinating fashion goods. The focus is on developing competencies associated with major retail merchandising and management functions. Course work includes retailing, marketing, buying, visual merchandising, promotion, and merchandising analysis. Career opportunities include retail buyer, store owner or manager, visual merchandiser, fashion coordinator or consultant.

Students in apparel design are preparing for careers in the apparel and textiles field. The program emphasizes the integration of design principles, fabrication, the needs and desires of the ultimate user, and mass production capabilities toward creation of unique apparel or accessory items for the future. Course work includes principles of design, apparel construction, functional apparel design, properties and performance evaluation of textiles, apparel production, and entrepreneurship. Career opportunities include fashion and functional designer, accessory designer, pattern maker, pattern company or manufacturer’s representative, and textile designer.
Students in all three options will develop business management, communication and administrative skills. An internship is required for all undergraduate students. Minors are available in apparel merchandising and apparel design.

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. The programs are scientifically based and research oriented. Students are exposed to social and ethical issues that graduates of the program may encounter. Graduate degrees in the department are tailored around departmental areas of expertise, professional goals of the candidate and College of Human Environmental Sciences and Graduate College requirements. Graduate programs may focus on either merchandising or environmental design. Students may investigate environmental design and merchandising from the following perspectives: product development and evaluation, consumer and supplier behavior, business development and management, and constructed environmental and individual interrelationships.

The Master of Science Degree. The Master of Science degree is designed to prepare individuals for careers in business, industry, extension and post-secondary or college teaching. The program is built around the academic background, experience, needs, special interests and professional goals of the student. The selection of courses that meet departmental requirements is made in consultation with the advisory committee. If the undergraduate degree is not in the area of specialization, specific undergraduate courses in design, housing and merchandising will be required as prerequisites. A minimum of 21 credit hours is required in the department. Additional courses may be selected from other areas of home economics or from supporting areas such as marketing, sociology, communications, and architecture. A thesis or creative component is required of all students.

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 coursework 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; however, a minimum of 60 credit hours beyond the master's must be completed. Each student will develop competence in the area of specialization which includes courses in the major and the support area. A global or international dimension and a management dimension are included. 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 that 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 offers undergraduate students six options organized into three programs: 1) teacher certification, 2) individual, family and community services, and 3) preprofessional preparation. The teacher certification program has two options: 1) early childhood education and 2) home economics education. The pre-professional program has three options: 1) child development, 2) youth and adult, and 3) gerontology. All of the options stress integration of theory and research with practice.

The early childhood education--teacher certification option provides professional preparation of individuals to teach in public schools programs for pre-kindergarten through third grade. The program trains students to design developmentally appropriate curricula for young children. The Oklahoma State Department of Education has accredited this B.S program leading to prekindergarten through third grade certification.

The home economics education--teacher certification option prepares men and women for professional positions in secondary and adult education, cooperative extension, and business. The program trains students to meet the educational and developmental needs of youth. The Oklahoma State Department of Education has accredited this B.S program, leading to secondary certification.

The individual, family and community services option prepares individuals for careers in providing services to children, youth, and adults and their families. The course content focuses on individual development, family dynamics, and community services. Many job opportunities are in social service and community service agencies, and in business and industry.
The child development, youth and adult, and gerontology–preprofessional preparation options provide preprofessional education for individuals planning to continue their education in medical school, law school, or in other graduate programs. The curriculum focuses on developing skills in critical thinking, scientific investigation, and written and oral communications in addition to gaining knowledge in human development and family sciences. These options provide feasibility to accommodate the prerequisites of the student’s particular area of interest.

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 Human Environmental Sciences 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 should have 12 upper-division semester credit hours in home economics, human development, family studies or closely-related areas. Students not meeting these criteria may be required to complete prerequisite undergraduate courses in order to be fully admitted.

A minimum of 18 credit hours of core departmental course work is required. Depending upon the program area, additional courses are required. Current departmental specializations for the Master of Science degree include 1) individual, family and community services; 2) marriage and family therapy; and 3) developmental and family sciences.

The specialization in individual, family and community services provides students with training in family science and human development to work in family-oriented careers in applied settings. Students take courses in research and theory in family science and human development and an emphasis area relating to individual career goals. Specifically, students choose an emphasis in 1) family and community services, 2) family economics 3) home economics education, or 4) early childhood education. The early childhood education emphasis includes a core theoretical and research base that could lead to partial fulfillment of requirements for state certification. Additional credit hours are required for licensure/certification in early childhood education. The specialization is designed to provide a balance of academic knowledge and experiences in individual, family and community services.

The marriage and family therapy specialization 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 requirements and a curriculum designed to meet the rigorous national guidelines set by the American Association for Marital 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, with methods for determining how couple and family problems develop and can be resolved.

The developmental and family sciences specialization provides students with experience working with families and children as well as the research and theoretical background to pursue further graduate studies. Emphasis areas in this specialization include 1) child development, and 2) family sciences. The child development emphasis balances academic knowledge from current research and theory with experiences working with children in laboratory and classroom environments. In family sciences, students receive research and theoretical foundations in addition to the professional skills necessary to work in a variety of family-oriented careers.

The Doctor of Philosophy Degree. The Doctor of Philosophy degree is awarded in home economics with specialization in family relations and child development. The objective of the program is to offer an integrated interdisciplinary combination of courses and research with a specialized focus on family relations or child and human development. Courses from other departments at Oklahoma State University are selected to provide a flexible yet rigorous program suited to the professional needs of specialization within FRCD.

The objectives of the interdisciplinary Ph.D program are to train competent researchers and educators who will make contributions to the scientific literature in child and family sciences. The objectives are reached by establishing competencies in: 1) an area of specialization within family relations or child and human development; 2) the design and implementation of research, including computer analysis and contributions to theory development; 3) the ability to function as a member of an interdisciplinary team and to synthesize knowledge from a variety of academic specialties, and, 4) the performance of professional leadership roles within a specific area of specialization.

Nutritional Sciences

Professor and Head Eldon C. Nelson, Ph.D.

The Department of Nutritional Sciences 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, physiology, management and interpersonal skills.

Two degree options and a minor are offered through the department. The dietetics option meets the Didactic Program in Dietetics (DPD) 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 physi-
ological 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 (DPD) 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 "A.D. " 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 DPD academic requirements.

All students admitted to the AP4 must be enrolled concurrently in the graduate program of the Department of Nutritional Sciences. 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 their areas of emphasis and in selected areas within and outside the department.

More detailed information on graduate study in the Department of Nutritional Sciences can be obtained by writing the head of the department.

School of Hotel and Restaurant Administration

Professor and Director Raphael R. Kavanaugh, Jr., Ed.D.

The OSU School of Hotel and Restaurant Administration responds to the needs identified by the hospitality industry. The school has a reputation for providing qualified and skillful innkeepers, and food and beverage service managers. 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, for multi-unit fast-food operations; laboratory for microcomputer management information systems; basic food preparation laboratory; facilities design laboratory; classroom and demonstration area; front office procedures laboratory; and resource center.

Career opportunities include 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, 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. in Hotel and Restaurant Administration degree may be earned by completing a minimum of 128 semester hours and maintaining a 2.50 grade-point average in the major area.

Facilities for internships include the Student Union Hotel, restaurants, hotels, and country clubs across the state.

A well-balanced academic high school program is recommended for students interested in hotel or restaurant management as a career. Mathematics, accounting, typing, computer science, English and speech are excellent background courses.

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College of Osteopathic Medicine

Thomas Wesley Allen, D.O.,
Provost and Dean
David T. John, Ph.D., Associate
Dean of Basic Sciences
Larry D. Cherry, D.O., Associate
Dean for Clinical Education
Wennette W. Pegues, Ed.D.,
Assistant Dean of Students
Tom E. Denton, D.O., Clinic Director
Gary H. Watson, Ph.D., Director of Research

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 OSU-COM 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.

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.

Osteopathic Medicine

Promoting a holistic approach to health care, osteopathic physicians treat the entire patient, not just symptoms, and traditionally have excelled in general and family health care. The doctor of osteopathic medicine is a fully-trained physician who prescribes drugs, performs surgery, and selectively utilizes all accepted scientific modalities to maintain and restore health. They are licensed to practice all phases of medicine (including surgery), and offer their patients an added dimension of health care through osteopathic manipulation, a hands-on technique that uses palpation and manipulative procedures of the musculoskeletal system to diagnose illness and treat patients. Osteopathic physicians view the body as a holistic unit, focusing special attention on the musculoskeletal system, which interacts with all body organs through the nervous and circulatory systems.

Minimum Admission Requirements

At the time of application, the applicant must have an overall grade-point average of at least 3.00 (on a 4.00 scale), a preprofessional science GPA of at least 2.75, and a minimum of 7 average score on the Medical College Admissions Test (MCAT). Applicants must take the MCAT. They are encouraged to take the examination in the spring prior to applying. Under special circumstances, the College may use discretion to admit students who do not meet these minimum requirements.

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. Satisfactory completion of the following courses, including laboratory, with no grade below a "C" (2.00 on a 4.00 scale):
   - English (six to eight semester hours)
   - Biology (eight to 10 semester hours)
   - Physics (eight to 10 semester hours)
   - General chemistry (eight to 10 semester hours)
   - Organic chemistry (eight to 10 semester hours)
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.

An on-campus interview with the Applicant Interview Committee is by invitation only. Interviews are conducted by clinical and basic science faculty members. 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 annual application deadline is January 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.

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 a one-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:

Oklahoma State University College of Osteopathic Medicine
1111 West 17th Street, Tulsa, Oklahoma 74107-1898
(918) 582-1972
Toll-free, 1-800-677-1972

Affiliated Institutions
Students gain clinical training beginning in their second year at OSU-COM, 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:

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
Humana Hospital Mountainview (Thornton, CO)

Postgraduate Education
The College administers internship programs at Tulsa Regional Medical Center, Hillcrest Health Center in Oklahoma City and Jefferson Regional Medical Center in Pine Bluff, Arkansas. In addition, the College administers a two-year general practice residency program in Tulsa.

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.

Selection Factors
The College considers applications for admission from all qualified candidates without regard to age, sex, creed, race, or national origin. Preference is given to Oklahoma residents. 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 their financial situations. The primary purpose of the College's aid program is to provide financial assistance to students who otherwise would be unable to afford tuition.

Although the principal responsibility for financing an education remains with the student and her or his 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 from the College.

Honor and Service Organizations
American College of General Practitioners--Undergraduate Chapter
Atlas Fraternity (social)
Christian Medical and Dental 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
Student Senate
Undergraduate American Academy of Osteopathy

Oklahoma State University
College of Veterinary Medicine

Joseph W. Alexander, D.V.M., M.S., Dean
S.A. Ewing, D.V.M., Ph.D., Interim Associate Dean for Academic Affairs
Thomas R. Thedford, D.V.M., Assistant Dean for Outreach
William C. Edwards, D.V.M., M.S., Interim Director of the Animal Disease Diagnostic Laboratory
James E. Breazile, D.V.M., Ph.D., Interim Director of Laboratory Animal Resources

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 10 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, at 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 Agricultural Sciences and Natural Resources 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 Agricultural Sciences and Natural Resources 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.

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.

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.

Humanities and social science—Six semester credit hours.

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 disadvantaged and minority 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, a limited number 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 of 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 Oklahoma State Regents for Higher Education (OSRHE) permit the College of Veterinary Medicine (CVM) to accept a limited number of students who do not meet the usual admission requirements. The College will consider applications from persons who are educationally or economically disadvantaged and/or who show promise of being able to succeed in the professional curriculum. Special consideration will be given to the diversity of students admitted to the CVM program in an attempt to fulfill OSRHE goals in the realm of social justice.

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 morphology, 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.

Veterinary Medicine and Surgery
Professor and Head Grant H. Turnwald, B.V.Sc., M.S.

Internship and Residency Programs
The department offers graduate professional programs (internships and residencies). Internships are one-year post-D.V.M. clinical programs in small or
large animal medicine and surgery. Internships are designed in part to prepare for residencies or graduate academic programs. Residencies are three-year clinical programs in various disciplines designed in part to prepare for specialty board certification. Graduate academic programs in other departments are offered in association with some residencies.

**Application Procedure.** Applications are accepted at any time and will be considered as positions become available.

### Veterinary Parasitology, Microbiology and Public Health

Professor and Head Robert W. Fulton, D.V.M., Ph.D.

**Graduate Programs**

The Department of Veterinary Parasitology, Microbiology and Public Health offers a program of research and study leading to the degrees of Master of Science and Doctor of Philosophy with specialization in the areas of veterinary hematology, protozoology, bacteriology, virology, immunology, epidemiology and public health. The program is designed to prepare individuals for careers in teaching and research, and is flexible to meet the needs of the student within the capabilities of the department and the University.

**Application Procedure.** Applications are accepted at any time; however, all documents must be received prior to March 1 for admission to the summer session, July 1 for the fall semester, and November 1 for the spring semester.

Applicants are required to submit scores for the Aptitude Test portion of the Graduate Record Examination. (The Advanced Test in Biology is also suggested.) International applicants are required to take the English Proficiency Exam (TOEFL: a passing score is 550 or above), as well as the Test of Spoken English (TSE: a passing score is 220 or above), before they can be considered for graduate teaching assistantships unless they are from a country where English is a first language.

Applicants generally select a major professor before they are admitted to the departmental program. They are urged to correspond with a member of the department's graduate faculty whose interests reflect their own before making application. Information about the faculty's research interests is available upon written request to the department. After acceptance to the graduate program, the department head recommends an advisory committee to the dean of the Graduate College to develop a plan of study.

**Prerequisites.** Candidates for admission must possess a bachelor's degree or equivalent, including 30 semester credit hours in biological and physical sciences. Unqualified admission will be granted only to those applicants with combined verbal and quantitative GRE total scores multiplied by their GPAs (last 60 hours) totaling 3000 or greater. Provisionary status may be awarded to those not having these credentials with specific requirements dependent on recommendations of the departmental graduate faculty.

### The Master of Science Degree

The M.S. must be earned by either Plan I, with thesis, 30 credit hours, including not more than six credit hours for the thesis, or Plan II, with report, 32 credit hours, including not more than two credit hours for the report. The plan of study will be tailored to meet the student's needs and interests; however, all students must enroll in the course Current Topics in Veterinary and Biomedical Science (VPAPA 5111) and in Seminar (VPARA 6110) for one credit hour each, and must pass three credit hours 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 the course Current Topics in Veterinary and Biomedical Science (VPAPA 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 academicians, 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 Graduate Record Examination scores.
Faculty

College of Agricultural Sciences and Natural Resources

Agricultural Communications
Professor and Head
Kevin G. Hayes, M.A.

Agricultural Economics
Professor and Head
James E. Osborn, Ph.D.

Regents and Pat and Jean Neustadt Distinguished Professor
Harry P. Mapp, Ph.D.

Regents Professor
Gerald A. Doeksen, Ph.D.

Professors

Assistant Professors
Brian Adam, Ph.D.; Michael R. Dicks, Ph.D.; Phil Kinkel, Ph.D.; Stephen R. Koontz, Ph.D.; Notie H. Lansford, Ph.D.; Patricia Norris, Ph.D.; Derrell S. Peel, Ph.D.; David A. Pyles, Ph.D.

Agricultural Engineering
Professor and Head
Billy J. Barfield, Ph.D.

Regents 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.; Ronald L. Elliott, Ph.D., P.E.; Raymond L. Huhnke, 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); John B. Solie, Ph.D., P.E.; Richard W. Whitney, Ph.D., P.E.

Associate Professors
Sam L. Harp, M.S., P.E.; Michael B. Smolen, Ph.D.; Marvin L. Stone, Ph.D.; Darrel E. Temple, M.S. (adjunct)

Assistant Professors
Glenn O. Brown, 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.

Assistant Researcher
J.D. Carlson, Ph.D.

Assistant Extension Specialist
Judith B. Oskam, B.A.

Agriculture (General)

Associate Professor and Assistant Dean
C. Wesley Holley, Ed.D.

Agronomy
Regents Professor and Head
Robert L. Westerman, Ph.D.

Regents Professor
Edward L. Smith, Ph.D.

Professors

Associate Professors
J.C. Banks, Ph.D.; Brian J. Carter, Ph.D.; Brett F. Carver, Ph.D.; Robert L. Gillen, Ph.D.; Darold L. Ketting, Ph.D.; Eugene G. Krenzer, Ph.D.; Bjorn C. Martin, Ph.D.

Assistant Professors
Earl R. Allen, Ph.D.; Michael P. Anderson, Ph.D.; Nicholas T. Basta, Ph.D.; Terrence G. Bidwell, Ph.D.; Arron C. Guenzi, Ph.D.; David R. Porter, 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, College of Agricultural Sciences and Natural Resources
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. Wettemann, 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, Ph.D.; Glenn E. Selk, Ph.D.; Donald R. Toifll, Ph.D.

Assistant Professors

Instructor
Glenden D. Adams, M.S.

Biochemistry
Professor and Head
James B. Blair, Ph.D.

Regents Professor
Chang-An Yu, Ph.D.

Professors

Associate Professor
Robert L. Matts, 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.

Regents and Sarkey’s Distinguished Professor
John R. Bauer, Ph.D.

T. L. Williams, Jr., Ph.D.

Assistant Professors
Raymond D. Eikenberry, Ph.D.

Professor and Endowed Chair
Stephen K. Wikel, Ph.D.

Professors
Robert W. Barker, Ph.D.; Richard C. Berberet, Ph.D.; Robert L. Burton, Ph.D.; J. Alexander Hair, Ph.D.; Cluff E. Hopla, Ph.D. (adjunct); S. Dean Kindler, Ph.D.; Donald C. Peters, Ph.D.; Kenneth N. Pinkston, Ph.D.; Roger D. Price, Ph.D. (adjunct); David K. Reed, Ph.D.; Hal C. Reed, Ph.D. (adjunct); James A. Webster, Ph.D.; Russell E. Wright, Ph.D.

Associate Professors

Assistant Professors
Jim T. Criswell, Ph.D.; Melanie J. Palmer, Ph.D.

Forestry
Professor and Head
Edwin L. Miller, Ph.D.

Professors
Thomas C. Hennessey, Ph.D.; Charles G. Tauer, Ph.D.

Associate Professors
Steven Anderson, Ph.D.; Stephen W. Halgren, Ph.D.; David K. Lewis, D.Phil.; Thomas B. Lynch, Ph.D.; Robert F. Wittwer, Ph.D.

Assistant Professors
Lawrence R. Gering, Ph.D.; Ronald E. Masters, 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.; B. Dean McGraw, Ph.D.; Charles L. Leider, Ph.D.; James E. Motes, Ph.D.; Michael W. Smith, Ph.D.; Glenn G. Taylor, Ph.D.

Associate Professors
Jeffrey A. Anderson, Ph.D.; Brian A. Kahn, Ph.D.

Assistant Professors

Instructors
Amy Barfell, B.L.A.; Steven Dobbs, M.S.

Plant Pathology
Professor and Head
Larry J. Littlefield, Ph.D.

Professors

Associate Professors
Carol L. Bender, Ph.D.; Alexander B. Filonow, Ph.D.; Jacqueline Fletcher, Ph.D.; Robert M. Hunger, Ph.D.; Larry L. Singleton, Ph.D.

Assistant Professors
Sharon von Broembsen, Ph.D.; John P. Damicone, Ph.D.

College of Arts and Sciences
Art
Associate Professor and Head
Nancy B. Wilkinson, Ph.D.

Professors
Larry C. Avrett, M.F.A.; Richard A. Bivins, M.F.A.; Robert E. Parks, M.F.A.

Associate Professors

Assistant Professors

Botany
Professor and Head
Glenn W. Todd, Ph.D.

Professors
Becky B. Johnson, Ph.D.; David W. Meinke, Ph.D.; James D. Ownby, Ph.D.; Paul E. Richardson, Ph.D.; Ronald J. Tylor, Ph.D.

Associate Professors
Anne Ewing, Ph.D. (adjunct); Susan Studlar, Ph.D. (adjunct)

Assistant Professors
Michael W. Palmer, Ph.D.; Arnon Rikin, Ph.D.

Chemistry
Professor and Head
Horatio A. Motolla, 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.; Corinna Czekaj, Ph.D.; Edward Knobbe, Ph.D.; Ziad El Rassi, Ph.D.

Computer Science
Professor and Head
George E. Hedrick, Ph.D.

Professors
John P. Chandler, Ph.D.; Rector L. Page, Ph.D. (adjunct)

Associate Professors
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); Huizhu 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
Leonard Leff, Ph.D.; 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.; Elizabeth Grubgeld, Ph.D.; Linda Leavell, Ph.D.; Carol Moder, Ph.D.; William Pixton, Ph.D.; Ravi Sheorey, Ph.D.; Jeffrey Walker, Ph.D.; Edward P. Walkiewicz, Ph.D.

Assistant Professors
Mark Cox, M.F.A.; Randi Eldevik, Ph.D.; Gene Halleck, Ph.D.; Edward Jones, Ph.D.; Robert Mayer, 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. Dollarhide, Ph.D.

Professors
Santiago Garcia, Ph.D.; Harry S. Wohletl, Ed.D.

Associate Professors
Cida S. Chase, Ph.D.; John J. Deveny, Jr., Ph.D.; Paul D. Epstein, Ph.D.; Perry J. Gethner, Ph.D.; John W. Howland, Ph.D.; David A. Patterson, Ph.D.; Dorothy Schrader, Ph.D.; James Wells, M.A.

Assistant Professors

Instructor
Dora M. Deveny, M.S.Ed.

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.

Associate Professors
James Curtis, Ph.D.; Louis Seig, Ph.D.; Stephen J. Stadler, Ph.D.; Stephen W. Tweedie, Ph.D.

Assistant Professors
Bryan D. Baker, Ph.D.; Stephen R. Higley, Ph.D.; Thomas A. Wikle, Ph.D.

Instructor
M. Richard Hackett, M.A.

School of Geology

Professor and Head
Zuhair F. Al-Shaieb, Ph.D.

Professors

Associate Professors
Ibrahim Cemen, Ph.D.; Arthur Cleaves, Ph.D.; Vernon Scott, Ph.D.

History

Associate Professor and Head
W. Roger Biles, 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.; Chung-shin Park, Ph.D.; Alain Saint-Satins, Ph.D.; Elizabeth A. Williams, Ph.D.

School of Journalism and Broadcasting

Professor and Director
Marian D. Nelson, Ed.D.

Professor
Charles A. Fleming, Ed.D.

Associate Professors

Assistant Professors

Mathematics

Associate Professor and Head
J. Brian Conrey, Ph.D.

Associate Professor and Associate Head
Bruce C. Crauder, Ph.D.

Regents and Southwestern Bell Professor
Dale E. Alspach, Ph.D.

Regents Professor
John M. Jobe, Ph.D.

Professors

Associate Professors
James Cogdell, Ph.D.; Amit Ghosh, Ph.D.; Sheldon Katz, Ph.D.; Lisa A. Mantini, Ph.D.; J. Robert Myers, Ph.D.; Alan Noell, Ph.D.; Carsten Schutt, Ph.D.; David J. Ullrich, Ph.D.; David J. Wright, Ph.D.

Assistant Professors
Birne Binegar, Ph.D.; Jin-Tseh Chang, Ph.D.; Edward Dunne, Ph.D.; Mark McConnell, Ph.D.; Akihiko Yukie, Ph.D.; Roger Zierau, Ph.D.

Microbiology and Molecular Genetics

Professor and Head
Robert V. Miller, Ph.D.

Professors
Norman N. Durham, Ph.D.; H. James Harmon, Ph.D.; Helen Vishniac, Ph.D.

Associate Professor
Alan R. Harker, Ph.D.

Assistant Professors
Robert L. Burnham, Ph.D.; Kim Burnham, 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

Staff
SSgt Jean A. Rawles; SSgt Mary S. Tetrick

Military Science

Professor of Military Science and Head
LTC Michael C. Milam, M.B.A.

Assistant Professors
Cpt Eric F. Lasher, M.S.; Cpt Charles W. Marshall, B.S.; Cpt Ron Stanfield, B.S.

Staff
SGM Rodney Williamson; 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.

Oklahoma State University 147
Philosophy
Professor and Head
Neil R. Luebeke, Ph.D.

Professors
Richard W. Eggerman, Ph.D.; Edward G. Lawry, Ph.D.

Associate Professors

Assistant Professors
Doren A. Recker, Ph.D.; Mui-Hwa (May) Sim, Ph.D.

Physics
Professor and Head
H. Larry Scott, Ph.D.

Regents Professors
Bruce Ackerson, Ph.D.; James N. Lange, Ph.D.; Steven W. S. McKeever, Ph.D.; Richard C. Powell, Ph.D.

Professors

Associate Professors
Donna K. Bandy, Ph.D.; Satya Nandi, Ph.D.; Peter O. Shull, Ph.D.; James P. Wicksted, Ph.D.

Assistant Professors
Robert Havenstein, Ph.D.; Jing Luo, Ph.D.; Roger Reeves, Ph.D.; Penger Tong, Ph.D.; Xincheng Xie, Ph.D.

Political Science
Professor and Head
William Parle, Ph.D.

Professors

Associate Professors
Anthony E. Brown, Ph.D.; Theodore Vestal, Ph.D.; Joseph Westphal, Ph.D.

Assistant Professors
James A. Davis, Ph.D.; Rebekah Herrick, Ph.D.; Michael Hirlinger, Ph.D.; Joel M. Jenswold, Ph.D.; Danny M. Adkison, Ed.D.

Psychology
Associate Professor and Head
Vicki Green, Ph.D.

Professors

Associate 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.

Assistant Professors
John Chaney, Ph.D.; Richard Potts, Ph.D.; Maureen Sullivan, Ph.D.

Academic Counselor
Craig Satterfield, M.A.

Coordinator, Minority Graduate Student Program
Winona Simms, M.S.

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.

Sociology
Professor and Head
George Arquitt, Ph.D.

Professors
Donald Brown, Ph.D.; Jack Bynum, Ph.D.; Richard Dodder, Ph.D.; Charles Edgley, Ph.D.; Larry Hynson, Ph.D.; Larry Perkins, D.S.S.; Harjit Sandhu, Ph.D.

Associate Professors
Patricia Bell, Ph.D.; John Cross, Ph.D.; Kenneth Kiser, Ph.D.; David Knottnerus, Ph.D.

Assistant Professor
Lee Maril, Ph.D.

Research Associate
Barbara Murray, Ph.D.

Academic Counselor
Dahlia Gonzalez, M.S.

Speech Communication
Associate Professor and Head
Paul D. Harper, Ph.D.

Professor
James Hughey, Ph.D.

Associate Professor
Mike Stano, Ph.D.

Assistant Professors
Bena Harper, Ed.D.; Jeffrey McQuillen, Ph.D.; David Schrader, 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, M.A.; Martha Boone, Ph.D.

Instructors
Dawn Carroll, M.S.; Carol Headrick, M.C.D.; Jan Marks, M.S.

Statistics
Professor and Head
J. Leroy Folks, Ph.D.

Professors
P. Larry Claypool, Ph.D.; Ignacy I. Kotsierski, 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.; Mark E. Payton, Ph.D.; 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.; Judith Cronk, M.F.A.; Heidi Hoffer, M.F.A.

Zoology
Professor and Head
Jerry Wilhm, 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.

Associate Professors
James Blankmeyer, Ph.D.; Tracy Carter, Ph.D.; Margaret S. Ewing, Ph.D.; Stanley Fox, Ph.D.; Jerry Hurst, Ph.D.; David Leslie, Ph.D.; (adjunct); Robert Lochmiller, Ph.D.; Larry Talent, Ph.D.; Alexander Zale, Ph.D. (adjunct)

Assistant Professors
Marsha Black, Ph.D.; Tim Braden, Ph.D.; Karen McBee, Ph.D.; Gary Ostrander, Ph.D.

College of Business Administration
School of Accounting
Professor and Head
Lanny G. Ohasteen, Ph.D., CPA

Professors
Patrick B. Dorr, Ph.D., CPA; Lawrence H. Hammer, D.B.A., CPA; Don R. Hansen, Ph.D., CMA; Amy H. Lau, Ph.D., CPA; Gary K. Meek, Ph.D., CPA; Dennis H. Patz, Ph.D., CPA; John W. Wilguess, Ph.D., CPA; Charlotte J. Wright, Ph.D., CPA
Assistant 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 R. Ransom, 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. Qubile, Ph.D.;
Jeanine D. Rhea, Ed.D.

Associate Professors
James F. Jackman, J.D.; Greg Mosier,
Ed.D., J.D.

Adjunct Assistant 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 R. Ransom, Ph.D.,
CPA; Thomas S. Wetzel, Ph.D.

Assistant Professor
David S. Murphy, Ph.D., CPA

Business Administration
M.B.A. Program Director
Cynthia S. Gray, M.B.A.

Marketing
Professor and Head
L. Lee Manzer, Ph.D.

Professors
Stephen J. Miller, Ph.D.; John C.
Mowen, Ph.D.; William G. Zikmund,
D.B.A.

Associate Professors
James Hromas, Ph.D.; Ruth H. Krieger,
Ph.D.; Joshua L. Wiener, Ph.D.

Assistant Professors
Terry A. Bristol, Ph.D.; Gouram
Chakravorty, Ph.D.; Gary L.
Frankwick, Ph.D.; Richard Germain,
Ph.D.; Jerry R. Goolsby, Ph.D.; Ajay
Sukhdev, Ph.D.

College of Education
Applied Behavioral Studies
Professor and Head
Dale R. Fuqua, Ph.D.

Professors
Kay S. Bull, Ph.D.; N. Jo Campbell,
Ed.D.; Judith E. Dobson, Ph.D.; Rondal
R. Gamble, Ph.D.; James M. Seals,
Ph.D.; Paul G. Warden, Ph.D.

Associate Professors
Donald L. Boswell, Ph.D.; Al F.
Carlozzi, Ed.D.; Charles R. Davis,
Ph.D.; Marcia M. Dickman, Ph.D.;
Pauline J. Holloway, Ph.D.; Imogene
Katy M. Perry, Ph.D.; Brent M. Snow,
Ph.D.; J. Barbara Wilkinson, Ph.D.

Assistant Professors
Laura B. Barnes, Ph.D.; Chris F.
Diesch, Ph.D.; Judith S. Kaufman,
Ph.D.; David E. McIntosh, Ph.D.; Diane
M. Montgomery, Ph.D.; John S.C.
Romans, Ph.D.; Janice E. Williams,
Ph.D.

Aviation and Space Education
Professor and Head
Kenneth E. Wiggins, Ed.D.

Endowed Chair
Larry T. Brewster, Ph.D.

Instructor
John A. Burton, B.S.

Curriculum and Instruction
Professor and Head
Leah Engelhardt, Ph.D.

Professors
Douglas B. Aichele, Ed.D.; Carolyn
Russell L. Dobson, Ed.D.; Kenneth L.
William E. Segall, Ed.D.; David Yellin,
Ph.D.

Associate Professors
Joyce Friske, Ph.D.; R. Malatesha
Bruce A. Petty, Ph.D.; Margaret M.
Scott, Ph.D.; John Steinbrink, Ed.D.

Assistant Professors
Gerald N. Burns, Ed.D. (visiting); Sally
Carter, Ed.D.; Don M. Harvey, Ph.D.;
H. Jon Jones, Ed.D.; Kouider Mokhtari,
Ph.D.; Nadine Olson, Ph.D.; Gretchen
Schwarz, Ph.D.

Educational Administration
and Higher Education
Professor and Head
Joseph W. Licata, Ph.D.

Professors
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Karman, Ph.D.; Kenneth H. McKinley,
Ph.D.;

Associate Professors
Lynn K. Arney, Ed.D.; Gerald R. Bass,
Adrienne Hyle, Ph.D.; Deke Johnson,
Webster, Ph.D.

Assistant Professors
Dorothy E. Finnegar, Ph.D.; Ed Harris,
Ph.D.; Stephen Katsinas, Ph.D.
School of Health, Physical Education and Leisure

Professor and Director
George H. Oberle, P.E.D.

Associate Professor and Coordinator, Physical Education
Kathryn L. Blalock, Ed.D.

Assistant Professors
Larry L. Brown, Ph.D., M.S.; Robert J. Edmiston, Ed.D.; Mark B. Holcomb, M.S.; Mark A. Johnson, M.S.; Robert S. McElroy, M.S.

Assistant Professor and Coordinator, Health
Lowell Caneday, Ph.D.

Assistant Professor and Coordinator, Physical Education
John G. Bayless, Ed.D.

Assistant Professor and Coordinator, Leisure
Betty M. Edgley, Ed.D.

Assistant Professors
Steven W. Edwards, Ph.D.; James H. Rogers, Ph.D.

Associate Professors

Assistant Professors

School of Occupational and Adult Education

Professor and Director
Melvin D. Miller, Ed.D.

Professor
Garry R. Bice, Ph.D.

Associate Professors

Adjunct Associate Professors

Assistant Professors
Ruth Carroll, Ed.D. (visiting); Gary Oakley Ph.D.; Ray Sanders, Ed.D.

Lecturers
Charley Davis, M.S.; Roger Gordon, M.S.; Trelynn Morris, M.S.; Scott Shook, M.S.

College of Engineering, Architecture and Technology

Agricultural Engineering

Professor and Head
Billy J. Barfield, Ph.D.

Regents 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.; Ronald L. Elliott, Ph.D., P.E.; Raymond L. Huhnke, 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); John B. Solie, Ph.D., P.E.; Richard W. Whitney, Ph.D., P.E.

Associate Professors
Sam L. Harp, M.S., P.E.; Michael B. Smolen, Ph.D.; Marvin L. Stone, Ph.D.; Darrel E. Temple, M.S. (adjunct)

Assistant Professors
Glenn O. Brown, 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.

Assistant Researcher
J.D. Carlson, Ph.D.

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. Foutch, Ph.D.; A.H. Johannes, Ph.D., Ph.D.; 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. Snethen, Ph.D., P.E.

Associate Professors
S.A. Ahmed, Ph.D., P.E.; William W. Clarkson, Ph.D., P.E.; John N. Veenstra, Ph.D., P.E.; Farrel J. Zwereneman, Ph.D., P.E.

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.

Southwestern Bell Professor
Jerzy S. Krasinski, Ph.D.

PSO/Naeter Professor
Ramachandra G. Ramakumar, Ph.D., P.E.

Belmon Chair
Ravinder K. Jain, Ph.D.

Professors
H. Jack Allison, Ph.D., P.E.; Charles M. Bacon, Ph.D., P.E.; J. Bee Bednar, Ph.D. (adjunct); Hans R. Bilger, Ph.D.; Ronald P. Rhoten, Ph.D., P.E.

Associate Professors

Assistant Professors
John W. Carlinhour, Ph.D., E.I.; Thomas W. Gedra, Ph.D.; Jong J. Lee, Ph.D.; George Scheets, Ph.D.; James C. West, Ph.D., E.I.; Jerry D. West, M.S. (adjunct); Raymond Zanoni, Ph.D.

General Engineering

Associate Professor
Stephen S. Bell, Ph.D., P.E.

Industrial Engineering and Management

Professor and Head
Timothy J. Greene, Ph.D.

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 Professors
Manjunath Kamath, Ph.D.; David B. Pratt, Ph.D., P.E.

Mechanical and Aerospace Engineering

Professor and Head
Lawrence L. Hobrock, Ph.D., P.E.

Most Professor
Ranga Komanduri, Ph.D.

Professors
Ray M. Bowen, Ph.D., P.E.; Afshin J. Ghajar, Ph.D., P.E.; David G. Lilley, Ph.D., D.Sc., 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.; Merlin L. Millett, Jr., Ph.D., P.E. (adjunct); Larry D. Zirkie, Ph.D., P.E.

School of Business Administration

Assistant Professors

Assistant Professor
John W. Cartinhour, Ph.D., E.I.; Thomas W. Gedra, Ph.D.; Jong J. Lee, Ph.D.; George Scheets, Ph.D.; James C. West, Ph.D., E.I.; Jerry D. West, M.S. (adjunct); Raymond Zanoni, Ph.D.

General Engineering

Associate Professor
Stephen S. Bell, Ph.D., P.E.

Industrial Engineering and Management

Professor and Head
Timothy J. Greene, Ph.D.

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 Professors
Manjunath Kamath, Ph.D.; David B. Pratt, Ph.D., P.E.

Mechanical and Aerospace Engineering

Professor and Head
Lawrence L. Hobrock, Ph.D., P.E.

Most Professor
Ranga Komanduri, Ph.D.

Professors
Ray M. Bowen, Ph.D., P.E.; Afshin J. Ghajar, Ph.D., P.E.; David G. Lilley, Ph.D., D.Sc., 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.; Merlin L. Millett, Jr., Ph.D., P.E. (adjunct); Larry D. Zirkie, Ph.D., P.E.
Associate Professors
Frank W. Chambers, Ph.D., P.E.;
Ronald L. Dougherty, Ph.D.; Bruce A. Feiertag, B.S. (adjunct); James K. Good, Ph.D., P.E.; Ing-Tsann Hong, Ph.D.; P.E. (adjunct); Don A. Lucca, Ph.D.; John J. Shelton, Ph.D., P.E. (adjunct); Gary E. Young, Ph.D., P.E.

Assistant Professors
Ronald D. Delahoussaye, Ph.D.; Timothy M. Minahen, Ph.D.; Eduardo A. Misawa, Ph.D.; Yuh Cheng Shiau, Ph.D., P.E.; Jeffrey D. Spitzer, Ph.D., P.E.

Lecturers
Howard E. Conlon, M.S., P.E.; William R. Qualls, M.S.; Curtis Vickery, M.S.

School of Architecture
Professor and Head
James F. Knight, M.Arch., AIA

Professor

Associate Professor
Eric N. Angeline, M.S. Arch., M.S.Engr., P.E.; David A. Hansen, M.Arch.; Richard E. Seedorf, M.Arch., AIA; Jeffrey K. Williams, M.Arch., AIA

Assistant Professor
Nigel R. Jones, M.Arch., RIBA; Steve E. O'Hara, M.Arch., Engr., P.E.; J. Randall Seitsinger, M.Arch.

Division of Engineering Technology
Professor and Director
James E. Bose, Ph.D., P.E.

Construction Management Technology
Associate Professor and Head
Charles A. Rich, M.S., P.E.

Assistant Professors
Mark H. Pruitt, M.S., M.Arch.; Douglas J. Tapp, M.S.

Electronics and Computer Technology
Associate Professor and Head
Thomas G. Bertenshaw, M.S., M.Ed.

Associate Professors
Howard M. Johnson, Ph.D.; Larry D. Jones, Ed.D.; Samuel I. Kraemer, M.S., P.E.

Assistant Professor
Ellis Nuckolls, M.S., P.E.

Instructor
Jimmy Bryson, B.S.

Fire Protection and Safety Technology
Professor and Interim Head
Marvin D. Smith, Ph.D., P.E.

Associate Professors
Larry Borgett, M.S., C.S.S.P., P.E.; Pat D. Brock, M.S., P.E.

Assistant Professors
James D. Brown, M.S.C.S.S.P., P.E.; Jim L. Hanson, M.S., C.S.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. Scheihing, 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.

Associate Professor
D. Jack Bayles, Ph.D., P.E.

Assistant Professors
Mike Magill, M.S.; John C. Scheihing, B.S.; Larry D. Simmons, M.S.; G. Richard Thomas, B.A.

Mechanical Power Technology
Professor and Head
Marvin D. Smith, Ph.D., 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 Human Environmental Sciences
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.

Nutritional Sciences
Professor and Head
Eldon C. Nelson, Ph.D.

Professors
Lea L. Ebro, Ph.D.; Barbara J. Stoeccker, Ph.D.

Associate Professors
Janice Herrmann, 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-Ukpaka, 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
Professor and Director
Raphael R. Kavanaugh, Jr., Ed.D.

Professor
G. Baker Bokorney, Ed.D.
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)
Christian S. Hanson, D.O.; Richard A. Hastings, D.O.; David F. Hitzeman, D.O.; Glenn B. Robbins, Jr., 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

Clinical Professor (part-time appointment)
Joseph A. Keuchel, D.O.

Clinical Associate Professors (part-time appointment)

Clinical Assistant Professors (part-time appointment)
Dale C. Askins, D.O.; Laurie C. Clark, D.O.; Lori B. Stewart, D.O.; Margaret Stripling, D.O.; Gerald Wootan, D.O.

Internal Medicine

Professor
Thomas Wesley Allen, D.O.

Clinical Associate Professors (part-time appointment)
Dale W. Bratzler, D.O.; Steven C. Buck, D.O.

Obstetrics/Gynecology

Clinical Professor and Interim Chair (part-time appointment)
Joseph C. Nemcok, D.O.

Clinical Professor
Richard R. Polk, D.O.

Osteopathic Principles and Practices

Clinical Associate Professor and Interim Chair
Herbert A. Yates, D.O.

Pathology

Professor and Chair
Dianne Miller-Hardy, Ph.D.

Clinical Associate Professor (part-time appointment)
Edward F. Goljan, M.D.

Clinical Assistant Professor (part-time appointment)
Anna M. Randall, D.O.

Pediatrics

Associate Professor and Interim Chair
William R. Kennedy, D.O.

Psychiatry/Behavioral Sciences

Professor and Chair
J.C. Doggett, Ph.D.

Associate Professors
Richard H. Bost, Ph.D.; Susan K. Geiss, Ph.D.; Michael H. Pollak, Ph.D.

Assistant Professors
Wenette W. Pegues, Ed.D.; Vivian M. Stevens, Ph.D.; Nancy Van Winkle, Ph.D.

Clinical Assistant Professor (part-time appointment)
David L. Shadid, D.O.

Radiology

Clinical Professor and Chair (part-time appointment)
Dean R. Fullingim, D.O.

Clinical Professors (part-time appointment)

Clinical Associate Professors (part-time appointment)
C.F. Finell, D.O.; Floyd W. Rosdahl, D.O.

Clinical Assistant Professors (part-time appointment)
John Dennis, D.O.; Thomas L. Harrison, D.O.

Surgery

Clinical Associate Professor and Interim Chair
D. K. Watson, D.O.

Professor
William E. Moore, D.O.

Clinical Professors (part-time appointment)
Harold L. Battenfield, D.O.; James J. Trussell, D.O.

Clinical Assistant Professors (part-time appointment)
Ronald E. Jackson, D.O.; Robert W. Nebergall, D.O.

Basic Sciences

Professor and Associate Dean
David T. John, Ph.D.

Anatomy

Professor and Chair
Kirby L. Jarolim, Ph.D.

Professors
Gerald R. Kirk, Ph.D.; Daniel E. Overack, Ph.D.; James F. Taylor, Ph.D.

Associate Professor
William D. Meek, Ph.D.

Biochemistry/Microbiology

Professor and Chair
Martin W. Banschbach, Ph.D.

Professors
Robert S. Conrad, Ph.D.; David T. John, Ph.D.; Robert C. Ritter, Ph.D.; Charles G. Sanny, Ph.D.

Associate Professors
Joseph A. Price, III, Ph.D.; Ortwin W. Schmidt, Ph.D.; Gary H. Watson, Ph.D.

Computer Education

Assistant Professor
George M. Bosela, Ed.D.

Dentistry

Clinical Associate Professor (part-time appointment)
Thad Taylor, D.D.S.

Medical Jurisprudence

Clinical Assistant Professor
Janet C. Pope, J.D.

Physiology/Pharmacology

Professor and Chair
George M. Brenner, Ph.D.

Professor
Loren G. Martin, Ph.D.

Associate Professors
Warren E. Finn, Ph.D.; Mark A. Mitchell, Ph.D.

Assistant Professors
Alexander J. Rouch, Ph.D.; Craig W. Stevens, Ph.D.
College of Veterinary Medicine

Physiological Science

Regents Professor and Head
Charlotte L. Ownby, 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
Nicholas L. Cross, B.S., Ph.D.; *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.; 
*Richard V. Shawley, D.V.M., M.S.; 
*Thomas R. Thedford, D.V.M.

Associate Professors
*Ronald W. Welsh, D.V.M.

Assistant Professors

Instructor
Jean D. Hedges, D.V.M.

Residents
Mary Ann Guglick, D.V.M.; Paula J. Hardin, D.V.M.; Larry Mark Haugland, D.V.M.; David H. Stephens, D.V.M.

Veterinary Parasitology, Microbiology and Public Health

Professor and Head
*Robert W. Fulton, D.V.M., Ph.D.

Regents Service Professor
*Patrick M. Morgan, D.V.M., Dr. P.H.

Professors

Associate Professors
*Jean M. d’Offay, D.V.M., Ph.D.; 
Richard W. Eberle, Ph.D.; J. Carl Fox, Ph.D.; John T. Homer, Ph.D.; John H. Wyckoff Ill, Ph.D.

Assistant Professors
*Rebecca J. Morton, D.V.M., M.S.; 
Martha E. Stebbins, D.V.M., M.P.H.

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., Ph.D.; *E.L. Stair, D.V.M., Ph.D.; *Delbert L. Whitenack, D.V.M., Ph.D.

Associate Professors
Kenneth Clinkenbeard, 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.

Residents
Sundeep Chandra, B.V.Sc.; Patricia Ewing, D.V.M.; Madhav Paranje, M.V.Sc.; Dana Walker, D.V.M.

Research Associate
Edmour Blouin, Ph.D.

Oklahoma Animal Disease Diagnostic Laboratory

Interim Director
William C. Edwards, D.V.M., M.S.

Bacteriologist
*Ronald D. Welsh, D.V.M., M.S.

Pathologists

Virologist
*Charles A. Baldwin, D.V.M., Ph.D.

Toxicology Resident
Deena Gregory, D.V.M.

*Board Certification in Specialty Area
Graduate College

Graduate College Calendar

(Refer also to the "University Calendar")

First Semester 1992-93,

August 24, Monday
Class work begins
September 4, Friday
Last day to file a diploma application
September 25, Friday
Applications for graduate credit for graduating seniors due
November 6, Friday
FINAL DRAFT copy of dissertations, theses and reports due
November 6, Friday
Application for admission to spring candidacy due for doctoral and Ed.S. candidates
November 20, Friday
RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due
December 4, Friday
FINAL COPIES of dissertations, theses and reports due by fall candidates
December 13, Sunday
Graduate College Hooding Convocation
December 18, Friday
Class work ends

Second Semester 1992-93

Spring
January 11, Monday
Class work begins
January 22, Friday
Last day to file a diploma application
February 12, Friday
Applications for graduate credit for graduating seniors due
March 26, Friday
FINAL DRAFT copy of dissertations, theses and reports due
April 9, Friday
RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due
April 23, Friday
FINAL COPIES of dissertations, theses and reports due by spring candidates
April 23, Friday
Application for admission to fall candidacy due for doctoral and Ed.S. candidates
May 7, Friday
Class work ends

Second Semester 1993-94, Spring
January 10, Monday
Class work begins
January 21, Friday
Last day to file a diploma application
February 11, Friday
Applications for graduate credit for graduating seniors due
March 25, Friday
FINAL DRAFT copy of dissertations, theses and reports due
April 8, Friday
RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due
April 22, Friday
FINAL COPIES of dissertations, theses and reports due by spring candidates
April 22, Friday
Application for admission to fall candidacy due for doctoral and Ed.S. candidates
May 6, Friday
Class work ends
May 6, Friday
Graduate College Hooding Convocation
May 7, Saturday
University Commencement

Summer 1993

Regular 8-Week Summer Session
June 7, Monday
Class work begins
June 11, Friday
Last day to file a diploma application
June 11, Friday
FINAL DRAFT copy of dissertations, theses and reports due
June 18, Friday
Applications for graduate credit for graduating seniors due
June 25, Friday
RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due
July 9, Friday
FINAL COPIES of dissertations, theses and reports due by summer candidates
July 30, Friday
Graduate College Hooding Convocation
July 30, Friday
Class work ends

First Semester 1993-94, Fall
August 23, Monday
Class work begins
September 3, Friday
Last day to file a diploma application
September 24, Friday
Applications for graduate credit for graduating seniors due
November 5, Friday
FINAL DRAFT copy of dissertations, theses and reports due
November 5, Friday
Application for admission to spring candidacy due for doctoral and Ed.S. candidates
November 19, Friday
RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATION due
December 3, Friday
FINAL COPIES of dissertations, theses and reports due by fall candidates
December 12, Sunday
Graduate College Hooding Convocation
December 17, Friday
Class work ends

Second Semester 1993-94, Spring
January 10, Monday
Class work begins
January 21, Friday
Last day to file a diploma application
February 11, Friday
Applications for graduate credit for graduating seniors due
March 25, Friday
FINAL DRAFT copy of dissertations, theses and reports due
April 8, Friday
RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due
April 22, Friday
FINAL COPIES of dissertations, theses and reports due by spring candidates
April 22, Friday
Application for admission to fall candidacy due for doctoral and Ed.S. candidates
May 6, Friday
Class work ends
May 6, Friday
Graduate College Hooding Convocation
May 7, Saturday
University Commencement

Summer 1994

Regular 8-Week Summer Session
June 6, Monday
Class work begins
June 10, Friday
Last day to file a diploma application
June 10, Friday
FINAL DRAFT copy of dissertations, theses and reports due
June 17, Friday
Applications for graduate credit for graduating seniors due
June 24, Friday
RESULTS of doctoral, Ed.S., and Plan I, Plan II or Plan III master's FINAL EXAMINATIONS due
July 8, Friday
FINAL COPIES of dissertations, theses and reports due by summer candidates
July 29, Friday
Graduate College Hooding Convocation
July 29, Friday
Class work ends

154 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.

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, Chair
Charlotte Ownby, Vice-Chair
Group 1--Biological Sciences
1993--Robert Wettermann
1995--Charles Taliaferro
1993--James Motes
Group II--Humanities
1992--Art Pentz
1994--Linda Leavell
1992--William Pixton
Group III--Physical Sciences and Technology
1993--Peter Moretti
1995--Robert Gholson
1993--K.M. George
Group IV--Social Sciences
1992--Daniel Tilley
1994--George Carney
1994--David Fournier
Group V--Teacher Education
1993--Judith Dobson
1995--Garry Bice
1993--Beulah Hirschlein

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 made 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 Center for International Trade Development, 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 of the Faculty Council, a representative from Sigma Xi, the director of Grants and Contracts Administration, and the research directors of the various colleges.

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 Agricultural Sciences and Natural Resources, 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 curricula in advertising, news editorial, and public relations are accredited by the Accrediting Council on Education for Journalism and Mass Corn-
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.

Services at OSU

Library

The Oklahoma State University Edmon Low Library contains more than 5.2 million books, documents, and microforms, and about 18,000 serials. 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 monitors are conveniently placed for limited consultation for software and hardware, and the college’s computer demonstration lab in 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.

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### Research Centers

<table>
<thead>
<tr>
<th>Center</th>
<th>Address</th>
<th>Phone</th>
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</thead>
<tbody>
<tr>
<td>Agriculture Experiment Station</td>
<td>139 Agricultural Hall</td>
<td>744-5398</td>
</tr>
<tr>
<td>Agriculture Research Station</td>
<td>101 Agricultural Hall</td>
<td>744-7036</td>
</tr>
<tr>
<td>Caddo Research Station</td>
<td>R.R. Box 42 Fort Cobb, OK 73738</td>
<td>643-2501</td>
</tr>
<tr>
<td>Eastern Research Station</td>
<td>Rt. 1, Box 65A Haskell, OK 74436</td>
<td>918-482-3822</td>
</tr>
<tr>
<td>Irrigation Research Station</td>
<td>Route 1 Altus, OK 73521</td>
<td>482-3459</td>
</tr>
<tr>
<td>Kiamichi Field Station</td>
<td>Rt. 1, Box 228 Idabel, OK 74745</td>
<td>286-5175</td>
</tr>
<tr>
<td>North Central Research Station</td>
<td>Box 141 Lahoma, OK 73754</td>
<td>796-2447</td>
</tr>
<tr>
<td>Southeast Center</td>
<td>Sparks, OK 74869</td>
<td>918-866-2263</td>
</tr>
<tr>
<td>Southwest Agronomy Research Station</td>
<td>Rt. 3, Box 75 Chickasha, OK 73018</td>
<td>224-4476</td>
</tr>
<tr>
<td>Vegetable Research Station</td>
<td>Tipton, OK 73570</td>
<td>667-4273</td>
</tr>
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<td>Vegetable Research Station</td>
<td>139 Agricultural Hall</td>
<td>744-5398</td>
</tr>
<tr>
<td>Center for Aerospace Education Services Project</td>
<td>300 North Cordell</td>
<td>744-7015</td>
</tr>
<tr>
<td>Center for Applications and Remote Sensing</td>
<td>107 Thatcher Hall</td>
<td>744-5178</td>
</tr>
<tr>
<td>Center for Automated Design and Manufacturing</td>
<td>218 Engineering North</td>
<td>744-5900</td>
</tr>
<tr>
<td>Center for Consumer Services</td>
<td>016 Home Economics</td>
<td>744-7084</td>
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<td>Center for Economic Education</td>
<td>112 Business Building</td>
<td>744-5204</td>
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<td>Center for International Trade Development</td>
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<td>Center for Local Government Technology</td>
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<td>Center for Systems Science</td>
<td>321 Engineering South</td>
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<td>Community Education Center</td>
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<td>Electronics Laboratory</td>
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<td>Engineering Energy Laboratory</td>
<td>216 Engineering South</td>
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<td>Family Study Center</td>
<td>114 Home Economics</td>
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<td>Fluid Power Research Center</td>
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<td>Human Nutrition Center</td>
<td>425 Home Economics</td>
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<td>Human Resources Development Center</td>
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<td>Instructional Materials Center</td>
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<td>Laser Spectroscopy Facility</td>
<td>232 Physical Science</td>
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<td>Materials Synthesis and Characterization Laboratory</td>
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<td>Natural Resources and Environmental Education Center</td>
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<td>Oklahoma Industrial Energy Management Program</td>
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<td>Physical Properties Laboratory</td>
<td>415A Engineering North</td>
<td>744-5282</td>
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<td>Plant Disease Diagnostic Laboratory</td>
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<td>744-5643</td>
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<tr>
<td>Statistical Laboratory</td>
<td>301 Math Science</td>
<td>744-5684</td>
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<tr>
<td>University Center for Energy Research</td>
<td>001 Life Science East</td>
<td>744-5700</td>
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<td>University Center for Water Research</td>
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<td>744-6995</td>
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<tr>
<td>Veterinary Medical Research Program</td>
<td>308 Veterinary Medicine</td>
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<td>Veterinary Research Station</td>
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<td>744-5398</td>
</tr>
<tr>
<td>Water Quality Research Laboratory</td>
<td>425 Life Science West</td>
<td>744-5551</td>
</tr>
</tbody>
</table>

### Recreation

Intellectual exercising involves complete development of the mind, body and spirit. Opportunities for students to use their free time include concerts, lectures, films, and other media forms. Many student organizations function to enhance the educational experience of the student. The Colvin Physical Education Center offers a wide variety of organized and informal recreational activities including intramural sports of many types.

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 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.

### 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

Teaching and Research Assistantships

The University awards numerous teaching and research assistantships with competitive stipends. Fellowship opportunities are available through several programs. The terms of appointment are one semester or longer. Service expected and the number of hours of graduate work a student may take are governed by the terms of the appointment. Applications should be addressed to the head of the department in which the appointment is desired.

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 (ACT-FFS) 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 for Higher Education have set aside special funds to underwrite assistantships 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 student 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 $1,200 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.

Departmental Scholarships

These awards are controlled by specific departments or those which require nomination from the department on behalf of the student. Individual departments may know if particular awards or scholarships are available in the discipline.

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.

Special Programs

Certification Programs
Oklahoma State University offers Oklahoma 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.

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
- M.A. in English
- Teaching English as a Second Language
- M.S. in Accounting
- 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
- Curriculum and Supervision
- 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. in 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.

Interdisciplinary Programs

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, physical, and social sciences and from education and engineering 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 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 ENVR 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 ENVR 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 1 for fall enrollment, and July 1 for 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)
Microbiology and Molecular Genetics
Political Science (M.A. only)
Sociology
Wildlife and Fisheries Ecology
Zoology

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

160 Graduate College
Food Science

Animal Science
Professor and Head Donald G. Wagner, Ph.D.

Biochemistry
Professor and Head James B. Blair, Ph.D.

Microbiology and Molecular Genetics
Professor and Head Robert V. Miller, Ph.D.

Nutritional Sciences
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, biochemistry, dairy science, food science, human nutrition, microbiology or poultry science. 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.

The natural and applied sciences program has four areas: natural sciences, aviation and space sciences, gerontology, and interdisciplinary sciences. A bulletin describing each and the corresponding curriculum is available from the Graduate College.

Application to the Program. A faculty advisory committee, in conjunction with the program coordinator, will evaluate applications for admission. A student seeking admission to the program must submit the following material to the program director:
1. An official Graduate College application for admission;
2. Official transcripts for all college-level courses;
3. A written statement of personal goals and professional objectives to be obtained from the program;
4. Three letters of recommendation describing abilities, interest and motivation of the applicant;
5. All international students must also submit:
   a. A TOEFL score of 550 or greater;
   b. A financial statement of available funds as currently required by OSU.

The student should indicate in the written statement the area in which he or she is interested. However, a formal declaration is not mandatory until the course plan of study is filed at a later date. Additional criteria may be required. Any request for exceptions to the stated criteria should be addressed to the program director.

Graduate Student Committee. Each area has an interdisciplinary faculty advisory committee whose members will assist the student in selecting courses for the plan of study and who will supervise the research component of the degree program. Faculty outside the advisory committee may be selected to assist the student with the research component.

Advisory Committees

Natural Sciences
Herbert Brunear, Zoology
Margaret Ewing, Zoology
Andrea Arquitt, Nutritional Sciences

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, Political Science

Gerontology
Ed Arquitt, Sociology

Joe Weber, Family Relations and Child Development

Gladeen Allred, Applied Behavioral Studies

Robert Nolan, Occupational and Adult Education

Nancy Monroe, Speech Pathology

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. 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-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 vary.

Gerontology. In addition to the general admission criteria, students in gerontology must meet three conditions to be eligible for admission:
1. Overall grade-point average of at least 3.00.
2. GRE score with a 900 minimum score (total verbal and quantitative) or an MAT score of at least 35.
3. A minimum GPA of 3.00 is required for unqualified admission. 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.

Interdisciplinary Sciences. This program is for students who desire to increase their competence in a particular thematic area by taking a series of courses in several disciplines. This multidisciplinary approach provides educational opportunities for a variety of careers.

This program offers three choices in obtaining the master's degree: (1) a 30-credit-hour program including six hours for a thesis; (2) a 32-credit-hour program including a creative component, which may be a special research report, an annotated bibliography, a project in research or design, or other creative activity; and (3) a 32-credit-hour program, including two credit hours for a report. The advisory committee must approve the plan under which the student will pursue the degree.

Interdisciplinary sciences consists of no fewer than three separate fields of study with at least six hours in each field. No more than 15 hours may be taken in any one area. The advisory committee will assist the student in formulating the plan of study.

Financial Assistance. In-state fee waiver scholarships are available on a limited basis for eligible students. Interested students should contact the program director in the Graduate College. Eligibility criteria include Oklahoma residency, enrollment in residence credit hours, admission into the program, and successful completion of the ACT/FFS Needs Analysis form for the academic year in which the student is seeking aid. The ACT/FFS packets are available in the Office of Student Financial Aid, 110 Hanner Hall.

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.

Jointly sponsored by the schools of Electrical and Computer Engineering, Industrial Engineering and Management, and Mechanical and Aerospace Engineering, this program 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 and Management.

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 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 high-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 and Admissions.

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 nongraduate-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 stu-
dent 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 re-
ceiving 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 de-
gree or fails to remain in good standing
academically, academic participation
may be terminated or the status may
be changed to probationary or unclas-
sified.

Special Student Status. An applicant
may be admitted to the Graduate Col-
lege as a special student if he or she
does not have immediate plans to be-
come a degree candidate 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 rec-
ommended 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. As such work is not guided by a plan
of study or approved by an adviser,
no more than nine semester credit
hours of course work taken while a
special student may be used on a
plan of study to meet requirements for
a degree.

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 Gen Sub</th>
<th>GMAT Analogy (MAT)</th>
<th>Additional Requirements</th>
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</thead>
</table>
| AGRICULTURAL SCIENCES AND
NATURAL RESOURCES | | | | |
| Agricultural Economics | MS, PhD | | | No entrance exam. |
| Agricultural Education | MS, EdD EdD | | | No entrance exam. |
| Agriculture | MA | | | No entrance exam. |
| (Agricultural Economics,
Agricultural Education,
Agronomy, Animal Science,
Entomology, Forest
Resources, Horticulture,
& Landscape Architecture,
& Plant Pathology) | | | | |
| Agronomy | MS | | | No entrance exam. |
| Crop Science | PhD | | | No entrance exam. |
| Soil Science | PhD | | | No entrance exam. |
| Animal Science | MS | | | No entrance exam. |
| Animal Breeding | PhD | | | No entrance exam. |
| Animal Nutrition | PhD | | | No entrance exam. |
| Dairy Science | MS | | | No entrance exam. |
| Poultry Science | MS | | | No entrance exam. |
| Biochemistry | MS, PhD 1 2 | | | American Chemical Soci-
ety exams in chemistry. |
| Entomology | MS, PhD 2 2 | | | No entrance exam. |
| Forest Resources | MS | | | No entrance exam. |
| Horticulture | MS, PhD 1 2 | | | No minimum score. |
| Plant Pathology | MS, PhD 1 2 | | | |
| ARTS AND SCIENCES | | | | |
| Botany | MS, PhD 1 2 | | | No minimum score. |
| Chemistry | MS, PhD 2 2 2 | | | Entrance exams. |
| Computer Science | MS 1 2 | | | MS: 75 percentile minimum mathematical aptitude. |
| | PhD 1 1 | | | PhD: 75 percentile minimum mathematical aptitude; 50
percent minimum advanced. |
| English | MA, PhD | | | No entrance exam. |
| Geography | MS 2 | | | No entrance exam. |
| Geology | MS 1 2 | | | No entrance exam. |
| History | MA 1 1 | | | No minimum score. |
| | PhD 1 1 | | | See department admission
requirements. |
| Mass Communications | MS | | | No entrance exam. |
| Mathematics | MS, PhD | | | No entrance exam. |
| Applied Mathematics | MS | | | No entrance exam. |
| Microbiology | MS, PhD 1 | | | No entrance exam. |
| Philosophy | MA 2 2 | | | No entrance exam. |
| Physics | MS, PhD 2 2 | | | No entrance exam. |
| Political Science | MA 1 | | | No entrance exam. |
| Psychology | PhD 1 | | | No entrance exam. |
| Sociology | MS, PhD 2 | | | No entrance exam. |
| Corrections | MS 2 | | | No entrance exam. |
| Speech | MA 2 | | | No entrance exam. |
| (Speech and Language
Pathology and Audiology) | | | | |
| (Speech and Language
Pathology and Audiology) | | | | |
| (Theater) | | | | |
| Statistics | MS, PhD | | | No entrance exam. |
| Wildlife and Fisheries Ecology | MS, PhD 1 1 | | | No entrance exam. |
| Zoology | MS, PhD 1 1 | | | Advanced: MS-600, PhD-650. |
| Same as Wildlife and Fisheries
Ecology. | | | | |
## Major | Degree | GRE Gen Sub | GMAT Analogy (MAT) | Additional Requirements
--- | --- | --- | --- | ---
**BUSINESS ADMINISTRATION**  
Accounting | MS |  |  | GPA 3.25 or higher and GMAT score of minimum 525. 3 letters of recommendation and an essay.
Business Administration | MBA |  |  | GMAT required, high GPA, & 3 letters of recommendation. 3 letters of recommendation. 3 letters of recommendation.
Business Administration emphasis in: (Accounting) (Finance) (Management) (Marketing) | PhD |  |  | See specific school admission requirements.
**ECONOMICS** | MS, PhD |  |  | No entrance exam. See specific school admission requirements.
**EDUCATION**  
Applied Behavioral Studies | MS, PhD, EdD | 3 | 3 | No entrance exam. GRE: 950, MAT: 47. No minimum score.
Counseling and Student Personnel | MS, EdD, EdS | 3 | 3 | GRE: 950, MAT: 47. MS: no entrance exam. EdD & EdD: MAT or GRE.
Curriculum and Instruction | MS, EdD, EdS | 1 |  | No entrance exam.
Economics | MS, EdD, EdS | 3 | 3 | See specific school admission requirements.
Educational Administration | MS, EdD, EdS | 3 | 3 | No entrance exam. GRE: 950, MAT: 47.
Health, Physical Education and Leisure | MS | 1 |  | No entrance exam.
Higher Education | MS, EdD, EdS | 3 | 3 | No entrance exam.
Occupational and Adult Education | MS, EdD, EdS | 3 | 3 | No entrance exam.
Marketing Education | MS |  |  | No entrance exam.
Technical Education | MS |  |  | No entrance exam.
Technology Education | MS |  |  | No entrance exam.
Trade & Industrial Education | MS |  |  | No entrance exam.
**ENGINEERING, ARCHITECTURE AND TECHNOLOGY**  
Agricultural Engineering | MAgE, MS, PhD |  |  | No entrance exam. See specific school admission requirements.
Architecture | MArch |  |  | No entrance exam. See specific school admission requirements.
Architectural Engineering | MArchE |  |  | No entrance exam. See specific school admission requirements.
Chemical Engineering | MChemE, MS, PhD | 2 | 2 | No entrance exam.
Civil Engineering | MCivilE, MS, PhD | 2 | 2 | No entrance exam.
Environmental Engineering | MEnvirE, MS | 2 | 2 | No entrance exam.
Electrical Engineering | MEEecE, MS, PhD | 2 | 2 | No entrance exam.
General Engineering | MGenE, MS, PhD | 2 | 2 | No entrance exam.
Industrial Engineering | MIE&Mgmt, MS, PhD | 2 | 2 | No entrance exam.
Mechanical Engineering | MMechE, MS, PhD | 2 | 2 | No entrance exam.
**COLLEGE OF HUMAN ENVIRONMENTAL SCIENCES**  
Design, Housing and Merchandising | MS |  |  | No entrance exam.
Family Relations and Child Development | MS | 1 (for FRCD 3 emphasis) |  | No entrance exam for other areas.
Food, Nutrition and Institution Administration | MS | 1 (for FRCD 3 emphasis) |  | No entrance exam for other areas.
Home Economics (Design, Housing and Merchandising; Family Relations and Child Development; Food, Nutrition, and Institution Administration) | PhD | 1 (for FRCD 3 emphasis) |  | 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 Manufacturing Systems Engineering | MS, PhD |  |  | No entrance exam.
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 Ph.D. GPA last 60 hrs. x General score on GRE must equal 3000 or above for unqualified admission.
Veterinary Parasitology | MS, PhD | 1 | 1 | GPA last 60 hrs. x GRE must equal 3000 or above for unqualified admission.
Veterinary Pathology | MS, PhD | 1 | 1 | No minimum score.

### 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 may be 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 advisor 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 and 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 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 reapply for admission. A student who interrupts enrollment for one year must reapply 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 professor 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.

A student who has established a permanent record at OSU may have the audited course recorded on his or her transcript with "AU" 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 form 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 1-800-227-GRAD.

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.

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 professor or above.

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.

Any graduate student holding an assistantship or fellowship must enroll in at least six resident semester credit hours during the fall and spring semesters and at least three resident semester credit hours for each summer session.

If a graduate assistant enrolls in more credit hours than allowed for percentage of time employed, a petition for excessive hours, available in the Graduate College, must be completed and returned to the Graduate College for approval.

### Employment-Enrollment

<table>
<thead>
<tr>
<th>If Employed:</th>
<th>Petition to take:</th>
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<tbody>
<tr>
<td>Fall/Spring</td>
<td>Summer</td>
</tr>
<tr>
<td>100% or</td>
<td>more than</td>
</tr>
<tr>
<td>full time</td>
<td>more than</td>
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<tr>
<td>75% or</td>
<td>more than</td>
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<tr>
<td>3/4 time</td>
<td>more than</td>
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<tr>
<td>60%</td>
<td>more than</td>
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<tr>
<td>8</td>
<td>more than</td>
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<tr>
<td>50% or</td>
<td>more than</td>
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<tr>
<td>1/2 time</td>
<td>more than</td>
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<tr>
<td>30-40%</td>
<td>more than</td>
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<tr>
<td>12 hours</td>
<td>more than</td>
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<tr>
<td>25% or</td>
<td>more than</td>
</tr>
<tr>
<td>1/4 time</td>
<td>more than</td>
</tr>
</tbody>
</table>

### 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.

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 department graduate 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 the degree program. Departments have requested continuance for unusual circumstances (i.e. a death in the family or illness).

A second violation of strict academic probation can also be assigned in a course identified as the creative component portion of a master's degree. Each department in which a creative component is an option has identified one class in which "R" may be assigned if more than one semester is required to complete the creative component. Upon completion of the creative component, the adviser submits a Change of Grade form to have the final grade entered.

The "R" grade can also be assigned in a course identified as the creative component portion of a master's degree. Each department in which a creative component is an option has identified one class in which "R" may be assigned if more than one semester is required to complete the creative component. Upon completion of the creative component, the adviser submits a Change of Grade form to have the final grade entered.

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 adviser 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 at 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" or contact the Office of the Provost and Vice-President for Academic Affairs 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
Agriculture, 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
Business Administration, MBA
Chemical Engineering, MChemE, MS
Chemistry, MS
Civil Engineering, MCivilE, MS
Computer Science, MS
Corrections, MS
Counseling and Student Personnel, MS
Curriculum and Instruction, MS
Dairy Science, MS
Design, Housing and Merchandising, MS
Economics, MS
Educational Administration, MS
Electrical Engineering, MEIecE, MS
English, MA
Entomology, MS
Environmental Engineering, MEnvirE, MS
Environmental Science, MS
Family Relations and Child Development, MS
Food, Nutrition and Institution Administration, MS
Food Science, MS
Forest Resources, MS
General Engineering, MGenE, MS
Geography, MS
Geology, MS
Health, Physical Education and Leisure, MS
Higher Education, MS
History, MA
Home Economics Education and Community Services, MS
Horticulture, MS
Industrial Engineering and Management, MIE&Mgmt, MS
Manufacturing Systems Engineering, MMSE
Marketing Education, MS
Mass Communications, MS
Mathematics, MS
Mechanical Engineering, MMechE, MS
Microbiology, MS
Natural and Applied Sciences, MS
Occupational and Adult Education, MS
Philosophy, MA
Physics, MS
Physiological Science, MS
Plant Pathology, MS
Political Science, MA
Poultry Science, MS
Psychology, MS
Sociology, MS
Speech, MA (Speech Communication; Speech and Language Pathology and Audiology; Theater)
Statistics, MS
Technical Education, MS
Technology Education, MS
Trade and Industrial Education, MS
Veterinary Parasitology, MS
Veterinary Pathology, MS
Wildlife and Fisheries Ecology, MS
Zoology, MS

Abbreviations:

MA Master of Arts
MAgE Master of Agricultural Engineering
MAg 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
MEIecE 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
MMechE Master of Mechanical Engineering
MS Master of Science

Admission to a Program. Some departments require that any student seeking a master's degree take an examination (e.g. GRE, GMAT) before being admitted to a program of study. See the table on "Graduate Admission Requirements" or contact the head of the major department.

Basic Requirements. The master's degree may be earned by one of three plans:

Plan I-with thesis, 30 credit hours, including six credit hours for the thesis;
Plan II-with report, 32 credit hours, including two credit hours for the report;
Plan III-with no thesis or report, 32 credit hours of course work including the creative component. The Plan III program must contain a creative component which is explicitly identified on the plan of study. For example, the creative element may be a special report, an annotated bibliography, a project in research or design, or other creative activity.

The number of credits specified for each plan are minimums set by the Graduate College. Departmental requirements may exceed these.

The major department, with the approval of the dean of the Graduate College, decides which alternatives are open to the candidates. Some departments also require a minimum number of semester credit hours of upper-division and graduate courses in the major field, including courses taken as an undergraduate.

Residence Requirements. Candidates for a master's degree must complete a minimum of 21 semester credit hours in residence if they follow Plan I, or 23 semester credit hours if they follow Plan II or III. The exception is that with the written recommendation of the head of the major department, the dean of the Graduate College may authorize the thesis or report to be prepared in absentia and the credit counted toward meeting the residence requirement. When this option is utilized, the student must register at the beginning of a semester and conduct the study or research under the direction of a member of the graduate faculty of the appropriate department.

Students taking courses at Graduate Centers may decrease the residence requirements to 16 semester credit hours if they have study plans approved in advance by the major department and the dean of the Graduate College.

Nine semester credit hours of the 30 or 32 required for the degree may be completed: (1) by residence courses taken at an accredited college or university, (2) by extension or in-service courses from Oklahoma State University or from another accredited institution, or (3) by a combination of these methods. Students may petition the dean for exceptions and deviations. Courses taken in Stillwater through the OSU extension program are not considered as residence credit.
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 another location is approved by the head of the major department and the dean of the Graduate College.

Advisement. The student should go to the department head, who may assign an adviser or advisory committee to assist the student in planning and pursuing the entire program for a degree. The advisory committee must include a minimum of three members of the Graduate Faculty.

Level of Courses Applied to Graduate Degree. 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.

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. The student should go to Advisement for the major department and the dean of 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

### Summary of Procedure for Master's Degree

<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 “Requirements for Admission to Teacher Education” in the “College of Education.”)</td>
<td>Dean</td>
<td>GCO</td>
<td>Complete 30 days prior enrollment. (60 days prior for international students.)</td>
</tr>
<tr>
<td>2. Read “General Regulations” and “Master’s Degree” 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 major department head and enroll for the first semester.</td>
<td>DH &amp; TA Dean</td>
<td></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>Dean</td>
<td></td>
<td>Prior to enrolling for the 17th credit hour 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 session in which the degree is to be conferred. (Application is good for stated degree date only. File new application if conflicting 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, Adviser 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 must sign the copy submitted to the Graduate College.</td>
<td>Dean</td>
<td>Deadlines published yearly.</td>
<td></td>
</tr>
</tbody>
</table>
Procedure | Initiate through | Approved by | Time
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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). | Comm | Dean | 
10. Committee chairperson notifies Graduate College of the examination results immediately following conclusion of the examination (Form T-2). | Adviser | Deadlines published yearly. | Dean |
11. Make any 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 the abstract or one copy of a report 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. | Adviser | Deadlines published yearly. | Dean |
12. Pay binding fee in the Office of the Bursar and return form to the Graduate College. GCO | Form to be obtained from the Graduate College after the thesis has been formally accepted by that office. |
13. Arrange for cap, gown and hood at Student Union Bookstore and attend Commencement.
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 andconcurs 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").

Human Subjects and Research. Oklahoma State University follows federal guidelines which require a review of any research involving human subjects. All such research must be approved by the Institutional Review Board (IRB) before human subjects are involved. Guidelines on how to obtain permission to use human subjects in research are available from the departmental graduate coordinator or the executive secretary of the IRB, the Graduate College, or Office of the Vice-President for Research. The information provides examples of activities subject to careful review and those which are easily approved.

Because University policy requires prior approval of all research involving human subjects, the letter from the IRB granting approval of the research must be included in the appendix of any thesis or dissertation submitted to the Graduate College in fulfillment of degree objectives. Failure to obtain approval for use of human subjects means that the thesis or dissertation cannot be accepted.

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 Parasitology
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 must 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 15 hours of 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 is to 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 by degree-granting departments or programs. In many fields, a reading knowledge of one or two modern foreign languages is an important part of scholarship and necessary for research. In other fields, proficiency in special and related disciplines may be required that will contribute to the needs of the individual program.

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### 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 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 a temporary adviser from major department head and enroll.</td>
<td>DH &amp; TA</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>Dean</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</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>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</td>
<td></td>
</tr>
<tr>
<td>7. Fulfill foreign language requirement or attain other required proficiencies.</td>
<td>Comm</td>
<td>Prior to qualifying examination.</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>Comm</td>
<td>Prior to qualifying examination.</td>
</tr>
<tr>
<td>9. Apply for and take qualifying examination.</td>
<td>Ch</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</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</td>
<td>At the beginning of the semester or summer session in which degree is to be conferred.</td>
</tr>
<tr>
<td>Procedure</td>
<td>Initiate through</td>
<td>Time</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
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<td>-------------------------------------------</td>
</tr>
<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 the 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, Comm, 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 Graduate College 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 the Office of the Bursar; complete questionnaire and microfilming agreement form and return all forms to the Graduate College.</td>
<td>Form to be obtained from the Graduate College after dissertation has been formally accepted by that office.</td>
<td></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>
Human Subjects and Research. Oklahoma State University follows federal guidelines which require a review of any research involving human subjects. All such research must be approved by the Institutional Review Board (IRB) before human subjects are involved. Guidelines on how to obtain permission to use human subjects in research are available from the departmental graduate coordinator or the executive secretary of the IRB, the Graduate College, or Office of the Vice-President for Research. The information provides examples of activities subject to careful review and those which are easily approved.

Because University policy requires prior approval of all research involving human subjects, the letter from the IRB granting approval of the research must be included in the appendix of any thesis or dissertation submitted to the Graduate College in fulfillment of degree objectives. Failure to obtain approval for use of human subjects means that the thesis or dissertation cannot be accepted.

Final Examination. 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 committee, indicating each has received the dissertation and concurs in the request to administer the final examination. The chairperson also uses Form T-1 to propose a specific time and place for the examination.

The final examination is primarily a defense of the dissertation. If the defense is judged inadequate, a re-examination decision will be made by the examining committee. The examination is 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 any changes required by the committee and by the Graduate College and submit the dissertation in final form signed by the committee to the Graduate College.

Three copies of the dissertation in final form and six copies of the abstract must be submitted to the Graduate College no later than the stated deadline (see "Graduate College Calendar"). The final copies of the dissertation are accompanied by Form T-3. The dissertation 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.

All dissertations are microfilmed by University Microfilms, Inc. The student is required to pay a fee for microfilming the complete document and for publication of an abstract of about 350 words. The student must complete a University Microfilms Agreement Form after the dissertation has been accepted by the Graduate College. Copyrighting the dissertation is not required, but can be done at a small additional cost with the approval of the dean of the Graduate College.

Time Limit. Students are expected to complete the requirements of the Ph.D. degree within six years after filing a Notice of Intention. (The Notice of Intention is filed during the first semester of the doctoral program.) After that time a new program of study must be arranged with the advisory committee and filed in the Graduate College.

If all requirements for the degree are not completed within four years after the qualifying examination was passed, a second qualifying examination must be repeated successfully.

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 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 of the Graduate College and the department in effect at the time of readmission must be completed.

Doctor of Education Degree Programs (Ed.D.)

Agricultural Education
Applied Behavioral Studies
Counseling and Student Personnel
Curriculum and Instruction
Educational Administration
Higher Education
Home Economics Education and Community Services
Occupational and Adult Education

The degree of Doctor of Education is a professional degree conferred in recognition of outstanding ability as an educator in some special field or fields as shown by: (1) satisfactory completion of a program of study; (2) passing examinations showing an understanding of the field of specialization and its relationship to allied subjects; (3) the preparation of a dissertation demonstrating ability to approach problems with a high degree of originality and independence; and (4) passing an examination covering the dissertation and related fields.

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 by letter 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.

The plan of study is to 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.

Character of Work. Completing a number of courses with a "B" average (see "General Regulations") is one of the requirements for the doctoral 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 field or department.

Residence Requirements. A minimum of 30 semester credit hours must be taken in residence at Oklahoma State University. One academic year of the last two, as determined by the appropriate department, must be spent in continuous residence at this institution.

The residence requirement can be met by two semesters of full-time graduate study. Any other way of meeting the residence requirement must have the approval of the student's advisory committee and of the dean of the Graduate College.

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.

Foreign Language and Research Instruments Proficiency. All candidates will be expected to have a command of the foreign languages necessary in the study of educational problems. The doctoral advisory committee of each candidate may require evidence of proficiency in one or more foreign languages, educational research, statistics, and computer usage.

Qualifying Examination. Before taking the qualifying examination, the student must have completed the main areas in a plan of study which has been approved by the advisory committee, have permission of the dean of the Graduate College to take the qualifying examination, have the approval of his or her advisory committee, and have an approved outline for the dissertation on file in the Graduate College and in the office of the department concerned.

The qualifying examination is designed to measure the student's proficiency in the field of specialization, the breadth and depth of his or her professional education background and his or her knowledge of cognate subjects. The examination may be both written and oral but part of it must be written. This examination must be passed and the result reported to the Graduate College on Form G-4 at least six months before the degree is granted (see "Admission to Candidacy" in the "Doctor of Philosophy" section).

In case of failure to pass this examination, the student will be notified by the examining committee of the condition under which another examination may be taken. A student who fails on either the qualifying or final examination cannot take another examination for four months. If the result of the second examination is unsatisfactory, no other examination may be given without the approval of the Graduate Council.

Dissertation. A dissertation (doctoral thesis) is required of each candidate for the Doctor of Education degree. The dissertation has three principal functions: (1) training in research, (2) promoting professional growth, and (3) contributing to professional knowledge in education. Not every dissertation will be expected to serve these three functions in the same way or to the same extent.

The format specifications, procedures, and regulations for the dissertation are the same as for the Ph.D. The Ed.D. candidate should refer to the "Doctor of Philosophy" section on dissertations and submission procedures through the Graduate College.

Human Subjects and Research. Oklahoma State University follows federal guidelines which require a review of any research involving human subjects. All such research must be approved by the Institutional Review Board (IRB) before human subjects are involved. Guidelines on how to obtain permission to use human subjects in research are available from the departmental graduate coordinator or the executive secretary of the IRB, the Graduate College, or Office of the Vice-President for Research. The information provides examples of activities subject to careful review and those which are easily approved.

Because University policy requires prior approval of all research involving human subjects, the letter from the IRB granting approval of the research must be included in the appendix of any thesis or dissertation submitted to the Graduate College in fulfillment of degree objectives. Failure to obtain approval for use of human subjects means that the thesis or dissertation cannot be accepted.

Time Limit. Students are expected to complete the requirements for the Doctor of Education degree within six years after
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. A temporary adviser will guide the student through 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-semesters 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 head of the department in which he 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.

Credit-hour Requirements. A minimum of two academic years of full-time graduate study or equivalent (a minimum of 60 semester credit hours beyond the baccalaureate degree), is required for the Specialist in Education degree. This may include as many as 10 credit hours for the practicum study and accompanying report.

Character of Work. Completing an appropriate number of courses with a "B" average (see "General Regulations") is only one of the requirements for this degree. The student must also: (1) pass a qualifying examination, (2) conduct an appropriate study of education, (3) show qualities of professional leadership, and (4) pass a final examination.

Residence Requirements. The candidate must be enrolled full-time in residence study for one academic year of the two years required for the degree. Two summer sessions are considered equivalent to one semester for purposes of meeting the residence requirement.

Ordinarily the last 20 hours, including the study and report, must be earned in residence on the Stillwater campus of Oklahoma State University. Any deviation must be recommended by the advisory committee and approved by the dean of the Graduate College.

Qualifying Examination. A qualifying examination is required of all candidates for the Specialist in Education degree. Conditions governing it are essentially similar to those required for candidates for the Ed.D. (see "Doctor of Education" section).

Other Regulations. Other requirements for the Specialist in Education degree are similar to those for the Ed.D. (see "Doctor of Education section").

Time Limit. The time limits applicable to candidates for the Specialist in Education degree are the same as those which apply to the Ed.D. candidate.
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 means that these two coincided. Dates in parentheses represent periods not at OSU.

Members

MOHAMED ABDDEL-HADY, 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); 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, B.A. (Univ. of Missouri), M.A. (ibid), Ed.D. (ibid); Regents Professor of Curriculum and Instruction; 1980, 1969.

ZUHAIR F. AL-SHAIEB, B.S. (Damascus Univ.), M.S. (Univ. of Missouri, Rolla), Ph.D. (ibid); Professor and Head of the Department of Geology; 1991, 1972.

H. JACK ALLISON, B.S. (Louisiana State Univ.), M.S. (ibid), Ph.D. (O.S.U.); P.E.; Professor of Electrical and Computer Engineering; 1976, 1961.

DALE E. ALSPACH, B.S. (Univ. of Akron), Ph.D. (Ohio State Univ.); Regents and Southwestern Bell Professor of Mathematics; 1990, 1979.

ORLEY M. AMOS, JR., B.A. (Wichita State Univ.), M.S. (Iowa State Univ.), Ph.D. (ibid); Professor of Economics; 1988, 1979.

JEFFREY ANDERSON, B.A. (Rutgers Univ.), Ph.D. (Univ. of Florida); Associate Professor of Horticulture and Landscape Architecture; 1991, 1986.

KIM B. ANDERSON, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Professor of Agricultural Economics; 1990, 1982.

MICHAEL APPLLEGATE, B.A. (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.

GEORGE EDWARD ARQUITT, B.A. (Union Univ.), M.S. (Univ. of Tennessee), Ph.D. (ibid); Associate Professor and Head of the Department of Sociology; 1990, 1970.

RICHARD ARTHUR AUKERMAN, B.S. (Univ. of North Dakota), M.S. (ibid), Ph.D. (ibid); Professor of Management; 1987, 1980.

LINDA AUSTIN, B.A. (State Univ. of New York, Stony Brook), M.S. (Univ. of Illinois), M.A. (Univ. of Rochester), Ph.D. (ibid); Associate Professor of English; 1990, 1985.


GUY BAILEY, B.A. (Univ. of Alabama); M.S. (ibid); 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, College of Business Administration; 1977, 1967.

JOHN A. BANTLE, B.A. (Eastern Michigan Univ.), M.S. (ibid), Ph.D. (Ohio State Univ.); Professor of Zoology and Associate Dean for Research, College of Arts and Sciences; 1991, 1976.


DANIEL P. BARTLETT, 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 and Assistant Dean, College of Agricultural Sciences and Natural Resources; 1988, 1985.

RICHARD P. BATTEIGER, B.A. (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.Ch.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, B.A. (Carroll College), Ph.D. (Univ. of Nebraska); Professor of Entomology; 1980, 1971.

KENNETH DARRELL BERLIN, B.A. (North Central College, Illinois), Ph.D. (Univ. of Illinois); Regents Professor of Chemistry; 1971, 1960.

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RALEIGH A. JOBES, B.S. (O.S.U.), M.S.
BILL J. JOHNSON, D.V.M. (O.S.U.), Diplomate
MARK E. JOHNSON, B.A. (Univ. of California, Santa Barbara), M.A. (ibid), Ph.D. (ibid);
EDWARD JONES, B.A. (Central Connecticut);
H. JON JONES, B.A. (Thiel College), M.A. (Ball State Univ.), Ed.D. (ibid); Assistant Professor of
JERRY J. JORDAN, B.S. (Central State Univ.), M.S. (Univ. of Oklahoma), Ed.D. (Temple
MANUNATH KAMATH, B. Tech. (Indian Inst. of Technology, Madras), M.E. (Indian Inst. of
JUDITH S. KAUFMAN, B.A. (Clark Univ.); Ph.D. (State University of New York, Albany); Assistant Professor of Applied Behavioral Studies; 1991.
PHILIP KENKEL, B.S. (Univ. of Kentucky), M.B.A. (ibid), Ph.D. (ibid); Assistant Professor of Agricultural Economics; 1990.
SARAH DRUMMOND KIRBY, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Assistant Professor of Design, Housing and Merchandising; 1991, 1985.
KENNETH J. KISER, B.A. (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.), M.Arch. (Univ. of Illinois); Professor and Head of the School of Architecture; 1990, 1979.
NORMA SUE KNIGHT, B.S. (O.S.U.), M.S. (ibid), Ph.D. (ibid); Associate Professor of Nutritional Sciences; 1987, 1980.
EDWARD T. KNOBBE, B.S. (Univ. of California, Los Angeles), M.S. (ibid), Ph.D. (ibid); Professor of Chemistry; 1990.
STEPHEN ROBERT KOONTZ, B.S. (Virginia Polytechnic Institute and State Univ.), M.S. (ibid), Ph.D. (Univ. of Illinois); Assistant Professor of Agricultural Economics; 1989.
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 Nutritional Sciences; 1979, 1970.
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. (Univ. of Arizona), Ph.D. (ibid); Associate Professor of Zoology; 1980, 1979, 1977, 1975.
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JOSEPH P. McCANN, B.Sc. (Edinburgh Univ., Scotland), M.S. (Cornell Univ.), Ph.D. (ibid); Assistant Professor of Physiological Science; 1987.

MARK W. McCONNELL, B.A. (Harvard Univ.), Ph.D. (Brown Univ.); Assistant Professor of Mathematics; 1990.

JERRY MICHAEL McCoy, B.M. (Univ. of Texas, Arlington), M.M. (Univ. of Texas, Austin), D.M.A. (ibid); Professor of Music; 1989, 1984.


TIPTON F. MCCUBBINS, B.S. (O.S.U.), M.Ed. (Oklahoma State Univ.); Associate Professor of Administrative Services; 1991.

DAN V. McINTOSH, B.A. (Hanover College), M.A. (Ball State Univ.), Ph.D. (ibid); Assistant Professor of Applied Behavioral Studies; 1990.

JEFF McQUALLEN, B.S. (Lockhaven State College), M.A. (Univ. of Oklahoma), Ph.D. (ibid); Assistant Professor of Speech Communication; 1988.

WILLIAM F. McTERNAN, B.S. (Univ. of Wyoming), M.S. (ibid), Ph.D. (Virginia Polytechnic Inst. and State Univ.); Professor of Civil Engineering; 1990, 1985.

WILLIAM DAVID MILLER, B.S. (California Inst. of Technology), M.S. (Univ. of Southern California), Ph.D. (Kansas State Univ.); Assistant Professor of Computer Science; 1989, 1988.

EDUARDO A. MISAWA, B.S. (Univ. of Sao Paulo), M.S. (ibid), Ph.D. (Massachusetts Inst. of Technology); Assistant Professor of Mechanical and Aerospace Engineering; 1990.

JOSEPH P. MISSALL, B.M. (Michigan State Univ.), M.M. (Univ. of Cincinnati), D.M.A. (Univ. of Colorado); Associate Professor of Music; 1989, 1986.

CAROL LYNN MODER, B.A. (State Univ. of New York, Geneseo), M.A. (State Univ. of New York, Buffalo), Ph.D. (ibid); Associate Professor of English; 1991, 1986.

KOUIDER MOKHTARI, B.A. (Univ. of Morocco), M.A. (Ohio Univ.), Ph.D. (ibid); Assistant Professor of Curriculum and Instruction; 1991.

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DIANE M. MONTGOMERY, B.S. (Univ. of Minnesota), M.A.T. (Western New Mexico Univ.), Ph.D. (Univ. of New Mexico); Assistant Professor of Applied Behavioral Studies; 1990, 1989.

GREGOR L. MORGAN, B.V.Sc. (Massey Univ.), M.V.Sc. (ibid), Ph.D. (O.S.U.); Associate Professor of Veterinary Medicine and Surgery; 1980.

SHERYL J. MORGAN, B.Sc. (Kansas State Univ.), D.V.M. (ibid), Ph.D. (Texas A & M Univ.); Assistant Professor of Veterinary Pathology 1987.
JAMES ROGERS, B.B.A. (Univ. of Georgia), J. RONALD SHOLAR, B.S. (Univ. of Tennessee)
RAY E. SANDERS, B.S. (O.S.U.), M.S. (ibid), MICHAEL D. SMOLEN, B.S. (Univ. of Rochester)
of Health, Physical Education and Leisure;
ALAIN SAINT-SAENS, Licence (Univ. of Paris);
JOHN S. C. ROMANS, B.S. (Iowa State Univ.), M.A. (Univ. of Iowa), Ph.D. (Univ. of Kansas);
Richard CARLTON ROHRS, B.A. (Bucknell Univ.), M.A. (Univ. of Nebraska), WALTER GAYLORD SCOTT, B.A. (Baylor Univ.), M.S. (ibid), 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);
Professor of Family Relations and Child Development 1990.
JAMES ROGERS, B.B.A. (Univ. of Georgia), M.S. (San Francisco State Univ.), Ph.D. (Univ. of Utah);
Professor of Health, Physical Education and Leisure, and Wellness Director, 1979, 1974.
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Assistant Professor of History, 1982, 1976.
JOHN S. C. ROMANS, B.S. (Iowa State Univ.), M.A. (Univ. of Iowa), Ph.D. (Univ. of Kansas);
Assistant Professor of Applied Behavioral Studies; 1990.
ALAIN SAINT-SAENS, Licence (Univ. of Strasbourg); Masters (ibid), Ph.D. (Univ. of Toulouse);
Assistant Professor of History; 1991.
MANSUR SAMADZADEH, B.S. (Sharif Univ. of Tech.), M.S. (Univ. of Southwestern Louisiana), Ph.D. (ibid);
Assistant Professor of Computer Science; 1988, 1987.
RAY E. SANDERS, B.S. (O.S.U.), M.S. (ibid), Ed.D. (ibid);
Assistant Professor of Occupational and Adult Education and Director of Research, College of Education; 1988, 1985.
SAHABED SARKAR, B.Stat. (Indian Statistical Institute, Calcutta), M.Stat. (ibid), Ph.D. (Iowa State Univ.);
Assistant Professor of Statistics; 1990.
GEORGE M. SCHEETS, B.S. (U.S. Military Academy), M.S. (Kansas State Univ.), Ph.D. (ibid);
Assistant Professor of Electrical and Computer Engineering; 1987.
MICHAEL ALLEN SCHNELLE, B.S. (Kansas State Univ.), M.S. (ibid), Ph.D. (Colorado State Univ.);
Assistant Professor of Horticulture and Landscape Architecture; 1989.
DAVID C. SCHRADER, B.A. (Bethel College), M.A. (Indiana Univ.), Ph.D. (ibid);
Assistant Professor of Speech Communication; 1991.
DOROTHY L. SCHRADER, B.A. (Agnes Scott College), M.A. (Middlebury College), Ph.D. (Florida State Univ.), Licence-es-lettres (Univ. de Paris III);
Associate Professor of Foreign Languages and Literatures; 1982, 1977.
GRETCHEN E. SCHWARZ, B.A. (Baylor Univ.), M.A. (Univ. of Texas, Arlington), Ph.D. (Univ. of North Texas);
Assistant Professor of Curriculum and Instruction; 1991.

Lemuel D. Groom, B.A. (University of Oklahoma), M.S. (O.S.U.); Associate Professor Emeritus of Journalism and Broadcasting; 1977, 1946.

Werner Gruninger, B.A. (University of British Columbia), M.A. (Duke University), Ph.D. (University of Washington); Professor Emeritus of Sociology; 1985, 1974.

John Edward Hoffman, B.S. (University of Oklahoma), M.A. (ibid); Associate Professor Emeritus of Veterinary Parasitology, Microbiology and Public Health; 1986, 1968.


William M. Kincaid, B.S. (University of Colorado), M.S. (ibid), Ph.D. (University of Texas); Professor Emeritus of Marketing; 1986, 1969.

Daniel Ronald Kroll, A.B. (Michigan State Normal College), A.M. (University of Michigan), Ph.D. (Columbia University); Professor Emeritus of English and Director Emeritus of General Studies; 1975, 1946.

Fred Lecrone, B.S. (O.S.U.), M.S. (Iowa State University); 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. (University of Texas); Professor Emeritus of Food, Nutrition and Institution Administration; 1977, 1945.

George W. A. Mahoney, B.S. (University of Illinois), M.S. (O.S.U.), Ph.D. (ibid); Associate Professor Emeritus of Agricultural Engineering; 1986, 1945.

Virginia Lewis Marsden, B.S. (Central Missouri State College), M.A. (Colorado State College of Education); Associate Professor Emeritus of Education; 1975, 1953.

Glady L. Bobeck Marshall, B.S. (O.S.U.), M.S. (ibid); Assistant Professor Emeritus of Family Relations and Child Development; 1971, 1947 (1939-43).

Evangie McIlon, B.S. (Central State University, Oklahoma), M.T. (ibid), M.Ed. (ibid), Ph.D. (University of Oklahoma); Associate Professor Emeritus of Applied Behavioral Studies; 1989, 1978.

William M. McMurry, B.M.E. (O.S.U.), M.M.E. (University of Oklahoma), Ph.D. (North Texas State University); Associate Professor Emeritus of Music; 1990, 1968.

Course Listings

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.

Those numbered 5000 and above are primarily for graduate students, and 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 Requirement 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 boldface 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.

**Laboratory Hours.** If a course contains a laboratory, the number per week of laboratory hours are stated, e.g., Lab 3.

**Prerequisite(s).** Prerequisites from the same department as the course being described are listed first, with no departmental abbreviation and in increasing numerical order. If from another department, that departmental abbreviation must precede the number of the prerequisite course. Those courses having prerequisites from both within and from outside the department bear combination entries such as 3303 and STAT 2012. Prerequisites are listed in the following manner:

- Prerequisites: A, B or C
- A or B or C is acceptable
- Prerequisites: A, B and C
  - A and B and C are required
- Prerequisites: A, and B or C
  - A and either B or C
- Prerequisites: A and B, or C
  - Both A and B, or C required
- Prerequisites: A, or B and C
  - Either A or both B and C required
- Prerequisites: A or equivalent and B
  - Both A, or the equivalent of A, and B are required
- Prerequisites: A, and B or equivalent
  - Both A and B, or the equivalent of B, are required
- Prerequisites: A and B, or equivalents
  - Equivalents of both A and B are acceptable.

Where no prerequisites are listed for courses numbered 3000 or 4000 level, it is understood that the prerequisite is 60 credit hours of work completed, or 45 credit hours completed with an overall grade-point average of 3.25. The prerequisite for courses numbered 5000 or 6000 level is graduate standing in addition to any other prerequisites listed. Instructors may waive prerequisites when student background justifies. Prior approval of instructor may be required in problems courses, independent study, internships, thesis and dissertation courses, and courses taught in a professional school.

**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

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>A&amp;S</td>
<td>Arts and Sciences</td>
</tr>
<tr>
<td>ABSED</td>
<td>Applied Behavioral Studies</td>
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<tr>
<td>ACCTG</td>
<td>Accounting</td>
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<tr>
<td>AEROS</td>
<td>Aerospace Studies</td>
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<tr>
<td>AG</td>
<td>Agriculture</td>
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<tr>
<td>AGEC</td>
<td>Agricultural Economics</td>
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<td>AGED</td>
<td>Agricultural Education</td>
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<td>AGEN</td>
<td>Agricultural Engineering</td>
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<td>AGRON</td>
<td>Agronomy</td>
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<td>ANSI</td>
<td>Animal Science</td>
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<td>ANTH</td>
<td>Anthropology</td>
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<td>ARCH</td>
<td>Architecture</td>
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<td>ART</td>
<td>Art</td>
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<td>ASTRO</td>
<td>Astronomy</td>
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<td>AVSED</td>
<td>Aviation and Space Education</td>
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<td>BCOMM</td>
<td>Business Communications</td>
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<td>BIOCH</td>
<td>Biochemistry</td>
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<td>BISC</td>
<td>Biological Science</td>
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<td>BOT</td>
<td>Botany</td>
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<td>BUSAD</td>
<td>Business Administration</td>
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<td>BUSED</td>
<td>Business Education</td>
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<td>BUSL</td>
<td>Business Law</td>
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<td>BUSPR</td>
<td>Business Professions</td>
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<td>CHEM</td>
<td>Chemistry</td>
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<td>CHENG</td>
<td>Chemical Engineering</td>
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<td>CHIN</td>
<td>Chinese</td>
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<td>CIED</td>
<td>Curriculum and Instruction Education</td>
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<td>CIVEN</td>
<td>Civil Engineering</td>
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<tr>
<td>COMSC</td>
<td>Computer Science</td>
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<td>CONST</td>
<td>Construction Management Technology</td>
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<tr>
<td>DHM</td>
<td>Design, Housing and Merchandising</td>
</tr>
<tr>
<td>EAHED</td>
<td>Educational Administration and Higher Education</td>
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<td>ECEN</td>
<td>Electrical and Computer Engineering</td>
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<td>ECON</td>
<td>Economics</td>
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<td>ECT</td>
<td>Electronics and Computer Technology</td>
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<td>EDUC</td>
<td>Education</td>
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<td>English</td>
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<td>Engineering</td>
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<td>ENGS</td>
<td>Engineering Science</td>
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<td>ENTO</td>
<td>Entomology</td>
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<td>ENVIR</td>
<td>Environmental Science</td>
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<td>EPT</td>
<td>Electrical Power Technology</td>
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<td>FIN</td>
<td>Finance</td>
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<td>FIRET</td>
<td>Fire Protection and Safety Technology</td>
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<td>FLL</td>
<td>Foreign Languages and Literatures</td>
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<td>FOR</td>
<td>Forestry</td>
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### Accounting (ACCTG)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>2103</td>
<td>Principles of Accounting</td>
<td>Prerequisite: 24 semester credit hours, including ENGL 1113 and MATH 1513 or equivalent. Financial accounting covering the accounting process and principles of accrual accounting.</td>
</tr>
<tr>
<td>2203</td>
<td>Principles of Accounting</td>
<td>Prerequisite: 2103. Managerial accounting concepts and objectives, planning and control of sales and costs, analysis of costs and profits.</td>
</tr>
<tr>
<td>3013</td>
<td>Federal Income Taxation</td>
<td>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.</td>
</tr>
<tr>
<td>3203</td>
<td>Cost Accounting</td>
<td>Prerequisite: 2203 with a grade of &quot;C&quot; or better and STAT 2023. Cost accumulation systems, allocating product costs, planning and controlling costs, standard costing, and profitability analysis.</td>
</tr>
<tr>
<td>3303</td>
<td>Financial Accounting I</td>
<td>Prerequisite: 3013 with a grade of &quot;B&quot; or better. Federal income tax and its relationship to business decision making.</td>
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<tr>
<td>3403</td>
<td>Financial Accounting II</td>
<td>Prerequisite: 3013 with grade of &quot;C&quot; or better. Continuation of financial accounting theory and problems.</td>
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<tr>
<td>3400</td>
<td>Accounting Information Systems</td>
<td>Prerequisite: 3403. Critical study of contemporary accounting. Accounting system design and installation.</td>
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<tr>
<td>4010</td>
<td>Accounting Projects</td>
<td>Prerequisite: 3403, 3603. Auditing theory, procedures and practices.</td>
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<tr>
<td>4013</td>
<td>Advanced Federal Income Taxation</td>
<td>Prerequisite: 3013 with a grade of &quot;B&quot; or better. Federal income tax law applicable to individuals, corporations, partnerships, trusts and estates, and other specialized topics.</td>
</tr>
<tr>
<td>4023</td>
<td>Topics in Management Accounting</td>
<td>Prerequisite: 3403 with grade of &quot;C&quot; or better and MGMT 3223. Integrative course in cost and management accounting; use of accounting information for internal decision making.</td>
</tr>
<tr>
<td>4030</td>
<td>Non-business, Fiduciary and Institutional Accounting</td>
<td>Prerequisite: 3403 with grade of &quot;C&quot; or better. Fund and governmental accounting, bankruptcies, receiviorships, estates and trusts.</td>
</tr>
<tr>
<td>4403</td>
<td>Financial Accounting III</td>
<td>Prerequisite: 3403 with grade of &quot;C&quot; or better. Consolidated statements and other financial accounting topics.</td>
</tr>
</tbody>
</table>
Accounting-based Information Systems. Prerequisites: 18 credit hours of accounting including 4203. Concepts underlying the design and use of an effective accounting information system.

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.

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 candidates seeking the M.S. in accounting degree and not available to students who have credit in 5000.

Research and Thesis. 1-18 credits, maximum 36. Prerequisite: approval of advisory committee. For students working on the doctoral degree.

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.

Seminar in Accounting Research. Prerequisites: Doctoral student status and consent of coordinator of graduate programs in accounting. The theoretical literature and research methodology in accounting.

Aerospace Studies-Air Force (AEROS)

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.


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.

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.

Air Force Leadership and Management I. Lab 1. The study of the fundamental leadership, 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.

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.

Summer Training Unit. Prerequisite: consent of PAS. Practical training on an Air Force base. Junior officer training, familiarization training in most functional aspects of the total Air Force base. Includes career orientation, small arms firing, flight orientation rides, and survival training.

Principles of Economics Applied to Agriculture. Prerequisites: 1114, ACCTG 2103. Production planning with respect to land, labor, capital, and other resources; evaluation and analysis of net worth, cash flow and income statements, including microcomputer applications; financial intermediaries; serving agriculture; procedures for evaluating income taxes, and alternative means of acquiring control of farm resources.

Special Problems in Agricultural Economics. 1-3 credits, maximum 3. Directed study of selected agricultural economics topics.

Agricultural Marketing and Prices. Prerequisites: 3203, 3213 and 3303. Agricultural marketing, with emphasis on systems approach. Economic tools and techniques for making decisions.


International Agricultural Markets, Trade and Development. Prerequisite: 3203 and MATH 1513. Production planning with linear programming and other tools and methods of planning under uncertainty; acquisition of resources and the use of information systems in managing the individual farm-ranch business.

Agricultural Law. Prerequisites: 1114 and junior standing. Survey of legal topics with emphasis on 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. Contemporary 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. Applications of Mathematical Programming. 1-3 credits, maximum 6. Prerequisites: 1114 and STAT 4043. Demand and price structures, price discriminating techniques to agricultural problems.

5003 Thesis or Report in Agricultural Economics. 1-6 credits, maximum 6. For students working for a M.S. degree in agricultural economics. Independent research and thesis under the direction and supervision of a major professor.

5010 Professional Experience in Agricultural Economics. 1-6 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 Agriculture 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.

5102 Teaching Practicum in Agricultural Economics. Lab 4. Prerequisites: two semesters of graduate study in agricultural economics. Philosophies and techniques of teaching, general tasks performed by a teacher, student counseling, test and exercise preparation and grading, and lecture organization, preparation and presentation.

5103 Mathematical Economics. Prerequisites: differential calculus and ECON 3113. Mathematical tools necessary for formulation and application of economic theory and economic models.

5110 Applications of Mathematical Programming. 1-3 credits, maximum 3. The application of concepts and principles of existing linear and nonlinear programming techniques to agricultural problems.

5203 Advanced Agricultural Prices. Prerequisite: 5103. STAD 4043. Demand and price structures, price discovery, time series and agricultural price research methods.

5303 Agricultural Market Policy and Organization. Marketing firm decisions; structure, conduct and performance of agricultural industries; international trade theory; and government policies that influence decisions.

5313 Food Distribution Systems. Analysis of market structure, operational and pricing efficiency; organizational and operational decision making in food distribution firms.

5403 Production Economics. Prerequisite: 5103. Analysis of micro static production economics problems; factor-product, factor-factor and product-product relations and functional forms for technical units; aggregate production functions; maximizing and minimizing choice rules; firm cost structure; scale relationships.

5503 Resource Administration and Environmental Policy. Economic analysis, particularly benefit-cost analysis. Development and administration of environmental and economic policies related to the quality of the environment, including land, air, water and related resources, analyzed in an economic framework.

5603 Advanced Agricultural Finance. Prerequisite: 3603. Financial structure of agriculture, firm financial planning and management, financial intermediation in agriculture and agricultural finance in developing countries.

5703 Economics of Agriculture and Food Policy. Prerequisites: 4703 and 5103. Application of welfare criteria and economic analysis to agricultural, food and rural development problems and policies.

5713 Rural Regional Development. Prerequisite: 5103. Concepts of rural resource development and delineation of problem areas; theories of regional growth as applied to rural areas; analysis of policies and programs for stimulating rural development.

5723 Development Planning and Project Appraisal. Economics of development planning; methods of development planning with special emphasis on the analysis of economic and social impacts, and the economics of agricultural sector planning for developing countries.

5733 International Agricultural Policy and Development. Review and evaluation of agricultural trade and development policies emphasizing developing countries. Objectives, constraints and instruments of national food and agricultural trade policy in an interdependent world. Efficiency, stability, distribution, equity and market structure in commodity trade.

5990 Advanced Studies. 1-6 credits, maximum 6. Open to graduate students with consent of instructor only. Investigation in designated areas of agricultural economics.

6000 Research Problems. 1-15 credits, maximum 24. Open to students pursuing graduate study in agricultural economics beyond the requirements for a master's degree. Independent research and thesis under the direction of a major professor.

6103 Advanced Mathematical Economics. Prerequisites: Prerequisites: 5103 and MATH 3013. General nonlinear models, simultaneous equation models, time series models, and probability models.

6203 Econometric Methods. Prerequisites: 5103 and STAD 4043. Application of econometric techniques to agricultural economic problems, theory and estimation of structural economic parameters.

6213 Advanced Econometrics. Prerequisite: 6203 and MATH 3013. General presentation of large sample theory followed by applications to general linear models, general nonlinear models, simultaneous equation models, time series models, and probability models.

6300 Agricultural Marketing Seminar. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Current developments in theory, techniques for evaluating marketing behavior, market legislation and market development.

6303 Advanced Agricultural Marketing. Prerequisite: 5303. Marketing theory, market structure and performance, governmental regulation and policy, and bargaining in agricultural markets.

6400 Seminar in Farm Management and Production Economics. 1-6 credits, maximum 6. Prerequisite: 5403 or consent of instructor. Scientific research methodology applied to problems of resource efficiency.

6403 Advanced Production Economics. Prerequisite: 5403. Micro dynamic production economic problems under risky conditions; recent developments in agricultural risk management, measuring utility, stochastic efficiency and decision theory; potential application of inventory, replacement, simulation, game theoretic, Bayesian and nonlinear programming models in production economics research.

6700 Agricultural Policy and Rural Resource Development Seminar. 1-2 credits, maximum 2. Frontier issues in agricultural policy, natural resources and rural development.

Agricultural Education (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, FFA chapter advisement, planning and managing the instructional program, identification and completion of records and reports required of a teacher of agricultural education in Oklahoma.

3303 Leadership Skills for Agricultural Organizations. Identification of styles and roles of leadership; development of leadership techniques and skills required in working with organizations and youth groups; dynamics of group action, methods of resolving conflict, communicating, of guiding, and of evaluating; ethical considerations for leaders.

3403 Programs and Personnel of the Cooperative Extension Service. Emphasis on program development, program areas, teaching methods used, staffing patterns, funding and program administration. Special emphasis on entry-level positions and responsibilities of each.

3510 Laboratory and Clinical Experiences in Agricultural Education. 1-2 credits, maximum 2. 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 competence.

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 4200. 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: 3003, junior standing in the College of Agriculture, full admission to the University Teacher Education program and concurrent enrollment in 4103. Full-time directed experience in approved agricultural education department. Applications of methods and skills in agricultural education as related to selecting, adapting, utilizing, evaluating curriculum and materials. Emphasis on educational objectives and goals and facilitating learning for individual students. Roles, responsibilities, interactions, of school personnel and parents. Study of professional education groups and organization and operation of school systems. Graded on a pass-fail basis.

4300 Agricultural Education Internship. 3-10 credits, maximum 10. Prerequisites: sophomore standing, course sequence and consent of adviser/internship coordinator. Supervised full-time internships in approved county extension offices, businesses or governmental agencies, or students prepare community agricultural needs as bases for localizing, personalizing and utilizing a basic core curriculum and other components essential to effective local agricultural education programs.

4990 Seminar and Problems in Agricultural Education. 1-3 credits, maximum 6. Group or individual study and research 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 needs and methods to develop student programs of rural development and adult education.

5490* Seminar and Problems in Agricultural Education. Graded on a pass-fail basis.

5500* Extension Teaching Methods. 1-3 credits, maximum 6. Prerequisites: consent of instructor. Determining the supervised training needs and opportunities of individual students. 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.

5550* Extending Programs of Supervised Experience. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Determining the supervised training needs and opportunities of individual students. 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.

5752* Guidance and Leadership Development of Agricultural Youth. Providing for guidance of youth into farming and agricultural occupations. Sponsoring and advising youth groups; developing leadership through the local FFA chapter, 4-H Club and other youth organizations.

5923* Advanced Methods of Teaching Agriculture. Advanced concepts and methods relevant for both formal and informal presentations. Effects methods may have on individuals involved in the learning experience. Demonstrations of proficiency in use of various advanced methodologies, technologies and concepts.

5962* Curriculum Design and Methodology for Alternative Approaches in Agriculture. The methodology, development and utilization of curriculum for instructional programs focusing upon alternatives in agriculture and agricultural enterprises. Resources and components of curriculum for teaching about new and emerging occupations and careers in agriculture.

5940* Styles of Leadership for Agricultural Education. 1-3 credits, maximum 8. Study of what leadership is and how current leadership styles have an impact on the success or present day agriculture. Organizing trends; utilization of extensive bank of videotapes of current leaders as reference base for study.

5980* Research Design in Occupational Education. 1-3 credits, maximum 6. Research tools as aids in decision making. Literature, logic, 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.

5990* Problems in Agricultural and Extension Education. 1-3 credits, maximum 8. Securing and analyzing data related to special problems or 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. Prerequisite: consent of instructor. Establishing agricultural education, pending and anticipated organizational and structural changes and changing emphases in goals and objectives. Function of social organizations and with other agencies.

6120 Teaching Agriculture in Higher Education. 1-3 credits, maximum 6. The teaching-learning matrix functioning in both undergraduate and advanced graduate programs in agricultural and extension education. Pending and anticipated organizational and structural changes and changing emphases in goals and objectives. Function of social organizations and with other agencies.

Agricultural Engineering (AGEN)

1012 Engineering Software. Lab 2. Prerequisite: ENGR 1011 or concurrent enrollment; engineering major. Introduction to microcomputer software packages useful in engineering analysis and report preparation. Elementary CAD applications.

2022 Introduction to Engineering Design. Lab 4. Prerequisites: sophomore standing in the College of Engineering, Architecture and Technology. Implementation of creativity and the design process to solve engineering problems. Evaluation of the role and the integration of user considerations, specifications, materials selection, human and legal factors, economic factors, and feasibility in the design process.


3023 Instruments and Controls. Lab 2. Prerequisites: ENGSC 3103. Transducers, signal conditioning, read-out instruments, and electrical controllers. Assembly language programming, interfacing and applications of micro-computers in agriculture.

3113 Environmental Engineering. Prerequisites: 3013, PHYSC 2114. Physiologic mechanisms by which plants and animals adjust to their environment, environmental control for animal and plant structures, equipment and facilities used for environmental control of animal and plant structures.

3212* Agricultural Machinery. Prerequisites: 2012 and ENGSC 2112. Function and operation of agricultural machinery, soil dynamics and tillage machinery, selection and management of agricultural machinery.

3323 Hydraulic Applications in Soil and Water. Prerequisites: 3013. Design of irrigation systems, open channel flow systems, and conservation structures. At least one-half devoted to design methodology for hydraulic systems used in soil and water conservation.

3413* Agricultural Process Engineering. Lab 2. Prerequisites: 3113. Physical properties of agricultural materials. Grain storage, drying and handling. Special emphasis on design of systems for grain storage, grain drying, and materials handling.

4001 Seminar. Prerequisite: senior standing. Preparation for professional practice through case studies about ethics, legal liability, safety, and societal issues. Practical professional communications experience.

4023* Agricultural Equipment Design. Lab 3. Prerequisites: 3029, 4212. Senior design course. Project selection, patent search, market evaluation, and design of machine elements. Students will participate as design team members through prototype construction and evaluation.


4212* Agricultural Power. Prerequisites: 3013, 3212, ENGSC 2213. Tractors in agricultural power units; functions, accessories and their relationship to tractor performance; tractor stability and traction. Design of power systems for agricultural applications.

4221* Agricultural Power and Machinery Applications. Lab 6. Prerequisites: 3023 and 4212. Planning, organizing and conducting experiments. Applications of the concepts and methods learned in agricultural machinery courses to the analysis and design of specific agricultural machinery systems.

4313* Introduction to Hydrology. Prerequisites: CHEM 1515, ENGSC 3114, CIVEN 3833 or AGEN 3113, Surface and groundwater hydrology and their application in engineering problems. The hydrologic cycle, weather and hydrology, precipitation, evaporation, transpiration, subsurface waters, stream flow hydrographs, hydrologic and hydraulic stream routing, probability of hydrologic events, application of hydrologic models. Same as CIVEN 3843.

4400* Special Problems. 1-4 credits, maximum 4. Investigations in specialized areas of agricultural engineering.

Agricultural Engineering 203
5413 Instrumentation in Biological Process Control System. Prerequisite: 5032 or equivalent. Analysis of transducers for on-line measurement and control of biological processes. Emphasis on selection of measurement techniques and transducers to sense physical properties of biological materials. Application to agricultural and food processing industries.

5501 Thesis and Research. 1-6 credits, maximum 6. Prerequisite: consent of major professor.

5503 Engineering Practice. 1-12 credits, maximum 12. Prerequisite: B.S. degree in agricultural engineering. The identification, analysis and synthesis of an authentic problem in agricultural 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 implications.

5513 Experimental Engineering Analysis. Prerequisite: 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 cognizance of a graduate faculty member in the student's field of specialization.

6313 Stochastic Methods in Hydrology. Prerequisites: 4313 or LIVEN 5843 or STAT 4023 or equivalent. Stochastic and statistical hydrologic analyses of surface water and groundwater systems. Analysis of urban and rural drainage and detention systems. Same as CIVEN 6843.

6323 Advanced Irrigation Engineering. Prerequisite: 3323 or equivalent. Hydraulic design and operation of surface, sprinkler, and trickle irrigation systems. Management of water and energy in irrigated agriculture.

6333 Fluvial Hydraulics. Prerequisites: 3013 or equivalent. Principles of sediment detachment and transport in fluvial systems. Design of stable channels and flow resistance relationships for sediment-laden flows.


6501 Research in Enology. Prerequisite: MATH 2613. Theory of enology and its use in planning, conducting and analyzing experiments in engineering and biological sciences.

6520 Problems in Soil and Water Engineering. 2-6 credits, maximum 6. Prerequisite: consent of instructor. Problems associated with erosion control, drainage, flood protection and irrigation.

6540 Problems in Farm Power and Machinery. 2-6 credits, maximum 6. Prerequisite: consent of instructor. Literature review and analytical studies of selected farm power and machinery problems. Written report required.

6580 Problems in Transport Processes. 2-6 credits, maximum 6. Prerequisite: consent of instructor. Literature review and analysis of heat and mass transport and interconversion in biological materials. Transport phenomena at interfaces, thermal and cryogenic processing, drying, packed and fluidized bed systems. Thermal and moisture control processing affecting quality of food products. Written report 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 relevant to the student's doctoral program and field of interest.

Agriculture (AG)

1011 Orientation. Required of all freshmen in the College of Agriculture. Methods of study, advisement system, organization of curriculum and discussion of requirements and career opportunities in various fields of agriculture. Graded on pass-fail basis.

2003 (N) Agroecosystems: A Basis for Life. A study of natural plant and animal processes, for the non-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 principles.

2112 Microcomputer Techniques in Agriculture. Lab 2. Operation and capabilities of microcomputers in agricultural applications. Simple programming; data analysis, graphical display, spread sheets, word processing.

3010 Internships in Agriculture. 1-3 credits, maximum 12. Supervised internships with business, industry or governmental agencies including 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. Fundamentals of newswriting and other communication methods; the role of the news media in agriculture and related fields. Same course as JB 4453.

Agronomy (AGRON)

1213 Crop Production. Soils and cropping practices necessary for future 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.

2012 Crop Production Laboratory. Lab 2. Prerequisite: 1213. Hands-on experiences with crop plants. Identification of crops in seed, seedling, mature stages; crop morphology, seed quality, grain grading, growth stages of crops.

2041 Agronomic Orientation. Prerequisite: sophomore standing in agronomy. Development and improvement of written and oral communicative skills; orientation to agronomic research and extension activities; academic requirements and procedures. Graded on pass-fail basis.

2124 Fundamentals of Soil Science. Lab 2. Prerequisite: CHEM 1215. Principal physical, chemical and biological properties of the soil related to plant growth; soil testing and fertilizer usage; formation and classification of soils, rural and urban land use.

3111 Weed Control Laboratory. Lab 2. Prerequisite: 1213 and 3112 (or concurrent enrollment). Identification of common weeds, principles 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 control. Current weed control practices in crops, rangeland and crop situations.

3213 (N) Pasture Management and Forage Production. Prerequisites: 1213, 2124, and MATH 1213. Pasture systems, livestock management and forage crop production for maximum economical production of introduced forage species.

3433 (N) Plant Genetics, Morphology, and Classification. Lab 3. Prerequisite: 2124. Basic principles dealing with how and why soils differ, their descriptions, geographic distributions and modern classification of soils. Soil genesis and classification a prerequisite to sound land use planning and land management.

3564 (N) Plant Genetics. Lab 2. Prerequisites: BISC 1304. Basic principles of heredity. Interrelationship between classical genetics and molecular genetics emphasized. Mendelian genetics, cytotgenetics, mutations, gene regulation and genetic engineering.

3781 Market Grain Technology. Lab 2. Prerequisite: 1213. Quality characteristics of grain for commercial use; identification of different market classes of grain, quality factors, and admixtures affecting the commercial grade; practice in grading grain using the federal grain standards.

3792 Seed Technology. Lab 6. Prerequisite: 1214. Techniques, factors and practices in determining seed purity and germination; principles of seed testing; laws and regulations governing the production, processing, handling and marketing of seed.

3893 (N) Soil Chemistry. Prerequisite: 2124. The chemical and mineralogical properties of soils, weathering and synthesis, mineral exchange, and plant nutrition, mechanisms of ion uptake by plants and the role of the soil-borne elements in plant nutrition.

3913 (N) Principles of Range Management. Prerequisites: 1213 or BISC 1304, and AGRON 2124. Characteristics of rangelands; range regions of the U.S.; range plant response to the environment; the range ecosystem; ecological basis of range management; manipulating range vegetation; grazing management; managing rangelands for wildlife and other values. Two Saturday field trips required.

4080 Agronomy Internship. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Internship must be at an approved agribusiness unit or other agency serving agricultural agriculture. Requires a final conference with on campus adviser and a written report. Graded on a pass-fail basis.

4113 Advanced Weed Science. Prerequisites: 3111 and 3112. Integrated approach for weed management. Weed life cycles and biology, weed crop interferences, 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 Crop Physiology. Prerequisites: 1213 and BOT 3463. Application of basic physiological concepts of growth and cultural management and underlying crop production; environmental and genetic effects on growth of crops. Role of crop physiology at the community level relative to optimum yields and quality.

4210 Describing and Interpreting Soils. 1 credit, maximum 3. Lab 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 fertilizer materials for conservation, maintenance, and improvement of soil productivity and to minimize environmental concerns.
International Agriculture and Food Production. Improving the understanding of world food supply as affected by contemporary culture, policies, climate and geography. Institutional structures needed to promote rural development, and to increase agricultural production in developing countries.

Plant Response to Environmental Stress. Prerequisites: BOT 3463 or concurrent enrollment. Effects of environmental factors on plants including mechanisms of environmental stress tolerance. Specific stresses include drought, flooding, freezing, heat, salinity and radiation. Environmental effects on whole plants and cells in relation to crop development and production.

Plant Breeding. Prerequisite: 3554 or equivalent. Basic principles dealing with the improvement of plants through application of genetic principles.

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 improvement. Preparations of interpretive maps, Soil Physics. Prerequisites: soil biology, soil conservation and soil morphology; spring travel course.

Soil Biology. Prerequisite: 2124. Soil ecology of microorganisms, biological transformations, humus complex, pesticide decomposition, plant nutrient cycles, microflora of rizosphere.

Senior Seminar. Prerequisite: senior standing in agronomy. Career opportunities (talks and field trips); preparation of resumes and interviews. Graded on a pass-fail basis.

Grain Crops. Lab 2. Prerequisite: 1213. Production, distribution, utilization and improvement of the major cereal crops.

Oilseed, Pulse and Mucilage Crops. Prerequisite: 1213. Production, utilization and improvement of oilseed, pulse and mucilage crops with special emphasis on peanuts and soybeans.

Cotton Production. Prerequisite: 1213. Production, utilization and improvement of cotton. Several other agronomic fiber crops briefly discussed.

Range Ecology. Prerequisite: 3914. Ecological principles pertaining to rangelands with emphasis on soil, plant and animal relationships. Characteristics of major range ecosystems and range plants.

Range Vegetation Management. Lab 3. Prerequisites: 3914, AG 2112. Methods of managing range-land vegetation for optimum sustained production. Integrated application of grazing management, prescribed burning, herbicides, and mechanical treatments. Field trips and reports in laboratory.


Range and Ranch Planning. Lab 4. Prerequisite: 4973. Range and Ranch Planning. 1-3 credits, maximum 3. Prerequisites: 15 hours of range management. Advanced topics and new developments in range management.

Herbicidal Fate in the Environment. Prerequisites: 4112. Processes involved in the behavior and fate of herbicides in air, soil, and water. Reaction, movement and dissipation of herbicides in soil.


Data Acquisition and Analysis in Agronomic Systems. Prerequisites: one course in statistics, computer programming experience, and consent of the department head. Use of microcomputers for data acquisition and control of field and laboratory instruments in agronomic applications. Management and analysis of data on microcomputer and main-frame systems. Practical experience in the use of graphics, data management, statistics, and interactive computer communication programs and simulation models with an analysis of the numerical methods involved.

Research. 1-6 credits, maximum 8 (not to exceed 4 semester hours). Prerequisite: consent of a faculty member who will supervise the research.

Advanced Soil Genesis and Classification. Lab 2. Prerequisite: 3433. Processes and factors of soil formation. Comparison of world soil morphology and classification systems.

Physiological Action of Herbicides and Plant Growth Regulators. Prerequisite: BOT 3463. The mode of action, breakdown and movement of herbicides and plant growth regulators in plants and soils. Same course as BOT 5403.

Plant Breeding Theory. Methods and Strategies. Prerequisites: 3554, 4353 and STAT 5013, or consent of instructor. Development and application of statistical and genetic principles to breeding methodology of self- and cross-polinated crops; emphasis on selection methods pertinent to plant improvement; examination of philosophies and strategies employed in private and public plant breeding programs.

Application of Biotechnology to Crop Improvement. Prerequisites: 3554, 4353, and BISC 3014 or consent of instructor. Use of emerging technologies in cell biology and molecular genetics to study and manipulate crop plants. Emphasis on genetic systems which influence productivity and end-product utilization. The integration of biotechnology into plant breeding programs and issues concerning the release of genetically engineered organisms into the environment.

Advanced Genetics. Prerequisites: 3554 or equivalent. BIOCH 3543 or 3653. Concepts of eukaryotic genetics with emphasis on classical, molecular and quantitative genetics.

Cytogenetics. Prerequisites: 5443 or concurrent enrollment in BOT 5323. Behavior of chromosomal, cellular organelles and cytoplasm in relation to genetic behavior.

Soil Physics. Prerequisites: MATH 2265 or 2365, PHYS 1214. Fluid flow through saturated and unsaturated soils; temperature change and heat flow in soil; soil strength and deformation as it applies to plant response.

Methods of Soil, Plant and Water Analyses. Lab 3. Prerequisites: CHEM 2113 and 2122, or 3324. Theory and techniques of current methods of chemical analyses of soils, plant materials and waters. Instrumentation, elemental analyses, and chemical characterization of soils.

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 regions. Methods of water budget and energy budget measurement and instrumentation.

Special Topics in Range Science. 2-4 credits, maximum 4. Prerequisite: consent of instructor. Selected topics in range research methods, range ecophysiology, grazing management, and range analysis.

Management of Agricultural Research Systems. Organization, management and budgeting. Grazing management, resource inventory, evaluation of range operations, and economic analysis. Integrated planning for representative ranch firms. Written and oral reports. Field trips required. No credit for students with credit in 4954.

Range and Ranch Planning. Lab 4. Prerequisites: 4954 or 5973. Development of case studies of range and ranch management problems. Resource inventory, evaluation of ranch operations, and economic analysis. Integrated planning for representative ranch firms. Written and oral reports. Field trips required. No credit for students with credit in 4973.

Soil Physical Analyses. Lab 1 or 2. 1-2 credits, maximum 2. Prerequisite: 4683. Principles and techniques of soil physical analysis.

Doctoral Thesis. 1-6 credits, maximum 20. Independent research to be conducted and reported with the supervision of a major professor as partial requirement for the Ph.D. degree.

Advanced Topics and Conference in Agronomy. 1-8 credits, maximum 12. Prerequisite: M.S. degree. Supervision of student for advanced topics in areas of academic or economic interest. A reading and conference course designed to acquaint the advanced student with fields not covered in other courses in agronomy.

Soil Physical Chemistry. Prerequisite: CHEM 3553 or consent of instructor. Thermodynamics of soil solutions, kinetics, surface chemistry of solid phases important in soil or aquatic systems, techniques in X-ray diffraction and electron microscopy, and examples in geochemical equilbirum modeling.
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 consumer to current and the U.S. world food situations.


3002 Dairy Production. Lab 2. Prerequisites: 1124 and 2123. Basic requisites of nutrition as related to composition of milk produced: requirements of replacement animals; herd health problems peculiar to stresses of production; milking management and mammary health; and dairy breed programs related to herd management.

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 4612, 4621, 4631 or 4641.

3021 Sheep Production. Lab 2. Prerequisites: 1124 and 2123. Modern production and management practices for sheep operations. No credit for animal science students with credit in 4542.

3031 Swine 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. 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. Prerequisites: 60 credit hours and animal science major status. An in-depth consideration of the various areas of specialization in the field of animal science and their associated career opportunities and obligations.

3113 Quality Control. Lab 2. Prerequisites: organic chemistry and BISC 1502 or equivalent. Application of the principles of quality control in food processing operations to maintain the desired level of quality.

3182 Meat Grading and Selection. Lab 4. Prerequisite: 2253. Classifying and grading carcasses and wholesales cuts of beef, pork and lamb; factors influencing quality and value.

3210 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 Food Plant Systems. Lab 2. Prerequisite: MATH 1513. Food plant design and the application of machines to food processing, packaging and storage.


3301 Food Sanitation Laboratory. Lab 2. Prerequisites: 3302 or concurrent enrollment, and BISC 1502. Exercises to illustrate quantitative or qualitative 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 processing, distribution, preparation and sale. Emphasis on control of food spoilage and food-borne illnesses.

3333 Meat Science. Lab 3. Prerequisites: 2253, CHEM 1210 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.

3373 (N) Food Chemistry. Lab 2. Prerequisites: 3543 or organic chemistry. 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, feeding, production and physical conditioning of horses. Current management concepts as they apply to the health and well being of horses.

3423 (N) Animal Genetics. Prerequisite: BISC 1303. The basic principles of heredity including: kinds of gene action, random segregation, independent assortment, physical and chemical basis of heredity, mutations, sex-linkage, chromosome mapping, multiple alleles and chromosomal abnormalities. Also a brief introduction to quantitative inheritance and population genetics.

3433 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.

3483 Marketing and Utilization of Milk. Lab 2. Prerequisites: 1124 and AGE 1114. Marketing and utilization of milk, pricing, quality controls, procurement, processing and utilization, product distribution and factors affecting consumption.

3543 (N) Principles of Animal Nutrition. 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. Prerequisites: 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.

3623 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 (I) Agricultural Animals of the World. The production and utilization of agricultural animals by human societies.

4023 Poultry Science. Lab 2. Prerequisites: 1124, and 2123 or 3543. The relationship of the biological concepts and principles of nutrition to management practices, incubation procedures, and economic factors utilized by poultrymen in the commercial production of table and hatching eggs, broilers, turkeys and other poultry meat.

4333 Processed Meat. Lab 4. Prerequisite: 3333 or 4033. Meat and meat product formulation. 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, health and disease, functional anatomy and implications, social behavior, and applying principles of psychology in horse management and training.

4441 Advanced Cattle Reproductive Management. Lab 2. Prerequisite: 3443. Advanced concepts in cattle reproductive management with an 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.

4632 Stocker and Feedlot Cattle Management. Lab 2. Prerequisites: 3612, 3653. Application of scientific knowledge, management principles and research advances to modern stocker and feedlot 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: 4333, 4343 and 3653. Application of genetic, physiological, microbiological, nutritional and engineering principles to the efficient production of swine.

4712 Livestock Sales Management. Lab 2. Prerequisite: 4333. 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, receipt of payments, sales budgets 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.

4863* Interpretation of Research. Lab 2. Prerequisite: senior standing or consent of instructor. Introduction to the methods of science, descriptive statistics and literature organization. Students review the literature and make oral and written reports.

4900* Special Problems. 1-6 credits, maximum 6. 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-month internship in addition to a report and final examination.

4973* Range and Ranch Planning. Lab 4. Prerequisites: 3612 and AGRON 4954. Inventory of ranch resources, survey and evaluation of ranch practices, and economic analysis. Development of a comprehensive ranch management plan. Managing range and ranch resources in a social context. Written and oral reports. Field trips required. 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 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 reproductive processes, the influences of environmental factors upon these processes and the application of reproductive physiology to animal production. Same course as PHSI 5113.

5210* Special Topics in Food Science. 1-4 credits, maximum 4. Prerequisite: graduate standing and/or consent of instructor. Advanced topics and new developments in food science, especially with reference to foods of animal origin.

5213* Advances in Meat Science. Prerequisites: BIOCH 4113 and ZOOL 3204 or equivalent. Development of muscle and its transformation to meat. Properties of meat and their influence on water-binding, pigment formation, texture and fiber characteristics.

5303* Advanced Animal Breeding. Prerequisites: 3433 or equivalent and STAT 4013. Basic concepts of population genetics as related to theoretical animal breeding including heritability, genetic correlations, selection methods, inbreeding and heterosis.

5623* Experimental Methods in Animal Research. Lab 2. Prerequisite: STAT 4023. Methods used in large animal research including the selection of experimental material, record keeping, interpretation of results and a critical review of existing investigations.

5733* Advanced Animal Nutrition. Lab 2. Prerequisite: 3653. Physiological aspects of digestion and absorption; nutrient content of livestock feeds and methods of analysis; methods of determining nutrient values of feeds; nutritional energetics; nutrient requirements of different animals; and the application of current concepts in nutrition to formulation of rations and feeding programs.

5742* Rumenology. Prerequisite: 3653 or equivalent. Physiology of development of the ruminant digestive tract; the nature of, and factors controlling, digestion and absorption from the tract to include the relative nature and roles of the rumen bacteria and protozoa. Same course as PHSI 5742.

5751* Rumenology Laboratory. Lab 3. Prerequisite: 5742 or concurrent enrollment. Demonstrations and practice of basic techniques used in nutritional and physiological research investigations with the ruminant animal including cannulations, passage measurements, microbiology and in vitro rumen fermentation.

5762* Carbohydrate and Lipid Nutrition. Prerequisite: BIOCH 5753. An in-depth study of the digestion, absorption and metabolism of carbohydrates 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 nutritional status.

5782* Vitamin and Mineral Nutrition. Prerequisite: BIOCH 5753. Development of the concept of dietary essential minerals and vitamins. Individual minerals and vitamins discussed for animal species from the standpoint of chemical form, availability, requirements, biochemical systems, 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 simulation techniques in animal research and livestock 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 the use of quantitative and statistical techniques utilized in population genetics. Gene and genotypic 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 credits. Prerequisite: consent of instructor. Advanced topics and new developments in animal breeding and population genetics.

6110* Seminar. 1 credit, maximum 3. A critical analysis of the objectives and methods of research in the area of animal science. Review of the literature, written and oral reports and discussion on select topics.

Anthropology (ANTH)

2353 General Anthropology. Anthropology, emphasizing the study of human physical evolution (physical anthropology) and cultural evolution (archaeology).

3233* (S,Sp/D) Cultural Anthropology. Introduction to culture, various subdisciplines of cultural anthropology, anthropological concepts and capsule ethnographies of selected ethnic groups.

3823 (S) North American Indian Cultures. Precontact and traditional subsistence patterns, social organization and ideology with emphasis on specific groups in each culture area.

4123* Archaeology of North America. Factors influencing the initial peopling of North America, the spread and diversification of hunting and gathering economies, the rise of agricultural systems and emergence of extensive and complex political units.

4633* (S,Sp/D) Racial and Cultural Minorities. Ethnic and racial groups in contemporary pluralistic society, including a cultural-historical perspective on their origins, social relations, value systems and goals.

4643* 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 SOC 4643.

4823* Contemporary Native Americans. Cultural adaptations of North American Indians within both contemporary ‘traditional’ communities and urban settings. Federal programs and current problems as they relate to the adaptational processes.

4883* (S) Comparative Cultures. Compares environments, economies, social and political organizations and other aspects of culture among selected literate and preliterate societies.

4953* Anthropological Theory. Significant theoretical formulations in cultural anthropology. Relationships between theoretical developments and research emphasis.

4990* Special Topics in Anthropology. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Directed readings or research on significant topics in anthropology.

4993* Anthropology of Aging. Study of aging using anthropological theory and method; 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 understanding of self and expanded knowledge of occupational information. Includes a study of the decision-making process and a look at the present and future changing world of work.

3013 (S) Leadership Concepts. Prerequisite: 12 hours completed course work. Increases undergraduate student competence through the study of leadership concepts. Stresses communication, decision-making, leadership styles and theories and group dynamics. Attempts integration of theoretical concept with reality of application within the university community.

3092 Counseling and Guidance for Dormitory Personnel. Principles and practices involved in counseling and supervising students.
3113* Psychological Foundations of Childhood. Prerequisite: PSYC 1113. The child from conception to puberty with focus on educational implications of development in cognitive, affective and psychomotor domains.

3202 Education of Exceptional Learners. Learning characteristics, identification and diagnosis of exceptional learner in the public schools. Implications of the learning, environmental and cultural characteristics, planning and program assistance available for accommodating the exceptional learner in regular and special education programs; observation of exceptional learners.

3213* Psychology of Adolescence. Prerequisite: PSYC 1113. The adolescent from pubescence to adulthood with focus on educational implications of development in cognitive, affective and psychomotor domain.

3240 Observation and Participation in Special Education. 1-3 credits, maximum 6. Lab 1-3. Supervised activities with various types of exceptional learners and the educational provisions for them. Graded on a pass-fail basis.

3413 Child and Adolescent Development. Prerequisite: PSYC 1113. The person from conception through adolescence with focus on education implications of development in cognitive, affective, social, and physical domains.

3633* Assessment and Intervention for Exceptional Infants and Children-Birth to Age 6. Prerequisite: 3202. Assessment techniques and intervention strategies appropriate for exceptional infants and young children. Basic theories of development and research supportive of various intervention strategies and assessment techniques.

4052* Measurement and Evaluation in the School. Prerequisite: full admission to Teacher Education. Construction and selection of classroom tests. Contrasts between criterion-referenced and norm-referenced measurement strategies. Grading techniques, rules of standardized test selection and score interpretation and the basic statistics used to summarize and analyze test results.

4063 Exploration of the Creative Experience. Prerequisite: senior standing. The creative experience in art (visual to performing), articulation (oratory to literature), thought (philosophy to psychology), business (practice to products), leisure (procreation to recreation). Western and Eastern viewpoints. Personal creative development fostered by modeling and by investigation of proven techniques. A wide range of creative endeavor with an experiential approach. Future-oriented applications.

4223* Human Learning in Educational Psychology. Prerequisites: 3113 or 3213, an approved observation or field experience course, and for students pursuing teacher certification, full admission to Teacher Education required. Instructional psychology focusing on the study of teaching and learning as part of an instructional program to deal with individual, cultural, and environmental differences. Case studies and group discussion emphasizing motivation, planning, evaluation, classroom problems and management.

4453* Educational Diagnosis and Remediation. Prerequisites: 4052, MATH 2413 and CIED 3283. Provides skills in the application of standardized and informal assessment information for educational planning. Includes analysis of common used achievement, perceptual, motor and language tests and behavioral analysis techniques.

4513* Introduction 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 subject.


4640 Student Teaching in Special Education. 1-12 credits, maximum 12. Prerequisites: 3202 and full admission to Teacher Education. Supervised teaching experience in the area of special education in which the student is preparing to qualify for a teaching certificate. Graded on a pass-fail basis.

4643 Clinical Teaching Seminar. Lab 2. Prerequisites: 3202, 3633, 4653. A supervised clinical experience with special needs individuals. Practical application of skills in instructional techniques and approaches, writing and implementation of IEP’s and lesson plans, developing or selecting appropriate activities and materials.

4653* Education of the Mentally Retarded. Prerequisites: 3202 and PSYCH 4613. Education program needs and social-cultural environment of mentally retarded children, adolescents and adults.

4713* Individualizing Education Programs for Exceptional Individuals. Prerequisite: 3202. Techniques for teaching individuals with handicapping conditions.

4723* Curriculum and Methods for Teaching Mentally Retarded Adolescents and Adults. Prerequisite: 3202. Techniques for teaching the mentally retarded individual from adolescence through adulthood.

4743* Student Evaluation and Guidance Services. For secondary school majors with emphasis on test design, use and grading practices and on the teacher role in testing, evaluation and guidance services.

4753* Techniques of Behavior Management and Counseling with Exceptional Individuals. Prerequisite: 3202. Techniques to develop and evaluate programs of behavior change for exceptional students including counseling with the exceptional individual and conferencing with professionals and parents.

5000* Master’s Thesis. 1-6 credits, maximum 6. Prerequisite: consent of instructor.

5013* Introduction to Graduate Study and Research in Education. Required of all graduate students in education. An introduction to the concepts of research design, methodology, sampling techniques, internal and external validity and the scientific method in educational problem solving. Critical analysis of educational research and related areas.

5015* Foundations of Educational Research. Introduction to the concepts of methodology, statistics and measurement. Training in research, designing research projects and statistical analysis. Emphasizes the scientific method in educational problem solving. No credit for students with credit in 5103 and 5952.

5023* Introduction to School Psychological Service. History, role and function, and issues and problems of the school psychological service worker.

5042* Interviewing Techniques. Prerequisite: graduate standing or consent of instructor. Basic principles underlying effective interviewing and interpersonal communication skills. Overview of various types of interviews. Application and analysis of interviews through video and audio tapes.

5063* Introduction to Gifted and Talented Education. Concepts, techniques and strategies for providing differentiation in educational experiences for the gifted and talented. State and Federal legislation; development of gifts and talents; program types; identification systems; program development; materials development; teaching techniques and methodologies.

5103* Human Development in Psychology. Introduction to basic and research 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 services 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 conflicts experienced by gifted and talented students. Strategies for consulting with teachers, peers, and parents regarding optimal development of gifts. Peer 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: graduation or consent of instructor. An examination of mental health treatment modalities and approaches to counseling with older adults. An experiential 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, environmental and personality factors interact to change human behavior.

5223* Psychology of Disability. Psychological and sociological implications of physical disability and illness. Dynamics involved in adjusting to disabling conditions including issues in rehabilitation psychology, counseling, and somatopsychology.

5320 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 for horizontal and vertical enrichment and acceleration. Commercial and teacher-prepared materials in imagination; imagery; analogy; metaphor; inductive, deductive and abductive thinking; science; philosophy; psychology; logic systems; problem solving; concept learning; creativity; creative problem solving. Conceptual approaches to the use of the preceding in various interest-based and non-interest-based formats.

5373* Educational Measurements. Appropriate techniques 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.
and weaknesses as a potential counselor or student practice through observation and participation. The super-
consent of instructor. Orientation to counseling prac-
Introduction to Counseling Practice. Prerequisite:
Psychology of Learning. 5463* 5453*
Factors related to career planning and worker effec-
sues and historical overview. Theoretical foundations and nature of the prob-
sive foundation for counseling practice and empha-
2. Group dynamics, theory and methods to maximize creative poten-
techniques and approaches used to teach stu-
dents with learning disabilities and the theoretical bases for these techniques and approaches. Adapting cur-
curricular techniques for use with learning disabled students. Pro-
essional roles of the teacher of learning disabled students including communications with other teach-
Transpersonal Human Development. Human de-
ment in terms of individual consciousness, fo-
counseling as a communication method and non-directive change agent. Indi-
and informal assessment techniques, and instructional materials.
Methods of Teaching Students with Learning Dis-
abilities. Prerequisites: 3202 or equivalent, 5623. Cur-
rent techniques and approaches used to teach stu-
Methods of Teaching for the Physically Handicapped. Prerequisite: 4613. Types of physical handi-
caps, their educational implications and various ad-
justments for optimal functioning.
Curriculum Modifications for Exceptional Individu-
als. Materials and resources designed for use by teachers and other professionals, paraprofessionals and paraprofessional personnel in working with exceptional individuals.
Includes commercial and teacher-student-made ma-
Teaching Methods and Techniques for the Gifted and Talented. Prerequisite: 5863. Characteristics and identification of the emotion-
ally disturbed learner. Trains the teacher to identify the emotionally disturbed/behavior-disordered learner.
Advanced Methods for Teaching the Mentally Retarded. Prerequisite: 4653. A review of research and methodological developments related to the instruc-
tion of mentally retarded children, adolescents, and adults.
Methods for the Gifted and Talented. Prerequisites: 5063 and 5863. Programs based on various philosophies, learning structural concepts of gifted and talented education, e.g., mainstreaming, self-con-
tained, pullouts, magnet schools, time blocking, ac-
celeration and enrichment. Programs designed for general and specific academic ability; however, expo-
sure will be provided to creative and productive think-
ing programs, leadership programs, and visual and performing arts programs. Specific models included.
Instructional Strategies and Resources for the Emotionally Disturbed Learner. Prerequisite: 5823. Instructional procedures and resources available for working with the emotionally disturbed/behavior-dis-
order learner. A wide range of theoretical approaches explored.
Behavior Management and Affective Education. Prerequisite: 4753. The utilization of various approaches to the management of individual and group behavior: affective education in a wide range of instructional settings.

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 of use to counselors, teachers, and other human services workers. Techniques include guided imagery, progressive relaxation, and especially meditation.

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.

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 parent-aid, volunteer-aid, mentors, tutors, group sponsors. Developing community interest, finding external resources, external funding and resource information sources.

Intermediate Research Techniques in Education. Prerequisites: 5013 and 5653 or 5015. Principles and experimental design in education and behavioral sciences. Fundamental and advanced analysis of variance designs in conducting experiments and related data analysis strategies.

Identification and Behavior Characteristics of the Gifted and Talented. Prerequisites: S373 and 5863. Cognitive, affective, and behavioral characteristics of the gifted and talented. Selection of tests and interest inventories. Selection and/or developing of nomination/recommendation forms/models, inventories, checklists, rating scales, sociograms as well as data abstraction from cumulative and anecdotal records. Functions of gifted/talented identification committees.

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.

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.

Adult Development. Theory and research concerning human development during the adult years. Practical applications for serving adult populations in education and education-related settings.

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.

Research Topics in Special Education. Prerequisite: admission to doctoral program or consent of instructor. Classic and current significant research topics; review and reinforcement of professional inquiry skills in reading, utilizing, planning, conducting and reporting research in special education.

Principles of Counseling Psychology. Prerequisite: 5553 or equivalent. Development, theoretical foundations and applications of therapeutic models of counseling and psychology.

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.

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.

Legal Aspects In Special Education. Prerequisite: admission to doctoral program or consent of instructor. Familiarization and analysis of legal rights and responsibilities of students, educators, and administrators in special education, federal and state mandates, case law and recent legal developments affecting special education.

Internship in School Psychology. 3-6 credits, maximum 6. 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.

Higher Education Student Personnel Services. Prerequisite: 6173. Higher education student personnel services such as: admissions, orientation, student activities, financial aids, housing and counseling.

Internals in Higher Education Student Personnel. 2-6 credits, maximum 6. Prerequisites: 6173 or 6213 and student personnel and guidance program and consent of supervisor. Provides work and study 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.

Advanced Practicum and Supervision. 3-12 credits, maximum 12. Prerequisites: 5593 and master’s degree. For prospective counseling psychologists, counselor educators and supervisors, and practicing counselors. Supervised assistance in development of counseling, consulting and supervising competencies.

Program Evaluation. Prerequisite: 5012 or 5015. Concepts, purposes and techniques of evaluating educational programs. Evaluation design, information collection, analysis, reporting and uses of results for programs ranging from individual lessons to nationwide multi-year projects. Special emphasis on evaluation requirements of federally funded programs.

Internship in Educational Psychology. 1-2 credits, maximum 9. Prerequisite: consent of instructor. Supervised field experience in educational psychology. Directed off-campus experiences designed to relate theory to practical work and to foster educational special interests.

Internship in Educational Psychology. 3-6 credits, maximum 6. Prerequisites: 6173 or 6213 and student personnel and guidance program and consent of supervisor. Provides work and study 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.

Program Development in Special Education. Prerequisite: admission to doctoral program or consent of instructor. Physical, social and psychological factors in communities such as power structure, economics, prestige, religion, as well as national activities that are influential in establishing programs for the exceptional.

Current Trends and Issues in Special Education. Current research and literature regarding the education of exceptional children.

Applied Behavioral Studies Research Seminar. Prerequisite: admission to advanced graduate program. Critical analysis of current research.

Directed Reading. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Directed reading for students with advanced graduate standing.

Internship in Education. 1-8 credits, maximum 8. Prerequisite: admission to advanced graduate program and consent of department head. Directed off-campus experiences designed to relate ideas and concepts to problems encountered in the management of the school program.

Architecture (ARCH)


Architecture and Society. Design, planning and building considered in their social and aesthetic contexts.

Statics and Strengths of Materials. Lab 2. Prerequisites: PHYS 1114 or PHYS 2114 and MATH 2255. Resultants of force systems, static equilibrium of rigid bodies, and statics of structures. Stress and bending moments, deformation and displacements in deformable bodies.

Beginning Materials and Systems. Prerequisite: grade of “C” or better in 2116. Structural, environmental control systems and materials in architecture.


History and Theory of Baroque Architecture. Prerequisite: 2003. History and theory of renaissance architecture in the western world particularly the later, baroque period.

Special Topics. 2-6 credits, maximum 6. Subjects to be selected by the faculty in architecture from advances in state-of-the-art areas.

Architectural Design Studio IV. Lab 16. Prerequisites: grade of “C” or better in 2116 and admission to third year. Problems in architectural design.

Environmental Control: Thermal Systems and Life Safety. Lab 2. Prerequisite: MATH 1715 or MATH 1513. A study of the fundamentals of thermal comfort, energy concerns and mechanical systems for buildings as well as the basic principles of life safety.
2232 Structures: Elementary Timbers. Prerequisite: grade of "C" or better in 3123. Analysis and design of timber structures used in architecture.

3243 Structures: Elementary Analysis. Lab 2. Prerequisite: grade of "C" or better in 2024. Structural theory for applications in architecture.

3232 Structures: Elementary Steel. Prerequisite: grade of "C" or better in 3223. Analysis and design of steel structures used in architecture.

3433 Environmental Control: Acoustics and Lighting. Prerequisite: MATH 1513 or 1715. A survey of architectural acoustics, electrical and lighting systems for buildings.

4073* (H) History and Theory of Early Modern Architecture. Prerequisite: 2003. History and theory of modern architecture in the western world from the industrial revolution to the early twentieth century.


4117 Architectural Design Studio VI. Lab 20. Prerequisite: grade of "C" or better in 3216. Problems in architectural design.

4123 Structures: Elementary Concrete. Lab 2. Prerequisite: grade of "C" or better in 3223. Analysis and design applications in architectural problems using concrete structures.

4133* Advanced Architectural Acoustics Design. Prerequisite: 3133. Analysis and design of acoustically-critical spaces, including open-plan offices, music facilities, studios and theaters, and a design project of the student's choice.


4193 Marketing Professional Services. Prerequisite: 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 VII. Lab 20. Prerequisite: grade of "C" or better in 4117. Problems in architectural design.

4223* Structures: Intermediate Analysis. Lab 2. Prerequisite: grade of "C" or better in 3243. Mathematical formulation of architectural structural behavior. Matrix applications, finite element, finite differences, stability considerations and three-dimensional structuring modeling.

4243* Foundations for Buildings. Prerequisite: 4123 or concurrent enrollment. Interaction of frames and supports for structures used in architecture. Subsurface conditions and design of foundation systems and retaining walls for buildings.

5000* Special Problems. 1-6 credits. Maximum 6. Lab 3-18. Prerequisite: 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.

5073* History and Theory of the Architecture of Frank Lloyd Wright and His Contemporaries. Prerequisite: 4073. A study of the architecture of Frank Lloyd Wright and his contemporaries in the late 19th and early 20th centuries.

5083* History and Theory of Japanese Architecture. Prerequisite: admission to the professional school or consent of instructor. Historical Japanese architecture from 200 BC to 1980; Shinto, Buddhist, Zen Sukiya, Zukuri, Minka and contemporary subjects.

5100* Special Topics. 3-6 credits, maximum 15. Subjects selected by the graduate faculty in architecture to cover state-of-the-art advances.

5119* Architectural Design and Development. Lab 24. Prerequisites: for architectural engineering structures majors: 5117, 3233, 3246, 3253; for architecture majors: 3233, 3246, 3253, 4217. Design and detailed development of a major architectural project integrating all aspects of architecture and related disciplines in a professional manner and milieu.

5132* 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.

5144* Structures: Intermediate Concrete. Lab 3. Prerequisite: grade of "C" or better in 4123. Design and analysis of multi-story reinforced concrete frames and prestressed and post-stressed concrete structural components used in architecture applications.

5193 Management of Architectural Practice. Prerequisite: fifth-year standing in architecture or architectural engineering or consent of instructor. Principles of management as applied to the private practice of architecture and architectural engineering.

5217* Architectural Design Studio VIII. Lab 20. Prerequisite: grade of "C" or better in 5119. Problems in architectural design.

5223* Advanced Architectural Lighting Design. Prerequisite: 3133. Lighting applications in contemporary architectural design, including offices, schools, churches, and health care facilities. The student will apply the principles learned to a design of his or her own choice.


5293* Architectural Project Management. Prerequisite: fifth-year standing in architecture or consent of instructor. Principles of management as applied to architectural and architectural engineering projects.

5373* Field Study in Europe I. Prerequisite: senior standing in architecture or consent of instructor. On-site analysis and study of European architecture, culture and urban design.

6000 Special Problems. 1-15 credits, maximum 15. Lab 3-18. Prerequisite: consent of instructor and head of School. Theory, research or design investigation in specific areas of study in the field of architecture and its related disciplines. Plan of study determined jointly by student and graduate faculty.

6073* History and Theory of Non-Western Architecture. Prerequisite: graduate standing or consent of instructor. Architecture in the non-Western and pre-Columbian world.

6083* History and Theory of Contemporary Architecture. Prerequisite: graduate standing or consent of instructor. American architecture beginning in the 16th century through the 20th century.

6100* Special Topics. 3-6 credits, maximum 15. Subjects selected by the graduate faculty in architecture to cover state-of-the-art advances.

6113* Professional Project Research. Prerequisite: 5217. Data gathering, analysis and program formulation related to professional project.

6117* Architectural Design Studio VIII. Lab 20. Prerequisite: 5217. Problems in architectural design.

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.

6143* Computer Applications in Architecture. Lab 3. Prerequisite: consent of instructor. State-of-the-art applications of computers to the practice of architecture and architectural engineering.

6183* Architectural Seminar I. Seminar for graduate students only. Must be taken concurrently with 6117.

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. Prerequisite: 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. Prerequisite: 6117. Independent projects or competitions. 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 5225. Analysis techniques for architectural structures including stability, space frames, computer applications, guyed 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, value, volume, 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 black and white and color 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.

1803 (H) Introduction to Art. An introduction to the analysis and interpretation of visual arts. Visual, emotional and intellectual aspects of art in painting, sculpture, printmaking and architecture.

2113 Life Drawing. Lab 6. Prerequisite: 1113, 1203. Introduction to life drawing with emphasis on preliminary linear construction and structural aspects of the figure, including the study of general body proportions, and the visualization of figure-ground relationships.

2203 Three-dimensional Design. Lab 6. Prerequisites: 1103 and 1203. Exploration 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 mixing. The nature and properties of color, its expressive qualities, symbolic potential, and psychological impact.

3110 Life Drawing Studio. 3 credits, maximum 9. Lab 6. Prerequisite: 2113. The development of formal and expressive aspects of drawing by direct observation of the figure and its environment. Emphasis on media experimentation, aesthetic considerations, personal concepts, and anatomy.

3123 Oil Painting. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213, or consent 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.

3133 Watercolor Painting. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent of instructor. The development of skills in watercolor painting stressing form and content, visual perception and individual expression. Structured assignments in color mixing, wet-on-dry techniques, wet-into-wet techniques, brush handling, paper supports and surface manipulation.

3232 Sculpture I. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent of instructor. Studies in clay and plaster. Subtractive and additive processes. Emphasis on sculptural ideas, methods and materials.

3300 Sculpture. 3 credits, maximum 9. Lab 6. Prerequisites: 1333 and 3303. Sculpture in any material.


3343 Jewelry and Metals. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent of instructor. Fabrication and forming techniques for non-ferrous metals. Cold joinery, silver soldering, surface treatment and elementary stone setting. Applications toward either wearable or small scale sculptural format.

3403 Illustration. Lab 6. Prerequisites: 3123 or 3133. Exploration of conceptual to technical picture-making utilizing a wide range of media and techniques. Emphasis on the proper use of reference material to complete sample problems in editorial, advertising, and technical illustration.

3420 Lettering and Typography. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213. The study of symbolic communication including the practice of calligraphic lettering, typography and typographic design. Introduction of computer applications in type specification and layout design.

3423 Graphic Design. Lab 6. Prerequisite: 3413. Aspects of graphic communication: ideation, production skills, selection and use of materials and reproduction processes. Sequential course work includes use of computer and traditional methods to develop grid and proportional systems, information organization, layout, comprehensives and mechanical preparation.

3433 Applied Graphic Design. Lab 6. Prerequisite: 3423. Design problems with special attention to signage, expository diagram and construction, display, and point of purchase. Use of model-building tools and study of structure and form to introduce the student to problem-solving and finding techniques. Development of concepts into models.

3503 Ceramics. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent of instructor. Methods of clay preparation, hand building, wheel forming methods, methods of decoration and glazing, firing and kiln construction. Involvement with ceramic materials and processes.

3603 (H) 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 (H) History of Medieval Art. A survey of European art and 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: classic, Byzantine, barbaric, Christian, and Moslem.

3623 (H) History of Renaissance Art. A survey of Italian painting, sculpture and architecture from the thirteenth through the sixteenth century. Includes painting in northern Renaissance Europe, Jan van Eyck to Pieter Brugel.

3633 (H) History of Baroque Art. Painting, sculpture, and architecture in Counter-Reformation Italy, Spain, and Flanders. The second half of the course focuses on second half of the 17th century France and Holland, analyzing the popularization of non-religious themes in painting including portraits, landscape, still life, and genre.

3653 (H) History of 19th Century Art. Art of 19th century Europe-ideals, conflicts, escapes and triumphs, beginning with the French Revolution and ending in 1900.

3663 (H) History of American Art. Visual arts in America from Colonial to the present. Major styles, ideas and uses of material in architecture, painting, sculpture and design.


3700 Printmaking: Relief. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213, or consent of instructor. Understanding and control of carving, processing and creating prints from wood, linoleum and plastic. Development of imaginative utilization of design and contemporary approaches to relief printmaking.

3710 Printmaking: Screenprinting. 3 credits, maximum 9. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent of instructor. Understanding and control of intaglio techniques; preparation, processing, and etching of images from metal plates. Development of concepts and images through the medium of screen printing.

3720 Printmaking: Intaglio. 3 credits, maximum 9. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent 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 traditional and contemporary approaches to the intaglio process.

3730 Printmaking: Lithography. 3 credits, maximum 9. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent 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.

4100 Advanced Drawing. 3 credits, maximum 9. Lab 6. Prerequisite: 2113. Investigation of drawing stressing thematic development, abstract ideas, and individual imagery.

4120 Oil Painting Studio. 3 credits, maximum 9. Lab 6. Prerequisite: 3123. Oil painting with emphasis on personal development of visual ideas and technique.

4130 Watercolor Studio. 3 credits, maximum 9. Lab 6. Prerequisites: 1103, 1113, 1203, 1803, 2203, 2213 or consent of instructor. Understanding and control of the procedures of drawing, processing and printing editions from stones and metal plates. Development of concepts and ideas through experimental approaches.

4143 Computer Graphics Design. Lab 6. Prerequisites: 3403, 3423. Utilization of computer software applications for the creation of the electronic images and animation sequences that can be outputted to laserprint copy, video or photographic slides. Emphasis on computer concept, thematic development and skillful presentation.

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. Prerequisites: 3403, 3423. Developing and finishing illustrations for advertising, editorial, repitational, and technical purposes. Emphasis on the use of 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. Continued explorations of ceramic arts: glazes, clay bodies, methods of forming, decorating and firing. Continued emphasis on the relation between visual unity and individual expressive concepts as these apply to both utilitarian and conceptual forms.
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 & 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.

2900 Arts and Sciences Honors Supervised Research. Prerequisites: Honors program participation, consent of instructor and A&S Honors program director. Introduction to research or other creative activity in student’s major field through participation in professor’s research or creative activities.

3603 Colloquium in Area Studies. Interdisciplinary studies in one area: African, Asian, Latin American, Russian and East European, Native American, Ancient and Medieval, or Women’s studies. Individual undergraduate research projects.

Astronomy (ASTRO)


2023 General Astronomy. Prerequisite: PHYS 1214 or equivalent. More rigorous treatment of material in 1104 for majors in physical sciences and other areas.

2153 Advanced Astronomy. Prerequisite: 1104 or 2023. Topics such as pulsars, quasars, neutron stars, black holes and interplanetary space probes.

3023 Astrophysics. Prerequisite: PHYS 2114 or consent of instructor; ASTRO 1104 recommended. Analysis and interpretation of astronomical phenomena in terms of the laws of physics; e.g., stellar structure, the interstellar medium, galaxies and cosmology.

3053 Celestial Mechanics. Prerequisite: MATH 2613. Motion of a particle under various laws of force, potential and attraction of massive bodies, theory of orbit determination and problems of two, three and N bodies.

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 2.5 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.

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.


2132 Intermediate Flight. Lab 4. Prerequisite: 1222. Flight instruction in night flying, instrument, and cross-country flying. Use of radio navigation and flight computer. Requires minimum of 30 hours dual and 10 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.

2213 Theory of Instrument Flight. Prerequisite: 1113 or passed FAA Private Pilot Written Examination. Instrument flight rules, the air traffic system and procedures, and elements of forecasting weather trends. Preparation for FAA Instrument Written exam.


2603 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 associated development. Enroute and terminal control areas, computerization and automation, flight service systems, ground-to-air systems and integrated telecommunications networks.

Biological Science (BISC)


1103  (N)Plant Biology. Lab 3. Prerequisite: 1304. Survey of the plant phyla, structure and function of plant organs, water relations, translocation, reproduction, growth and development. Emphasis on the importance of plants to mankind.

1603  (N)Animal Biology. Lab 2. Prerequisite: 1304. Morphology, anatomy, 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 6. Prerequisite: 1114 or 1304 or equivalent. Topics of current interest especially designed for nonbiology majors.

2222  Survey of Human Diseases. Prerequisite: 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.

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.

2283  Microbes and Society. Lab 2. Prerequisite: 1114 or 1304 or equivalent. Characteristics 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; and organic chemistry. The cell concept and cell morphology, cell macromolecules, organelles, enzymes, energetics, movement of water and materials across membranes, influence of external environment, cellular synthesis, growth and maintenance, control and integration of function, replication, differentiation, origin and evolution of cells.

3024*  General Genetics. Prerequisite: 1403, or 1603, or equivalent. Inheritance in plants, animals and microorganisms; molecular and classical aspects.

3034*  General Ecology. Lab 4. Prerequisite: 1403, 1603 or equivalent; MATH 1513 or 1715. Physical and biotic environment, responses of organisms to the environment, community ecology, natural ecosystems, and man’s interaction with ecosystems.

3232  (N)Human Reproduction. Prerequisite: 1114 or 1304 or equivalent. Human reproduction is dealt 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.

3263  (N,SpD)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.

3272  (N)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.

3604  Biological Principles for Teachers. Lab 2. Prerequisites: 1304, CHEM 1314, ZOOL 3204, Capstone course in biology for potential science teachers. Review of biological phenomena and principles as related to the curriculum.

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  (N)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 ecologic 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: BISC 1403 or 1603. Techniques for preparation of biological material for microscopic examination. Same course as ZOOL 3013.

3024*  Plant Diversity. Lab 4. Prerequisite: BISC 1403. Forms and life histories of selected plants with emphasis on systems and the less familiar forms. The diversity of plant forms as well as basic similarities in life histories; importance of each to man and his environment. Field trips required.

3114*  Plant Taxonomy. Lab 4. Prerequisite: BISC 1403 or equivalent. Vocabulary and concepts of plant taxonomy; terminology, keys, nomenclature, documentation, classification and biosystematics. Emphasis on angiosperm flora of Oklahoma. Field trips required.

3233*  Plant Anatomy. Lab 3. Prerequisite: BISC 1403. Structure of cells, tissues and organs of plants. Consideration of structure as related to ontogeny, phylogeny and function.

3460*  Plant Physiology Laboratory. 1-2 credits, maximum 2. Lab 2-4. Prerequisite: 3463 or concurrent enrollment. Skills in techniques for working with plant materials involving nutrition, respiration, photosynthesis, water relations, translocation, hormones, growth and development. Students having credit in BISC 3014 should enroll for one hour; all others enroll for 2 hours credit.

3463*  Plant Physiology. Prerequisite: BISC 1403. Plant subcellular structure, water relations, water absorption and transport, transpiration, gas exchange, nutrition, enzymes, respiration, photosynthesis, growth, development, reproduction, tropisms, hormones, dormancy and seed germination.

5432*  Physiology of Ion Metabolism. Prerequisite: 3463 or equivalent. Physiology of ion absorption, translocation, metabolism and functions in higher plants.
5533* Advanced Ecology. Lab 3. Prerequisite: 4023 or BISC 3034. Physiological and evolutionary aspects of plant ecology as revealed by recent research. Spring pre- 
cess field trip required.

5543* Plant Ecological Genetics. Prerequisites: BISC 3024 and 3034, or equivalents. Variation below the species level in natural plant populations: genetic basis (in- cluding quantitative genetics), ecological implications, and microevolutionary outcomes. Emphasis on morph- 
ological, biochemical, and life-history variation and their adaptive significance, with some consideration of the larger processes of coevolution, divergence, and speciation.

5753* Physiology of Plant Growth and Development. Pre-

5813* Plant Developmental Genetics. Prerequisites: 3463 and BISC 3024 or equivalent. Discussion of morpho-

5823* Plant Morphology. Lab 3. Prerequisite: 3024. Com-

5850* Botany Seminar. 1 credit. maximum 6. Required of 

5923* Environmental Plant Physiology. Prerequisite: 3463 or equivalent. Effects of light, temperature, water, soil and other environmental factors on physiological re-


Business Administration (BUSAD)

1111 Business Freshman Orientation. Prerequisite: fresh-

2011* Special Topics. 1-6 credits, maximum 6. Prerequi-

3713 International Business. Prerequisites: [CON 2013, 

4010 Business Projects. 1-6 credits, maximum 6. Prereq-

4050* Honors Colloquium. 3-9 credits, maximum 9. Pre-

4113* Small Business Management. Prerequisite: Busi-

4513* Strategic Management and Business Policy. Pre-

5003* Computer Applications in Business. Prerequisite: 

5113* Entrepreneurship and Venture Management. Pre-

5713* Analysis of the Multinational Firm. Prerequisite: 

5990* Graduate Research Projects. 3-6 credits, maximum 6. Prerequisites: graduate standing and consent of supervising professor. Graduate research projects to partially meet the requirements of the MBA program.

6000* Research and Thesis. 3-9 credits, maximum 30. Pre-

6100* Seminar in Business Administration. 3-6 credits, maximum 6. Prerequisite: consent of instructor. Inter-

Business Education (BUSED)

5000* Thesis. 1-6 credits, maximum 6. Prerequisite: con- 

5110* Problems in Business Education. 1-3 credits, maxi-

5330* Field Study. 1-6 credits, maximum 6. Prerequisite: consent of department head. Individual investigations conducted in absentia and internships; periodic con-

6110* Graduate Reading in Business Education. 1-3 cred-

Business Law (BUSL)

1113 Law in Society. Forms and types of law and their evolu-

3213 Legal and Regulatory Environment of Business. General concepts regarding the nature of the legal system, ethical issues in business decision making, dispute resolution processes, basic constitutional limi-

216 Botany
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 24 semester credit hours. Application of automated office equipment to work processes in the office. Operation and use of word-processing equipment for text editing, operation and use of the microcomputer in text editing and other office information systems, and transcription of office communications.

3523 Office Problems in Typewriting. Lab 2. Prerequisite: 2313 or equivalent. Problems in office situations requiring application of typewriting knowledge and skills. Emphasis on quality work at high speeds.

4363 Teaching Bookkeeping and Accounting. Prerequisites: ACCTG 2203, ABSED 3213, CIED 2113, skill in secretarial business subjects, and full admission to the Teacher Education. Teaching bookkeeping and accounting including development of objectives; organization, assessment 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.

4473 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 modification, and evaluation techniques.

4653* Data Processing Instructional Methods and Procedures. Prerequisite: GENAD 2103 or COMSC 2113. Instructional methods in the teaching of data-processing courses including the development of an understanding of computer hardware and software concepts and terminology, methods, and techniques in using and teaching concepts about the computer and computer programming languages are included. ‘Hands-on’ programming experience is an integral part of the course. Lab required.

4813 Instructional Strategies for Vocational Business Professions. Prerequisite: full admission to Teacher Education. Preparation, utilization, and interpretation of instructional and evaluation materials for vocational business education courses.

5770* Current Issues in Vocational Business Programs. 1-3 credits, maximum 6. Prerequisite: graduate standing or consent of instructor. Problems, materials, methods, history and current theory and philosophy of vocational business programs.

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; utilization in design and analysis of process equipment.

3113 Rate Operations II. Prerequisites: 3013, 3473. Continuation of ChEng 3013.


3473* Chemical Engineering Thermodynamics. Lab 3. Prerequisites: ENGSC 2113, 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 equilibrium.

4002* Chemical Engineering Laboratory I. Lab 6. Prerequisites: 3013 and 3473. Applications of heat, mass, and momentum transfer, unit processes, and unit operations to the analysis of bench and pilot-scale equipment. Interpretation of experimental data and the presentation of results are emphasized.

4112* Chemical Engineering Laboratory II. Lab 6. Prerequisite: 4002. A continuation of 4002.

4124* Chemical Engineering Design I. Prerequisites: 3113, concurrent enrollment in 4002. Economic analysis of process plants and systems of equipment; methods for estimating plant investment requirements and operating costs, economic evaluation and optimal design of chemical process systems; basic equipment and process design calculations.

4242* Chemical Engineering Design II. Prerequisite: 4124. A continuation of CHENG 4124. Economic analysis of process plants and equipment. Design of chemical processing equipment and chemical plants. Application of computer techniques to chemical engineering design.


4433* Chemical Processes. Prerequisite: senior standing. Chemical process industries are studied from the standpoint of technology, raw materials, products and processing equipment. Thermodynamics and kinetics of industrial processes.

4473* Chemical Reaction Engineering. Lab 3. Prerequisite: senior standing. Principles of chemical kinetics rate concepts and data treatment. Elements of reactor design principles for homogeneous systems; introduction to heterogeneous systems.

4581* Seminar. Prerequisite: senior standing. Recent developments in chemical engineering and the process industries.

4613* Fundamentals of Reservoir Engineering. Prerequisites: MATH 2613 and 3473 or MAE 3613. Properties of porous media, properties and phase behavior of reservoir fluids. Computational schemes, including numerical methods, for predicting and optimizing production rates and establishing reserves.

4683* Petroleum Processes. Prerequisite: 3473. Analysis of the unit processes of petroleum refining.

4840* Process Control Laboratory. 2-5 credits, maximum 5. Lab 4-8. Prerequisites: 3013 and MATH 2613. Experimental study of control loop performance including: process dynamics, sensors, feedback control laws, and control valves. Analog and digital techniques including: pneumatic and electronic components, programmable controllers, and computer simulation with colorgraphics.

4843* Chemical Process Instrumentation and Control. Prerequisites: chem 2313 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 technique.

4990 Special Problems. 1-5 credits, maximum 5. Lab 3-15. 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. Prerequisites: senior standing and consent of instructor. Application of chemical 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.

5110* 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 stages and transfer unit concepts. Mass transfer concepts of diffusional unit operations such as absorption, adsorption, crystallization, drying, humidification and liquid extraction.

5283* Biochemical Engineering. Prerequisite: consent of instructor. Application of fundamental chemical engineering principles to challenges posed by biotechnology. Application of biotechnology, biological mass transfer and kinetics, and bioprocessing design and scale-up.

5290* Introduction to Nuclear Engineering. 3-4 credits, maximum 4. Principles and applications 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 fluid dynamics and heat transfer to the design and analysis of process heat transfer equipment.


5535* Metallurgical Failure Analysis. Prerequisite: ENGS 3313. Modern theory of corrosion and its applications in preventing or controlling corrosion damage economically and safely in service.

5583* Corrosion Engineering. Prerequisite: ENGS 3313. Modern theory of corrosion and its applications in preventing or controlling corrosion damage economically and safely in service.


5743* Chemical Engineering Process Modeling. 3 credits, maximum 6. Chemical engineering systems and process models. Analytical and numerical methods of solution of resulting equations or systems of equations, with computer methods in a chemical engineering context.

5793* Advance-process Design and Economics. Prerequisites: 4123, 4223. Application of chemical engineering principles to the design and analysis of process equipment and plant prediction and extrapolation of thermal and physical properties; methods for design and synthesis of process units and equipment.


5873* Air Pollution Control Engineering. Causes, effects and control of atmosphere pollution. Same course as GIVEN 5873.

5953* Petroleum Technology. Polymerization, catalytic cracking, reforming and other unit processes. Unit operations as applied to petroleum refining. Economics of refining operations.

5990* Special Problems. 2-4 credits, maximum 9. Prerequisite: consent of instructor. Individual report topics in chemical engineering involving operations, processes, equipment, experiments, literature search, theory, computer use or combinations of these.

6000* Doctoral Thesis. 2-15 credits, maximum 30. Prerequisite: approval of major professor. The doctoral candidate will register for a minimum of 3 semester credit hours in each semester during which laboratory work is in progress. Methods used in research and thesis writing. An original investigation of a problem in chemical engineering and its report in a dissertation.

6100* Chemical Engineering Seminar. 1-3 credits, maximum 3. Advanced research and development topics.

6203* Chemical Engineering Science I. Prerequisite: 5213 and 5423. Theoretical aspects of fluid dynamics, heat transfer and mass transfer. Boundary layer theory, multiphase flow theory of diffusion and interphase mass transfer. Analogies between heat, mass and momentum transfer.

6113* Chemical Engineering Science II. Prerequisite: 6023. Continuation of 6023. Theoretical aspects of fluid dynamics, heat transfer and mass transfer. Boundary layer theory, multiphase flow theory of diffusion and interphase mass transfer. Analogies between heat, mass and momentum transfer.

6223* Advanced Chemical Engineering Thermodynamics. Prerequisite: 5843. Phase equilibrium in multicomponent systems. Irreversible processes. Properties of fluids and the prediction of properties by statistical methods. Application of thermodynamics to unit operations.

6440* Advanced Topics in Chemical Engineering. 3-6 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. Symbols, 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 applied biological sciences. No credit for students with credit in 1014, 1314.

1225 (N)General Chemistry. Lab 2. Prerequisite: 1215 or advanced placement. A continuation of general chemistry, recommended for students in the applied biological sciences. No credit for students with credit in 1014, 1314.

1314 (L,N)General Chemistry. Lab 2. Prerequisite: MATH 1513 or concurrent enrollment in 1613, 1715 or a higher level math course. The beginning chemistry course recommended for students in basic biological sciences (including premedical science and pre-veterinary science), physical sciences and engineering. No credit for students with credit in 1014, 1215.

1515 (L,N)General Chemistry. Lab 2. Prerequisite: 1314 or advanced placement. A continuation of general chemistry. No credit for students with credit in 1225.

2113 Principles of Analytical Chemistry. Prerequisites: 1515 and MATH 1513 or 1715. Modern theories of solutions, separation techniques and methods of analysis. No credit for students with credit in 3324.

2122 Quantitative Analysis Laboratory. Lab 6. Prerequisites: 2113 or equivalent. Examination of the laboratory work related to material covered in CHEM 2113. No credit for students with credit in 3324.

2344 Organic Chemistry. Prerequisite: 1225 or equivalent. For students, agriculture taking 3-semester sequence 2344-BIOCH 3543. Fundamentals of organic chemistry with an introduction to biochemically important molecules. No credit for students with credit in 2463, 3015 or 3053.

3015* Introductory Organic Chemistry. Lab 4. Prerequisite: 1415 of equivalent. Terminal course in organic chemistry covering general principles, methods of preparation, reactions and uses of both acyclic and cyclic compounds. No credit for students with credit in 2463, 2465, 3053 or 3112.

3053* Organic Chemistry. Prerequisite: 1515 or equivalent. Hydrocarbons and their derivatives, including specific compounds of theoretical, biological or industrial importance. No credit for students with credit in 2344, 2463 or 3015.

3112 Organic Chemistry Laboratory. Lab 6. Prerequisite: 3153 or concurrent enrollment. Laboratory exercises related to the theoretical principles covered in CHEM 3053 and 3153. No credit for students with credit in 3015.

3153* Organic Chemistry. Prerequisite: 3053. A continuation of 3053.

3164 Physical Science for Teachers. Lab 2. Prerequisites: 1314, GEOL 1114, PHYSC 1114. Capstone course in physical science for potential science teachers. Review of physics and chemistry principles and phenomena as related to the curriculum.

3324* Introductory Quantitative Analysis. Prerequisite: 1225 or equivalent. Volumetric, gravimetric and instrumental methods of analysis. A terminal course in analytical chemistry. No credit for students with credit in 2113 or 2122.

3353 Descriptive Inorganic Chemistry. Prerequisite: 1225 or 1515. Structures and properties of the elements and their many compounds in the broadest sense which includes the modern technologically important materials, organometallics, and inorganic substances of biological significance.

3434* Physical Chemistry I. Prerequisites: 2113, MATH 2565. Introductory theoretical analysis of molecular structure, intermolecular bonding, and macroscopic chemical systems using quantum theory, classical and statistical thermodynamics and kinetics. Students who are not chemistry majors may receive graduate credit. No credit for students with credit in 3354.

3532* Physico-Chemical Measurements. Lab 6. Prerequisites: 2122, 3434. Apparatus, experimental methods and calculations employed in physico-chemical investigations.

3553* Physical Chemistry II. Prerequisite: 3434. A continuation of 3434. Students who are not chemistry majors may receive graduate credit.

4020* Modern Methods of Chemical Analysis. 1-5 credits, maximum 5. Lab 2. Prerequisites: 2122, 3434. Theoretical and laboratory study of modern techniques, reagents and instruments employed in analytical chemistry.

4422* Chemical Literature and Reference Work. Prerequisites: 2113, and 3015 or 3053. Use of the chemical library; journals, reference works and other sources of information on chemical subjects.


5000* Thesis. 1-6 credits, maximum 6. Investigations, chiefly experimental, with necessary conferences. Familiarization with the student's methods used in research in chemistry.

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.

5103* Physical and Chemical Separations. Prerequisite: one year of physical chemistry. Principles of bulk and multi-stage separation methods: chromatography, liq uid-liquid extraction and zone melting.

5113* Equilibrium and Kinetics in Analytical Chemistry. Prerequisite: one year of physical chemistry. Physical and chemical principles of equilibrium 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.

5223* Chemistry of High Polymers. Prerequisites: 3153 and 3434 or equivalent. Preparation and polymerization of organic monomers; properties and uses of resulting high polymers; theories of polymerization; inorganic and natural organic polymers.

5260* Inorganic Chemistry I. 1-3 credit hours, maximum 3. Prerequisites: 3553 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 solids and phase transitions in inorganic solids.


5362* Organic Reactions. Prerequisite: 5323. A continuation of 5323, covering more advanced material.


5443* Mechanism and Structure in Organic Chemistry. Prerequisites: 3153 and 3553. Relationship of properties of organic compounds to their structure; mechanisms of organic reactions.

5563* Chemical Thermodynamics I. Prerequisite: 3553. Statistical and classical thermodynamics applied to chemical systems.

5623* Quantum Chemistry I. Prerequisite: 3553. Fundamentals of quantum mechanics, including classical mechanics, wave representation of matter, the Schroedinger equation and atomic structure.

5723* Solutions of Electrolytes. Prerequisite: 3553. Thermodynamics of solutions of electrolytes; cell potentials, concentration conductance, diffusion, dielectric constants and their theoretical interpretation.

5960* Inorganic Chemistry II. 1-3 credits, maximum 3. Prerequisite: 5260. Chemistry of main group and transition organometallic compounds, metal clusters, and catalysis by organometallic polymers, bioinorganic chemistry, and materials chemistry.

6000* 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.

6560* Special Topics in Analytical Chemistry. 1-6 credits, maximum 6. Supervised study of topics and fields not otherwise covered.

6103* Electroanalytical Chemistry. Prerequisite: 4024. The theory, practice and instrumentation in various areas of modern electroanalytical chemistry.

6113* Analytical Spectroscopy. Prerequisite: 4024. Survey of selected topics in analytical applications of spectroscopic techniques. Fundamental concepts as well as current trends in research, including instrumentation.

6153* Mechanism of Organic Reactions. Prerequisite: 5443. Theories of organic reactions; prediction of their course.

6323* Heterocyclic Compounds and Medicinal Chemistry. Prerequisite: 5362. Preparations and reactions 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: 3553. The kinetics of chemical reactions and their theoretical interpretation.

6523* Quantum Chemistry II. Prerequisite: 5623 or PHYS 5613. Molecular quantum mechanics and chemical bonding.

6553* Molecular Spectroscopy. Prerequisite: 5623. Spectra and structure of molecules.

6623* Chemical Thermodynamics II. Prerequisite: 5563. A continuation of 5563.

6650* Selected Topics in Advanced Physical and Inorganic Chemistry. 1-6 credits, maximum 12. Prerequisite: 5323. Supervised study of selected topics and fields not otherwise covered.

Chinese (CHIN)


1225 Elementary 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 2123. Emphasis on fluency in spoken Mandarin Chinese, structures of greater complexity, a greater repertory of characters and vocabulary items, 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 linear and angular measurements, differential leveling, traverses and topographic surveys. Computer applications to surveying calculations.


3413 Structural Analysis. Prerequisite: 3114. Analysis of internal forces and deflections of structures subjected to static loading. Beams, trusses, and framed structures are analyzed by appropriate classical methods. Classical methods and modern computer procedures for finite analysis 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 strength design requirements of the ACI Building Code.

3603 Surveying II. 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.

3633 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 effect on traffic elements. Basic traffic flow models. Highway and street intersection capacity and level of service. Traffic control concepts. Transportation systems management.

3713 Introduction to Geotechnical Engineering. Prerequisite: ENSC 2114. Physical and mechanical properties of soils, including: specific gravity, grain size distribution, friction angle, cohesion, 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. Prerequisite: CHEM 1515. Engineering aspects of the life support system; the carbon-dioxide cycle; cycling of nitrogen, sulfur and phosphorus; and the hydrologic cycle. Prerequisite: CHEM 1515.


3823 Human Impact on the Environment. The activities of humans and how they affect the aqueous, terrestrial and atmospheric environment.


3843 Introduction to Hydrology I. Prerequisites: CHEM 1515, PHYS 2014, LIVEN 3833 or AGEN 3013. Basic principles of surface and groundwater hydrology and their applications to civil engineering practice. Fundamentals of water, water pressure and pressure forces, water flow in pipes and networks, water pumps, water flow in open channels, hydraulic analysis, and water measurements. Basic principles and concepts will be highlighted by laboratory demonstrations and computer solution techniques.

4010 Civil Engineering Research. 1-4 credits, maximum 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 and administration of civil engineering projects. Specific attention is given to communication, negotiations, contract procedures, professional ethics, and professional liability. Also advantages of professional registration and membership in professional organizations.

4043 Senior Design. Prerequisites: 3513, 3523, senior standing. Major comprehensive design experience using the team approach. Industry practitioners provide real design projects and analyze and critique results. Extends the undergraduate experience and provides the student with opportunities to analyze and design complex structures.

4273 Construction Planning and Scheduling. Lab 3. Prerequisites: senior standing and consent of instructor. Critical-path methods of planning, scheduling and controlling construction projects. Includes both computer and noncomputer techniques.

4711 Basic Soils Testing Laboratory. Lab 3. Prerequisite: laboratory measurement of the physical and mechanical properties of soils; specific gravity, grain size distribution, plasticity, compaction, compressibility, and shear strength.


4833 Underground Operations in Environmental Engineering. Prerequisites: 3813 and 3833. Basic theory of water and wastewater unit operations. Calculation of treatment system design parameters based on theory.

5000 Master’s Thesis or Report. 1-6 credits, maximum 6. Prerequisites: graduate standing and approval of major professor. Review of literature of major fields of civil engineering.

5010 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.

5013 Aquatic Chemistry. Prerequisite: CHEM 1515. In-depth treatment of the chemistry related to water and wastewater treatment. Applications to engineered as well as natural systems.

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 engineering 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. Design of construction equipment. Performance under various operating conditions. Application of engineering fundamentals to construction and equipment design 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 of formwork for concrete structures. Analysis of loads, deflections, and stresses of forming systems. Evaluation of economics of formwork designs.

5213 Environmental Geotechnology. Prerequisite: background in soil mechanics and basic chemistry. A study of the ability of soil to retain pollutants, effect of pollutants on chemical, physical and geotechnical properties of soil. Description of soil remediation technologies.

5233 Geotechnical Engineering Investigations. Prerequisite: 3613, 4711. Description of methods of subsurface exploration, sampling, and in situ testing. Discussion includes a review of engineering geophysical methods, equipment and methods for soil boring, stress testing of soil and rock, measurement of ground water conditions, and in situ testing equipment and methods such as cone penetration test, pressure meter test and others.

5243 Use and Design of Geosynthetics. Prerequisites: 3713, 4711. Description of types of geosynthetics available for engineering uses. Pertinent engineering functions and design for various types of geosynthetics. Basic design methodology for geosynthetics for various functions, and construction and performance considerations.

5263 Terrain Analysis. Prerequisite: Basic courses in soil mechanics and geology. Prediction of geotechnical engineering characteristics of geological landforms from geomorphometric information, digital photogrammetric stereo interpretation. Training and practice of this media in land-use applications and environmental problems.

5303 Systems Analysis for Civil Engineers. Prerequisite: senior or graduate standing. Synthesis of systems modeling and simulation techniques, mathematical optimization approaches, tools of multi-attributed systems including utility theory and decision analysis. Mathematical optimization techniques in the areas of resource allocation, transportation and water resources systems planning, structural design, construction management, and environmental and ecological problems.

5313 Highway Traffic Operations. Prerequisite: 3633. Level of service, capacity and service volume concepts. Operational characteristics of uninterrupted and interrupted-flow traffic facilities. The 1985 HCM procedures for analyzing the capacity of freeways, multilane and two-lane rural highways, urban arterials, signalized and unsignalized street intersections, and transit and pedestrian facilities. Administrative and planning actions for congestion management. Design alternatives and improvement strategies for effective use of urban arterial street width.


5353 City Planning and City Organization. Lab 3. Prerequisite: senior or graduate standing. Orderly development and extension in city growth, civic, legal and engineering aspects. Zoning, planning, parks, public and private assembly areas, community facilities, economic use of water, fire, streets, systems, airports and transportation terminals, and traffic control. Functional organization of a city and city engineering organization.

Civil Engineering
6723* Advanced Geotechnical Engineering. Prerequisites: 3713 and GQEL 3024. Geologic occurrence and engineering significance of ground failure hazards such as slope movements, streambank erosion, subsidence, meta-stable soils and earthquakes. Emphasis on qualitative identification of ground failure hazards with quantitative assessive and remedial actions.

6733* Geotechnical Engineering Instrumentation. Prerequisites: 3713 and basic geology course. Description of equipment and methods of measurement of pore water pressure, deformation, stress, and load in geotechnical structures and at boundaries with other structures. Discussions will include types of equipment available, basic of operation, collection and presentation of data, and appropriate applications.

6823* Environmental Concepts and Analysis II. Prerequisite: 5853. Advanced application of physical, chemical and biological principles in establishing quantitative relationships in control of the aquatic 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 ground water systems. Analyses of urban and rural drainage, and detention systems. Same as AGEN 6313.


6913* Advanced Environmental Laboratory Analysis. Lab 3. Prerequisite: 5813. Instrumental analysis of environmental contaminants. Process samples, effluents, residue, and environmental samples. Use of gas and liquid (ion) chromatography, atomic absorption and other 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.


Computer Science (COMSC)

2113 (A) Computer Programming. Lab 2. Prerequisite: MATH 1513. Programming in a high-level programming language. Introduction to algorithms, problem-solving, and structured programming. Examples of applications from various areas such as business, science or engineering.

2123 (A) Computer Science I. Prerequisites: 2113, concurrent in MATH 2265. Non-numerical algorithms, string processing, programming style and documentation. 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 form. Application of iterative and recursive algorithms and elementary data structures.
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 The C Programming Language. Prerequisite: 2133. 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 techniques, macros, linkages, instruction format, instruction set, translation to file processing operations and auxiliary storage devices. Programming assignments are implemented in assembly language.

3460 Assembly Language Programming. 1 credit, maximum 6. Lab 2. Prerequisite: 2123. Assembler instructions, addressing modes, macros, pseudo-instruction, control and data registers, register conventions, writeable control stores, virtual memory concepts. May be repeated for credit using different computer architectures.

3513 Numerical Methods for Digital Computers. Prerequisites: MATH 2365, 3013, knowledge of FORTRAN. Digital computer approximate solutions of algebraic and transcendental equations, solutions of linear and non-linear equations, functional approximations, least squares curvefitting and applied topics. Practical programming experience in applications of these techniques.


3563 (A)Discrete Mathematics II. Prerequisite: 2653 or 3613. A continuation of 2653; algebraic structures, coding theory, finite state machines, machine decomposition, computability, formal language theory. Same course as MATH 3563.

3583 Social Issues in Computing Sciences. Prerequisites: junior standing, 9 credit hours COMSC, ENGL 3323, or concurrent enrollment. Social implications of computer use or misuse with emphasis on the effects on the individual, society and other human institutions. Social responsibilities of people involved in using or applying computers.

4113* (A)Techniques of Computer Science for Science and Engineering. Prerequisites: one year calculus and senior or graduate standing. For graduate and advanced undergraduate students requiring a one-semester treatment of computer topics. No background in computing topics assumed. Comprehensive treatment of the FORTRAN programming language with emphasis on numerical applications. Number systems, finite arithmetic, iterative processes, program structuring, numerical methods, program libraries are covered.

4143* Computer Graphics. Prerequisites: 2133, MATH 2265. Interactive graphics programming; graphics hardware; geometric transformations; data structures for graphic representations; viewing in three dimensions; representation of 3D shapes; hidden edge and hidden surface removal algorithms; shading models.

4273* Software Engineering. Lab 2. Prerequisites: 2133, 3443 or ECEN 3213. Fundamental characteristics of the software life cycle. Tools, techniques, and management controls for development and maintenance of large software systems. Software metrics and models. Human factors and experimental design. Same course as ECEN 4273.

4283* Computer Networks. Prerequisites: 3443 or ECEN 3213; UNIX knowledge. Computer networks, distributed systems and their systematic design. Introduction to the operation of computer networks. Networking experiments to describe network topology. ISO reference model. Same course as ECEN 4283.


4343* Data Structures and Information Processing. Prerequisite: 2133. Storage, structures, data and information structures, list processing, trees and tree processing, graphs and graph processing, searching, sorting.

4444* Compiler Writing I. Lab 2. Prerequisite: 3443. Syntax and semantics of procedure-oriented languages and theory of translation techniques used in their compilation. Study of languages for particular application areas, including non-algebraic languages.

4513* Numerical Mathematics: Analysis. Prerequisites: 2233, 3013, knowledge of FORTRAN. Machine computer approximate solutions of algebraic and transcendental equations, solutions of linear and non-linear equations, functional approximations, least squares curvefitting and applied topics. Practical programming experience in applications of these techniques.

4570* Special Topics in Computing. 1-3 credits, maximum 5. Advanced topics and applications of computer science. Typical topics include operating systems, multiprocessor systems, programming systems or 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, maximum 6. Prerequisite: consent of major professor. A student studying for a master's degree, who elects to write a thesis or a report must enroll in this course.


5030* Professional Practice. 1-9 credits, maximum 9. Prerequisite: graduate standing in computer science, consent of the department head. Experience in the application of computer science principles to problems encountered in industry and government. Participation in problem solving in the role of junior computer scientist, junior software engineer, or computer scientist intern. All problem solutions documented. Required written report to the major professor.

5070* Seminar and Special Problems. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Designed to allow students to study advanced topics not provided in existing courses.

5113* Computer Organization and Architecture. Prerequisites: 4343. Computer architecture, computer control, microprogrammed control, addressing structures, memory hierarchies, hardware description languages, specific architectures, hardware simulation, emulation.

5154* Computer Science Migration. Lab 2. Prerequisite: graduate standing. A survey of computer science for students whose undergraduate major was not computer science. Programming in high-level languages. Programming in assembly language. Algorithm design and analysis. Computer system fundamentals. Fundamental data structures.

5253* Digital Computer Design. Prerequisite: ECEN 3223. Analysis 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. Structure and architecture of memory organization alternatives; input/output interfaces. Same course as ECEN 5253.

5273* Advanced Software Engineering. Lab 2. Prerequisites: 4273, consent of instructor. A continuation of 4273. Advanced theory and practice of software design methodology. Large-scale design and implementation problems. Experimental design for software engineering. Same course as ECEN 5273.


5323* Operating Systems II. Lab 2. Prerequisites: 4233, STAT 4013. Task systems and concurrent programming, synchronization and inter process communication, theoretical investigation of resource sharing and deadlock, memory management, strategies, and scheduling algorithms, queueing theory, distributed operating systems. System accounting, user services and utilities.

5333* Compiler Writing II. Prerequisite: 4444. Continuation of 4444. Theory and practice of compiler writing techniques. Compiler writing systems. A formal approach to computer languages.


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. Prerequisites: 3424, 4344. Storage, classification and retrieval of information, data bases, errors, multi-key files, indexing; dynamics of file reorganization, search strategy.


5513* Numerical Analysis I. Prerequisite: 4513 or MATH 4513. Algorithms and error analysis; solution of equations; interpolation and approximation theory.

5543* Numerical Analysis for Differential Equations. Prerequisite: 4513 or MATH 4513 and 4233. Advanced machine computing, algorithms, analysis of truncation and rounding errors, computer arithmetics, and stability applied to discrete variable, finite element, and spectral methods in ordinary and partial differential equations. Same course as MATH 5543.

Automatic and Finite State Machines. Prerequisites: 5313 or 5113 and 5213 or MATH 3113. Finite state model, 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 function. Same course as MATH 5653.

Computability and Decidability. Effectiveness, primitive recursive, general recursibility, recursive functions, equivalence of computability, definitions, decidability, and recursive algorithms. Same course as MATH 5663.


6000 Research and Thesis. 2-15 credits, maximum 30. Prerequisites: graduate standing and approval of advisor. 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 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, 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 INEN 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.

6253 Advanced Topics in Computer Architecture. Prerequisites: 5313 and 5253. An introduction to the architecture and organization of computers, with an emphasis on parallelism. Topics may include pipelining, multiprocessors, data flow, and reduction machines. Same course as ECEN 6253.

6300 Advanced Topics in Programming Languages. 2-6 credits, maximum 12. Prerequisite: 5313. Interpreter models of programming language semantics, Vienna definition language, lambda calculus, LISP definition; Knuth semantic systems and their formulation, translational and denotational semantics. 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 a change in topics.

6400 Advanced Topics in Information Systems. 2-6 credits, maximum 12. Prerequisites: 5413, 5423. Design and analysis of databases and other information systems. Systems (architectural network, and relational systems); implementation of data base systems; update and retrieval algorithms; multi-user and 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 bound automata.

Construction Management Technology (CONST)

1213 Introduction to Building Construction. Lab 3. Fundamentals of light building construction; techniques of architectural drawings; methods and rational used in the development of plans, elevations, sections, details and construction drawing interpretation.

3333 Construction Practice. Prerequisite: departmental approval. Supervised field experiences in construction between the freshman and senior years, emphasizing the various phases of the construction process and finish methods employed.

2252 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, introduction 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.


3263 Estimating I. Prerequisite: 2252 or 2253. Quantity take-off with emphasis on excavation, formwork and concrete; use of algebraic systems to define and estimate costs.

3363 Timber and Form Design. Lab 3. Prerequisite: MECDT 3323. Basic timber structures with emphasis on concrete form applications.

3452 Mechanical Equipment of Buildings. Prerequisite: PHYSC 1114. Plumbing, heating and air conditioning systems as applied to residences and commercial buildings.

3462 Electrical Equipment of Buildings. Prerequisite: PHYSC 1214. Electrical and lighting 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: MECDT 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 MECDT 3323. Physical and mechanical properties of soils, and tests appropriate for construction management students.

4050 Advanced Construction Management Problems. 1-6 credits, maximum 6. Prerequisites: junior standing and consent of instructor. Special problems in construction management.

4263 Estimating II. Lab 3. Prerequisite: 3263. Extensive use of actual contract documents for quantity take-off, pricing and assembling the bid for several projects. Use of computers in estimating.

4273 Computer Estimating. Lab 3. Prerequisite: 4263. Various software programs applied to estimating for building construction. Automated take off (Digitizer) systems.


4293 Construction Manager Concepts. Prerequisite: 4283. Principles and applications to manage 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. Aspects of the collective bargaining process. Functions of committees as service to the industry.

Curriculum and Instruction Education (CIED)

1230 Reading and Study Skills for College Students. 1-4 credits, maximum 4. Lab 1-4. Instruction 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, and consent of instructor. The expanding role of the construction manager in the construction industry.

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 professional clinical experiences required of all candidates. Grade: 7. As many credits as desired. Required for full admission to Teacher Education. Graded on a pass-fail basis.
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.

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.

Teaching Mathematics at the Primary Level. Lab 2. Prerequisite: MATH 1314, 1513 or 1713. Developmental levels in selection and organization of content and procedures for primary mathematics education.

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.

Early Lab and Clinical Experience in Elementary Education U. 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.

Early Lab and Clinical Experience in Elementary Education U. 1-2 credits, maximum 3. Lab 3-6. Prerequisite: 2450. Advanced clinical experience in schools, kindergarten through grade eight. Concurrent seminar includes formal study of instructional planning. Graded on a pass-fail basis.

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 pass-fail basis.

Field Experiences in the Secondary School. 1-3 credits, maximum 3. Lab 2. Prerequisites: consent of instructor and completion of speech proficiency examination. Seminars, directed observation and participation in a particular subject area of the secondary school. Develops experience in meeting the mental, social, physical and cultural differences among middle school children. Graded on pass-fail basis.

Structure and Utilization of a Mathematics Laboratory. Lab 1-2 credits, maximum 3. Lab 3-6. Prerequisite: full admission to Teacher Education. Historical background, future trends, theoretical and practical considerations, construction of laboratory materials and evaluation procedures in a mathematics laboratory. For experienced and inexperienced classroom teachers, superintendents, principals and mathematics supervisors.

Topics of Middle School Mathematics. Prerequisites: 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).

Field Studies in Education. 1-4 credits, maximum 4. For students who need independent study and/or field experiences, such as spending a semester in an experimental program working with handicapped children in schools, in-depth studies in research projects, internships with school personnel.

Teaching Fundamental Concepts of Mathematics. Prerequisite: full admission to Teacher Education. Teaching the topics of the middle grades and the mathematics basic skill areas of the middle grades (grades 5-9).

Teaching Geometry in the Secondary School. Prerequisite: full admission to Teacher Education. Overview of the present secondary geometry curricula and future trends. Axiomatic development of Euclidean geometry. Problems and transformational geometry from the perspective of the secondary mathematics teacher. Study and comparison of contemporary secondary mathematics textbooks. Recommended to be taken concurrently with 3710 and MATH 4043.

Teaching Mathematical Modeling. Prerequisites: concurrent enrollment in MATH, full admission to Teacher Education. Strategies for teaching mathematical modeling. Problem classroom topics.

Multi-media Program Production. Prerequisite: 3122. Design and production of synchronized automated sound slide programs coordinated with subject matter content. Includes photographic techniques, audio recording and sound-mixing methods, graphics, and synchronizing techniques. Individual projects required.

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.

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.

Teaching LOGO in the Schools. Lab 0-2. Prerequisite: full admission to Teacher Education. Production, utilization, application of media available for educators using LOGO language. Includes methods and integration techniques for teaching LOGO in grades K-12.

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 childhood and drug-abusing needs of opportunities for student involvement in experimentation and exploration with a variety of two- and three-dimension media. Emphasis on constructive expressive 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.

Application of Advanced Technologies to Instruction. Prerequisite: 3122 or 3122 or consent of instructor. Production, utilization, application of media available through advanced technologies. Systematic instructional technology approach to teaching-learning process.

Introduction to Reading Problems. Lab 1. Prerequisite: 3283. Identification and treatment of reading problems in the classroom. Group and individual diagnostic procedures. Laboratory experiences are required.

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 listening, speaking and writing.

Skilled Development in the Reading Program. 1-3 credits, maximum 3. Lab 0-4. Prerequisite: 3283. Relationship between reading skills, child development and curriculum, and instructional strategies for sequential skill development in reading.

Reading in Content Areas in the Elementary School. 1-3 credits, maximum 3. Lab 0-4. Prerequisite: 3283. Integrating instruction in the elementary school curriculum with emphasis upon application of reading to various content areas.


Reading in the Elementary School. 1-4 credits, maximum 4. Lab 0-6. Prerequisites: 3283, 4233. Theory, methods and diagnostic procedures of reading in the elementary classroom. Taken concurrently with student teaching.

Social Studies in the Elementary School Curriculum. 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 social studies.

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 science content and the analysis of teaching, learning, and evaluation procedures for middle school science.

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.

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, intellectual, cultural, special needs, and learning materials aspects of the school classroom, kindergarten through grade 8. Purposes, selection, and organization of classroom management systems and teaching approaches.

Internship in Elementary Education. 1-12 credits, maximum 12. Lab 3-36. Prerequisites: 3450 and full admission to Teacher Education. Advanced clinical experience as associate (student) teacher in schools, kindergarten through grade eight. Graded on a pass-fail basis.

Kindergarten-Primary Education: Methods. 2-3 credits, maximum 3. Prerequisite: full admission to Teacher Education. Purposes, methods of teaching, classroom design and management, classroom routine, and selection and organization of content in kindergarten-primary education.

Reading for the Secondary Teacher. Prerequisite: concurrent enrollment in 3710. Materials and procedures in the teaching of reading in secondary schools for content area teachers.
5053* Fundamentals of Curriculum Development. A study of curriculum that includes philosophy, history, decision making, major concepts and terms.

5103* Advanced Computing Applications in Education. Lab 0-2. Prerequisite: 4043 or equivalent. Includes educational applications involving authoring systems, database management, hardware interfacing, and non-instructional uses within the school environment. Impact of current issues on instructional computing.

5113* Videotape Television for Instruction. Prerequisite: 4113, junior or senior standing. Production of videotape using single camera, small studio production and other technology. Individual and team projects.


5130* Advanced Studies in Children's Literature. 1-3 credits, maximum 6. Prerequisite: 4023. 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.

5133* Photography for Instruction. Prerequisite: 3122. Photography skills emphasizing 35mm and instanttype cameras with application to instruction and other communication situations such as photo-copying, use of high-contrast film for graphics, and simple photogra phy projects for school-age students.

5143* Language Arts in the Curriculum. Content and current issues in the language arts. Materials and methods for teaching the communication skills.

5153* Computer-Based Instruction Development. Lab 0-2. Prerequisite: 4043 or equivalent. Examinations of curriculum strategies, related research issues, and techniques for developing computer-based instruction. Students will develop and evaluate computer-based instruction with case studies.

5173* 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, supervising teachers and advanced students in early childhood education.

5223* Teaching Science in the Elementary School. Materials, methods and classroom procedures related to science in the elementary school.


5263* Remediation in School Mathematics. Lab 2. Prerequisite: 4150 or equivalent. Identification of specific learning disabilities in school mathematics. Selection of appropriate remedial measures. Completion of a case report.

5270* Practicum in School Mathematics. 1-3 credits, maximum 6. Lab 2-6. Prerequisite: 5283. 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.

5301* Workshop in Science Education. 1-4 credits, maximum 4. Develops and/or implements elementary and secondary science programs.

5323* Teaching Social Studies in the Schools. Curriculum, materials, and methods and procedures related to social studies.

5350* The Visual Arts in the Curriculum. 1-3 credits, maximum 6. Lab 2. Prerequisite: 4213. Creative approaches to the use of two- and three-dimensional media as they relate to various aspects of education. Opportunities available for periodic group and individual evaluation in order to give direction and significance to future growth.

5423* Developmental Reading at the Primary Level. Prerequisites: 3283, 4223 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.

5433* Developmental Reading at Intermediate and Secondary Levels. Prerequisites: 3283, 4223 and 4290 or 4473. Examination of the developmental reading curriculum at intermediate, middle school and secondary levels including evaluation of teaching methods and materials.

5463* Diagnosis and Treatment of Reading Problems. Prerequisite: 5423. Diagnosis of reading disabilities, remedial measures and work with clinical cases.

5473* Clinical Aspects of Reading Disability. Prerequisite: 5463. Refines the diagnostic and remedial skills of the student through the study of clinical instruments, research, informal measurements and remedial approaches used in reading clinics.

5510* 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.

5520* 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.

5613* Effective Teaching of Mathematics in the Secondary School. Prerequisite: consent of instructor. Directed advanced practicum in secondary school mathematical education. Includes study of current research findings in mathematical education, teaching strategies, materials and evaluation procedures in the secondary school. For experienced classroom teachers, superintendents, principals and supervisors.

5623* Curriculum for the Culturally Different Elementary School-age Child. Procedures, materials, curricula, techniques, instructional strategies, etc. to aid the teacher in developing an educational program for the culturally different child.

5633* Developmental Reading for College and Adult Learners. Identification of the needs, materials, curricula, and instructional strategies for college and adult readers. The study of illiteracy. Consideration of the development, organization and supervision of programs for such learners.

5720* 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 the full number of credit hours for which the workshop is scheduled for a particular term.

5752* Seminar in Education. Prerequisite: consent of instructor. Seminar topics may differ depending upon the nature of current interests and topics in American education.
Design, Housing and Merchandising (DHM)

1003 Design Theory and Processes for Apparel and Interiors. Lab. 4. Design elements, principles and processes applied to design and merchandising.

1103 Basic Apparel Construction. Lab. 4. Basic apparel construction techniques. Problems including basic fit, pattern selection and alteration, use of plaid, use of sewing machines and Sergers, and basic sewing techniques.

1123 Graphic Design for Interiors. Lab. 6. Interior design majors only. Drafting and visual communication techniques related to interiors.

1433 Fashion Innovation and Marketing. The process of fashion innovation; variables of fashion affecting production and distribution of consumer goods; development of present structure in the fashion industry.

2003 Creative Problem Solving in Design and Merchandising. Participatory problem solving in design and merchandising; critique of proposed solutions as a positive process of evaluation.


2110 Fashion Showmanship. 1 credit, maximum 8. Preparation, production and evaluation of special fashion-related events. Professional learning experiences will include modeling techniques, organization and directing procedures.

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.
3263 Interior Design Studio I: Residential. Lab 4. Prerequisites: 1123, 2093, 2993. Studio course utilizing the design process in the analysis and planning of residential environments.

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 Interior Structures. Lab 4. Prerequisites: 1123 and 2993. Materials and procedures used in the design and production of interiors and building structures.

3353 (S,SpD)Socio-Economic Aspects of Housing. Fam-ily housing needs, present social and economic con-ditions affecting housing and building processes and the roles of business and government in housing.

3363* Interior Design Studio II: Small Scale Contract. Lab 4. Prerequisites: 3263. Studio course utilizing the design process in the analysis and planning of small office, institutional and retail environments with emphasis on materials, lighting, codes and accessibility.

3373 Computer-aided Design for Interiors. Lab 4. Prerequisites: 3213, 3243. Computer-aided design and drafting for two-dimensional and three-dimensional interior systems.

3433 Fashion Retailing. Prerequisites: 2433, ACCTG 2103, ECON 1113. Marketing structures at retail level; job descriptions and responsibilities at management level; financial and control functions.

3533 Decorative Fabrics. Lab 4. Prerequisite: 3 credit hours in art. Historic and contemporary textile designs. Creation of textile designs using personal inspirations, cultural expressions and a variety of techniques.

3643 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.

3663 Fashion Promotion Media. Lab 2. Prerequisites: 1433 and completion of 60 credit hours. Advertising and other special-purpose media used in the promotion of fashion merchandise. Study and application of procedures used in planning, evaluating and directing effective sales promotion activities.

3823 Professional Practices for Interior Design. Prerequisites: 2343, 3263 and 3303. Future professional role and responsibilities, business procedures and employer-employee relationships which characterize the employment situation in interior design.

3853 Merchandise Display Essentials. Lab 2. Prerequisites: 2113, 2433 and completion of 60 credit hours. Study and application of principles and practices in arranging and displaying merchandise for commercial and educational purposes. Supervised experience working with merchandise from retail stores.

3991 Pre-internship Seminar. Prerequisites: 24 credit hours of required DHM courses and SPCH 2713. Skills required to completion of a directed, practical experience in a work situation within the fashion industry.

3994 Internship. Lab 8. Prerequisites: 3991 and consent of instructor. Directed practical experience in an approved work situation related to the fashion industry.

4011 Post Internship Seminar. Prerequisite: 3994. Study and comparison of student work experiences. Individual student conferences, review of merchant supervisor reactions.

4143* Housing for Special Groups. Problems and alterna-tive solutions for housing for special groups, e.g., the aged, children, the handicapped, low-income, women heads of families and single-person households. Includes field study or design problem.

4163* (H,J)Housing in Other Cultures. Housing and inte-rior design and expressions of cultural beliefs, attitudes, family patterns and environmental influences.

4243* Draping. Lab 4. Prerequisite: 2203. Interpretation of garment design developed through the medium of draping on dress forms.

4263* Interior Design Studio III: Large Scale Contract. Lab 4. Prerequisites: 3253, 3263, 3823. Studio course utilizing the design process in the analysis of large scale office planning and institution design including systems and specifications.

4293* Interior Design Studio IV. Lab 4. Prerequisite: 4263. Studio course developing comprehensive interior design projects in historic preservation and adaptive reuse and an advanced design project.

4323* (H)Heritage of Interiors II. Prerequisite: 3233 or consent of instructor. Religious, civic, commercial and domestic architecture and furnishing of the 19th and 20th centuries with emphasis on the periods and designers which have greatly influenced interior design.

4403* Creative Costume Design. Lab 4. Prerequisites: 3213, 3013 and 4243 or consent of instructor. Application of design principles and construction techniques in the development of original designs.

4443* Facility Management for Contract Interiors. Prerequisite: 4263. Philosophy and principles of facility management and the practice of coordinating the physical workplace in relation to the workforce and organizational structure of the corporate environment.

4453* Apparel Shop Entrepreneurship. Prerequisites: ECON 1113 and completion of 90 credit hours. In-depth study and development of individualized plans for opening a women’s or men’s apparel shop including entrepreneurship, accounting and control, merchandising and buying, operations and management, and advertising and promotions.

4523 Critical Issues in Apparel Design and Merchandis-ing. Prerequisites: ECON 1113 and senior standing. Relationships among the apparel design and merchandising industries and their external environments. Special emphasis on current issues and trends, forecasting, career contacts, and application of creative decision-making skills.

4553* Profitable Merchandising Analysis. Prerequisites: 3433 and 3994. Relationship analysis of profit and loss statement. Retail mathematical calculations necessary to plan and control merchandising results, open-to-buy, mark-up, mark-down, turn-over, stock-sales ratios.

4572* Analysis and Comparative Study of Fabrics. Lab 2. Prerequisites: 2573 and 4 credit hours of chemistry. Fibrous content, yarn construction, weaves, color and finish; standard methods of textile testing.

4810* Analysis of Current Literature Including Research in Design, Housing and Merchandising. 1-6 credits, maximum 6. In-depth study of specific areas of design, housing and merchandising.

4820 Professional Internship. 1-6 credits, maximum 6. Prerequisites: 3823 and consent of instructor. A supervised internship experience which simulates the responsibilities and duties of a practicing professional.

4850* Special Unit Course in Design, Housing and Mer-chandising. 1-6 credits, maximum 6. In-depth study of specific areas of 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 or in selected educational or research activities related to apparel merchandising and design.

5453* Textile Economics. Prerequisite: 9 credit hours of design, housing and merchandising. 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.

5653* 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.

5810* 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.

5830* 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 in design, housing and merchandising for the Ph.D. degree.


6133* 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 production of housing; supply and demand functions in the housing market, characteristics of the housing industry, the role and responsibilities of the consumer along with interactions among the many participants in the operation of the housing market.

6410* Independent Study in Design, Housing and Merchandising. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Selected areas of design, housing and merchandising for advanced graduate students working toward the doctorate degree.

6610* 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 doctoral degrees.

6830* Design, Housing and Merchandising Seminar. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Problems and recent developments in 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 general education credit for students also taking ECON 2013 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 stabilization; 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: 2013. 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. Analysis of a contemporary topic in economics. Course content will vary to reflect changing social issues and trends in applied economics.

3023* Managerial Economics. Prerequisite: 2023. Application of economic theory and methodology to decision problems in private industry, profit institutions and government agencies; demand and cost analysis, forecasting, pricing and investment.


3123* Intermediate Macroeconomics. Prerequisite: 2023. Development of a theoretical framework for studying the determinants of national income, employment and general price level. National income 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)Public Finance. Prerequisite: 3 credit hours in economics. The economic analysis of government sector. Scope of government activity, efficiency in government expenditures, federal budget, fiscal and debt management policy. Principles of taxation. Major tax sources, distribution, tax issues. Current public finance problems such as revenue sharing, negative income tax, urban transport systems and national health insurance.

3513* (S,SpD)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 theories of the labor movement, economic impact of unions and public policy toward labor.

3523* (S,SpD)Poverty and Economic Insecurity. Prerequisite: 3 credit hours in economics. Problems, programs and proposals for dealing with poverty and economic insecurity.

3613* (S)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* (S)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,SpD)American Economic History. Economic development 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.


4010 Basic Studies in Economics. 1-6 credits, maximum 6. Prerequisite: 3 credit hours in economics. Economic concepts, theories, issues and problems. Designed for elementary and secondary teachers. Economics education teaching methods included.

4213* Econometric Methods. Prerequisites: 2023, STAT 3013 or 4013. Basic quantitative methods used in economic analysis emphasizing applications to economic problems and interpretation of empirical results. Statistical analyses, regression and forecasting techniques using computer programs.

4223* Business and Economic Forecasting. Prerequisites: 2023; STAT 3013 or 4013. Forecasting business and economic variables. Regression, autoregressive models and time series models such as exponential smoothing models, seasonal models, and Box-Jenkins models. Evaluation of methods and forecasting accuracy. Application of methods using computer programs.

4313* Advanced Banking. Prerequisite: 3313. Central and commercial banking, including Federal Reserve policymaking, banking structure, capital adequacy and taxation, deposit insurance and the Fed's role in the payment system. A study of the Federal Reserve System's role in the domestic and international economy.

4413* (S)State and Local Government Finance. Prerequisite: 3 credit hours in economics. State and local government revenue and expenditure patterns in a federal fiscal system; intergovernmental fiscal problems; taxation in a federal system; adjustment to economic growth and change.
Economics

4513 Labor and Public Policy. Prerequisite: 3513 or MGMT 3313 or BUSL 2113. Research on public policy affecting union management relations; common law; state and federal legislation; Wagner, Taft-Hartley and Landrum-Griffin Acts; labor dispute adjustment with emphasis on the theory, legal status and practice of arbitration, in both private and public sectors.

4643 (L) International Economic Development. Prerequisite: 3 credit hours in economics. Problems of underdeveloped economics related to the world economy: obstacles to economic growth and policies for promoting growth.

4713 (S) Economics of Industries. Prerequisite: 2023. Industrial organization of major U.S. industries. The structure-conduct-performance paradigm is used to evaluate how costs and concentration interact with pricing, marketing and R&D decisions to affect industry profitability, technological progress, and the efficient allocation of resources. Case studies included.

4723 Economic Analysis of Law. Prerequisite: 3 credit hours in economics. Use of economic analysis to explain why certain laws exist and to evaluate the effects of various alternative rules of law on economic efficiency and behavior. Emphasis on the economics of the common law areas of property, contracts, and torts. Also, products liability, crime and punishment, distributive justice, and discrimination.

4823 (S) Comparative Economic Systems. Prerequisite: 2023. Comparative analysis of the economic theory and institutions of capitalism, socialism, and mixed systems.

4913 (S) Urban and Regional Economics. Prerequisite: 3 credit hours in economics. Urban and regional economics: the spatial aspects of poverty, land use, the urban environment and rural industrial development.

4923 United States Economic Development. Prerequisite: 2023 or 2123. Changing patterns of human and material resource 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.

5003 Research Report. Prerequisite: consent of committee chairperson. Supervised research for M.S. report.

5010 Research and Independent Studies. 1-3 credits, maximum 10. Prerequisite: consent of departmental committee under a workshop arrangement or supervised independent studies.

5113 Managerial Economics. Economic theory applied to business decision making. Concepts of microeconomics and macroeconomics related to understanding the economic system, analysis of policy, forecasting, and international economics. No credit for M.S. and Ph.D. students in economics.

5123 Microeconomic Theory I. Prerequisites: 3113, MATH 2265 or MATH 2713. Contemporary price and allocation theory with emphasis on comparative statics.

5133 Macroeconomic Theory I. Prerequisites: 3123, MATH 2265 or MATH 2713. National income, employment and the price level from the point of view of comparative statics.

5223 Mathematical Economics I. Prerequisites: 3113, MATH 2265 or equivalent. Mathematical concepts of single variable and multivariate calculus, topological properties of Euclidean space, convergence, linear algebra, optimization theory, and the Kuhn-Tucker Theorem with applications from economic theory.

5243 Econometrics I. Prerequisite: 4213 or STAT 4043. Theory and application of econometrics to economic problems. Topics include OLS, GLS, distributed lags, serial correlation, heteroskedasticity, and simultaneous equations.

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 Palliker, Wicksell, Fisher and Keynes.

5413 Economics of the Public Sector I. Allocation and distribution effects as well as incidence of government budget policies.

5433 Economics of the Public Sector II. Fiscal policy as a means of promoting economic stabilization and growth.

5533 Manpower Analysis. Introduction to the manpower field; recruitment, training, motivation and utilization of human resources both within employing units and throughout 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 allocation of jobs 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 approach 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 resource allocation models; the theory of international and 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 economy; 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 18th 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 environment.

6000 Research and Thesis. 1-12 credits, maximum 30. Prerequisite: approval of advisory committee. Workshop for the exploration and development of research topics. Research leading to the Ph.D. dissertation.

6010 Seminar in Economic Policy. 1-3 credits, maximum 6. Intensive analysis of selected problems in economic policy. Individual research, seminar reports and group discussion of reports.

6113 Seminar in Economic Theory. Microeconomics.


6133 Microeconomic Theory II. Prerequisite: 5123. Contemporary time and allocation theory with emphasis on general equilibrium analysis. Welfare economics.

6143 Macroeconomic Theory II. Prerequisite: 5133. National income, employment and the price level from the point of view of dynamics. Growth models.

6223 Mathematical Economics II. Prerequisite: 5223. A mathematical approach to general equilibrium and welfare economics.

6243 Econometrics II. Prerequisite: 5243. Advanced econometric theory covering single and simultaneous equations, seemingly unrelated regressions, limited dependent variable models, causality, and pooled models.

6813 Seminar in Economics Systems. Selected topics dealing with the economic theory and institutions of capitalism, socialism, communism, and fascism. Individual research, seminar reports, and group discussion of reports.

Education (EDUC)

1111 Orientation to Education. Required of all first-year freshmen in the College of Education. An orientation course; study of the profession of education with particular emphasis on the skills and qualities required.

2510 Innovative Education Studies. 1-3 credits, maximum 6. Designed to meet unique or special needs of individuals involved in education. Topics include contemporary approaches to meeting educational challenges on the professional as well as the personal classroom experience. Graded on a pass-fail basis.

3110 Honors Directed Study. 1-3 credits, maximum 3. Prerequisite: admission to College of Education Honors Program. Individualized directed study approved by a sponsoring professor or Honors coordinator.

4050 Honors Colloquium. 1-9 credits, maximum 9. Prerequisites: junior standing and consent of instructor or Honors coordinator. Study of an interdepartmental and interdisciplinary nature of various important issues and aspects as related to the field of education. Provides an intellectual challenge for the able student with a strong dedication to scholarship.

4110 Teacher Education Seminar. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Problems, trends, and pertinent education issues. May include simulation, small-group instruction and field-based experiences. For the pre-service or in-service level.

4920 Teacher Education Practicum. 1-9 credits, maximum 9. Prerequisites: admission to Teacher Education and 15 credit hours of professional education. Directed observation and supervised laboratory and clinical experiences in appropriate teacher education program areas. Appraisal and learning theory approaches employed.
Educational Administration and Higher Education (EAHED)

4223* Community Education: A Synopsis. Lab 1. Prerequisite: 3 hours of one of the following: CIED 2113, HEFCS 2113, or CIED 2413. 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.

5940* Organization and Administration of Occupational Education. 1-3 credits, maximum 6. The organization and implementation of vocational-technical education, with special attention on federal-state-local organizations and the implications of current legislation for implementing new programs.


6003* Educational Ideas. Seminar for majors in EAHED. Decision-making processes utilized in educational systems today.

6230* Critical Issues in Higher Education. 1-3 credits, maximum 9. Prerequisite: 6753. Issues that have shaped and are shaping higher education in American society.

6243* Organization and Administration in Education. Research and best practice in the organization and administration of educational organizations.

6250* The Principalship. Prerequisites: 5813, 6243 and 6263. Strategies, techniques and solutions the principal can utilize in the operation of a public school. Developing policy statements, handbooks, budgets and schedules.

6263* Supervision. The place of supervision in the improvement of instruction; a study of fundamental principles and procedures.

6333* Public School Business Management. Prerequisite: 5833. Knowledge and skills in budget planning and development, administration, and evaluation. School accounting and other business management topics.

6335* The Superintendency. Prerequisite: consent of instructor. Integration of theory and practice through examination of roles and responsibilities of the superintendent. Particular emphasis on leadership, communications, and the changing nature of public education.


6393* School Personnel Administration. Relationships between administration and other school personnel; recruitment, selection, promotion, morale, salary, staff relations and evaluation of teaching.

6420* The Politics of Education. 2-3 credits, maximum 3. Activities of schools as they relate to the political environment; e.g., voter behavior, change strategies and community power structures.


6465* Higher Education Law. National and state constitutional provisions, laws, and court cases concerning higher education. Considerable legal research required.

6473* Practicum in Instructional Supervision. Prerequisite: 6823 or consent of instructor. Application of modern approaches to 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.

6603* Organizational Theory in Education. Prerequisite: 6243. Selection of 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.

6650* Problems in Educational Administration. 1-4 credits, maximum 8. Prerequisite: consent of instructor. Special administrative problem in common schools or higher education, e.g., school plant, school/community relations, administration and the instructional programs, attrition and finance.

6682* The Community Junior College. The American two-year college including historical and philosophical development, curricula, students and the learning process, faculty and instruction, administration and governance, support and control. Principles, practices and problems of community junior colleges in America.

6703* Finance in Higher Education. Prerequisite: 6753. Problems and prospects of financing American education, with in-depth discussion of selected topics, e.g., social capital, federal aid, faculty salaries and state support.

6710* Special Problems. 1-4 credits, maximum 8. Prerequisites: 5833 and administrative experience. Problems in organizing and administering programs with either recurrent or unique problems arising in common schools or in higher education. Emphasizes evaluation and planning related especially to staff, programs and faculty needs.

6713* Effective Teaching in Colleges and Universities. Research findings on teaching-learning relationships at the college and university level. Study of methods employed to encourage, guide and evaluate student learning. Investigation and appraisal of newer instructional methods and trends.

6720* Education Workshop. 1-4 credits, maximum 8. Enables public school and higher education personnel to analyze instructional and/or administrative problems.

6730* Planning and Educational Change. 1-4 credits, maximum 4. Includes organizational and environmental parameters, sources of change, barriers to change, and strategies for planning and implementing organizational change.

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.
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 and 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 ENGSC 3613. Data processing and reduction techniques.

3113* Energy Conversion I. Lab 2. Prerequisite: 3613, concurrent enrollment in 3013, 3313. Physical principles of electromagnetic and electromagnetic energy conversion and devices and their application to conventional transformers and rotating machines. Network and phasor models; steady-state performance.

3213* Microcomputer Principles and Applications. Lab 2. Prerequisite: junior standing or above. Introductory microcomputers. Digital logic elements and number systems, memory components and organization. Microprocessor and microcomputer system architecture, assembly language programming, software development, interfacing techniques.


3313* Electronic Fundamentals and Applications. Prerequisite: 3713, ENGSC 2613, MATH 2613, concurrent enrollment in 3113, 3313. Semiconductor electronic components including MOSFETs, BJTs, JFETs, and OpAmps. Emphasis on device models and use of simple electronic devices to analyze, synthesize, and design amplifiers and switching circuits, SPICE simulations are extensively utilized. Basic building blocks for analog and digital applications.

3413 Controls I. Prerequisites: ENGSC 2122; ENGSC 2613, MATH 2613; concurrent enrollment in 3613 and 3713. 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 locus diagram.


365 Fundamentals of Electromagnetic Fields. Lab 2. Prerequisites: ENGSC 2613, MATH 2613, concurrent enrollment in 3413, 3713. Maxwell’s equations and their application to engineering problems in electrostatics, magnetostatics, plane 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. Prerequisites: ENGSC 2613, MATH 2613; concurrent enrollment in 3413 and 3713. Laplace transform, transfer functions, magnetically coupled circuits and two-port networks.


4001* Electrical Engineering Seminar. Prerequisite: senior standing. Topics on professionalism, technical and professional societies, and current industrial developments. Individual or group reports prepared and presented.

4010* Technical Problems and Engineering Design. 1-12 credits, maximum 12. Prerequisite: consent of instructor. Individual independent study projects selected in consultation with the instructor; analysis or design problems, literature searches and computer simulations may be involved.

4013 Senior Design Laboratory I. Lab 4. Prerequisites: 3013, 3113, 3413, and 3213 or 3233. Complete design cycle for several small design projects, each including establishing objectives, synthesis, analysis, construction, testing and evaluation. Use of modern lab equipment and fabrication techniques. Development of communication skills.

4023 Senior Design Laboratory II. Lab 4. Prerequisite: 4013. Continuation of ECEN 4013. Student project team and reports on realistic projects from university and industrial sponsors. Formulation of specifications, consideration of alternative solutions, feasibility of design, detailed system description, economic factors, safety, reliability, aesthetics, ethics and social impact.

4133* Power Electronics. Prerequisite: 3113. Power electronic devices, components, and their characteristics. DC/AC converters, inverters, and cycloconverters. Design of waveshaping devices; application aspects; control aspects; characteristics and state-of-the-art of advanced power inverter and power conditioning topologies.

4153* Power System Analysis and Design. Prerequisite: 3113. Power system component models from circuit theory. Formulation and design of the load flow model and the optimum economic generator allocation problem using computer methods.


4243* Computer Architecture. Prerequisites: 3213 and 3333. Structural organization and hardware design of digital computer systems. Review of logic circuits, integrated circuit functions and data representation. Register transfer language, CPU organization, microprogram control, arithmetic processor design, input/output and memory organization. Survey of advanced architectures.

4263* Computer Engineering Projects. Lab 2. Prerequisites: 3113, 3233, 4013 and 4213. Team projects involving design, construction, and testing of hardware interfaces with mini- and micro-computers in instructional laboratory. Emphasis on software and hardware documentation. IEEE-488 bus; interface chips; comparison of minicomputer operating systems; IEEE-488 bus; bus analyzer; LSI interface chips; mini- and micro-computers as laboratory tools and system components.

4273* Software Engineering. Lab 2. Prerequisites: COMSC 2133, 3443 or ECEN 3213. Fundamental characteristics of the software life cycle. Tools, techniques, and management controls for development and maintenance of large software systems. Software metrics and models. Human factors and experimental design. Same course as COMSC 4273.


4303* Digital Electronics Circuit Design. Lab 2. Prerequisite: 3313. Theory of digital and electronics circuits. Digital logic families TTL, IIL, ECL, NMOS, CMOS, GaAs. Large signal models for transistors, implementation at RAM and ROM. Circuit design for LSU and VLSI.


4353* Communication Electronics. Prerequisite: 3313. Design of tuned voltage and power amplifiers, oscillators and mixers, modulation and detection, and parametric amplifiers.

4413* Controls II. Prerequisites: 3413, 3513, 3713. Design of analog and digital feedback control systems, review of functions and state variable models for continuous-time and discrete-time systems, sampling, relationship between pole locations and time response, frequency response, system stability, root locus design, continuous-time and discrete-time compensation techniques, state variable feedback and pole positioning design.


Plasma Dynamics and Microwave Electronic Devices. Prerequisite: 3613. Plasma phenomena and their application to practical devices. Devices that relate the plasma to solid-state space, distribution functions, momentum transfer, Boltzmann equation, motion of charged particles in electromagnetic waves, hydromagnetic waves in plasmas, pinch effect, etc. Electron beams, klystrons, plasma, traveling-wave amplifiers and oscillators.

Active Filter Design. Lab 2. Prerequisites: 3413 and 3713. Introduction to passive filters; operational amplifiers as network elements; filter specifications; design of active filters. Laboratory design projects and computer simulations.

Introduction to Network Synthesis. Prerequisite: 4703. Network functions and their reliability, driving-point synthesis, passive and active network synthesis.


Thesis or Report. 1-6 credits, maximum 6. Prerequisite: approval of major professor. A student studying for the master's degree will enroll in this course for a maximum of six credit hours.

Professional Practice. 1-8 credits, maximum 8. Experience in application of electrical engineering principles to typical problems encountered in industry and government engineering design and development projects. Solutions to the problems require participation by the student in the role of junior engineer or engineer-intern. Problem solutions involve economic and ecological considerations as well as technological, and must be adequately documented.

Seminar. 1-12 credits, maximum 12. Prerequisite: consent of adviser. Students investigate certain engineering problems not normally covered in existing courses.

Energy Conversion II. Prerequisite: 3113. Dynamic model of rotating electromechanical energy converters in terms of the generalized machine concept. Time-domain transient simulations are utilized to reduce the complexity of the model and to obtain the steady-state response.


Engineering Systems Reliability Evaluation. Techniques and concepts needed for evaluating the long-term and short-term reliability of a system. Topics include static and spinning generation capacity; transmission, composite, interconnected, and dc system reliability evaluations; and power system security. Applications to systems other than power systems included. For students with little or no background in probability or statistics.

Direct Energy Conversion II. Energy conversion techniques and applications; thermoelectrics, thermionics, fuel cells, MHD and other processes involving electrical, mechanical and thermal energies. State-of-the-art developments in direct energy conversion using magnetic, thermal, and photovoltaic effects. Direct energy conversion from and to solar energy. Gives the student a proper perspective of the possibilities and problems associated with satisfying future energy requirements.


Microcomputer System Design. Prerequisites: 3213 and 3233. Design, construction, programming, debugging and documentation of microcomputers interfaced to peripheral devices. Electronics considerations for incorporating different families of IC’s and discrete components as needed. Specialized software to integrate the computer and its peripherals. Experimental opportunities provided.


Digital Computer Design. Prerequisite: 3233. Analysis and design of digital computers. Arithmetical algorithms and the design of the arithmetic/logic unit (ALU). Serial and parallel data processing; control and timing systems; microprogramming; memory organization alternative input/output interfaces. Same course as COMSC 5253.


Advanced Software Engineering. Lab 2. Prerequisite: 4273. Continuation of 4273. Advanced theory and practical exposure to software design methodology. Large scale design and implementation problems. Experimental design for software engineering. Same course as COMSC 5273.


Power Electronic Devices. Prerequisite: 4133. Characteristics of high power semiconductor devices. Design of high power power electronic devices and the application of such devices to power conditioning, inversion, and wave shaping at high power levels.

CMOS Analog Integrated Circuit Design. Prerequisite: 4313. Advanced study of solid state CMOS linear integrated circuits. Topics include: Op Amps, comparators, multiplexers, D/A and A/D converters and Op Amp building blocks. Opt Amp building blocks include, differential pairs, current mirrors, gain, output stages and feedback references. VLSI layout and circuit simulation using SPICE.


Modern Communication Theory. Prerequisite: 5513. Noise as a random process, analog and digital signal detection in the presence of noise, optimum receiver design using signal space concepts and introduction to information theory. Trade-offs between bandwidth, signal-to-noise ratio and the rate of information transmission. Example system designs include earth satellite, deep space and terrestrial communication systems and computer communication networks.

Data Transportation and Protection. Data and its representation; finite field matrices, pseudorandom sequences; information protection; space division networks; synchronization; and channel and error control.

Telecommunications Systems. Prerequisite: graduate standing. Voice, TV and data communications theory. System level design criteria for NTSC and HD television, ISDN, packet switching, cellular mobile switching, PBX, cable and fiber optics systems, microwave and satellite relay systems.

Foundations of Electrodynamics I. Prerequisite: 3613. A rigorous derivation of Maxwell's equations utilizing Coulomb's law and postulates 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 directivity, efficiency, radiation patterns. Analyzers: loop, aperture, broadband, and traveling wave antennas. Array theory. Introduction to numerical techniques used in modern antenna design.


5653* Application of Electromagnetic Theory I. Intermediate-level treatment of applications of classical electromagnetic theory; cavity resonators, waveguides, refraction and scattering, surface waves, antennas, and radiation. Sufficient mathematical sophistication to equip the student for state-of-the-art research in the area.

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. Failure of superposition; phase plane and phase space techniques; method of perturbations, asymptotic, orbital and structural stability. Subtopics include advanced generalized approaches to nonlinear systems analysis.

5733* Neural Networks. Prerequisites: 5513, 5713 or equivalent. Introduction to mathematical analysis of networks and learning rules, and on the application of neural networks to certain engineering problems in image and signal processing and control systems.


5763* Digital Signal Processing. Introduction to discrete linear systems, z transforms, sampling, aliasing, noise, 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.

5783* Random Systems Modeling and Analysis. Random dynamical systems; development of discrete modeling techniques involving state variables, Markov chains and discrete random systems. Digital implementation of algorithms for random systems featuring engineering tradeoffs between accuracy, response time, equipment requirements and complexity.

5793* Digital Image Processing. Prerequisite: 5763. Digital image processing including acquisition and characterization of images, coding, enhancement, restoration and segmentation. Use of transforms. Use of ECEN VAX/COMTAL image processing system to develop skills in using and writing image-processing software.


6000* Research. 1-30 credits, maximum 30. Prerequisite: consent of major professor. Independent research for students continuing graduate study beyond the level of the M.S. degree.

6050* Special Topics. 1-9 credits, maximum 9. Prerequisite: consent of instructor. Subjects to be selected by the graduate faculty in electrical engineering to cover state-of-the-art advances.

6123* Special Topics in Power Systems. Prerequisite: 5113. Selected relevant current 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 may include pipelining, multiprocessors, 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.

6523* Introduction to Information Theory. Prerequisite: 5513. Mathematical theory of information (Shannon theory) including entropy, mutual information, data compression, and retransmission rates and capacities. Source coding theory including algebraic and error-correcting codes. Design of waveforms for noise immunity. Information transfer in learning systems.

6550* Topics in Statistical Communication Theory. 1-3 credits, maximum 6. Prerequisite: 5513. Advanced topics from current developments in coding learning and adaptive 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: 5753 or M5 753. Topics in nonlinear systems theory selected from the current literature. May include nonlinear stability theory, multi-input multi-output systems, nonlinear feedback control theory, the problem of Lure and Popov's criterion, multivariable perturbation theory.

6813* Solid-state Techniques. Prerequisite: 5813. Device fabrication; wafer preparation, etching and masking techniques, alloying, bonding, testing, Epitaxial techniques, specialized topics.

6823* Advanced Optical Techniques. Prerequisite: 5813 or 5853. State-of-the-art optical devices and research methodologies. Investigation and discussion of contemporary developments in non-linear optical devices and laser applications. Includes both analytical and experimental techniques.

Electrical Power Technology (EPT)
Electronics and Computer Technology (ECT)

1003 A


1225 Electronic Amplifiers I. Lab 1. Prerequisite: MATH 1715 or MATH 1613, MATH 2373. Discrete solid state devices. Study of PN junction and field effect devices in amplifier and other circuits. Elements of biasing, stabilization, feedback and gain determination.

1244 Circuit Analysis I. Lab 3. Prerequisites: 1104 and MATH 1715; Co-requisite: 1224. Transient analysis of electric circuits. The use of network theorems. Resonant circuits and filters and AC power including three-phase.

2213 Essentials of Electricity. Lab 2. Prerequisites: MATH 1513, 1613. Electric circuits and machines, including Ohm's law, magnetism, direct-current motors, generators and controls, alternating current, single-phase circuits, polyphase circuits and alternating current machinery. For non-electronics majors only.

2303 Measurements and Control. Lab 2. Prerequisites: 1224 and 1244. Corequisite: 2544, MATH 2373. Electrical and electronic measurement techniques. Programming and use of programmable logic controllers. Emphasis on acquiring a measurement and developing the control-signal logic.

2544 Pulse and Digital Techniques. Lab 3. Prerequisites: 1224, 1244, and MATH 1613. Electronic circuits used in digital control and computation. Pulse generation, Boolean algebra and logic circuits.

2633 Microcomputer Principles and Applications. Lab 3. Prerequisite: circuit cards to mil-spec, including computer-aided layout and use of surface mount technology. Environmental testing and quality control as applied to circuit card construction.


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 2643. 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. Magneto, liquid penetrant, ultrasonic and eddy current testing.

3263 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.

3354 Advanced Circuits I. Lab 1. Prerequisites: 2634, 3113, MATH 2383. Fundamentals of mixers, oscillators, detection, modulation, amplifier strips, feedback, coupled circuits and impedance matching.

3363 Data Acquisition and Control. Lab 2. Prerequisite: 2633. Data acquisition and the control of automatic test equipment through the IEEE 488 BUS. Transducers D/A and A/D converters, multiplexers, and sample/hold circuits included. Use of a microcomputer in controlling test equipment. Silicon-controlled rectifiers as power-control devices.

4050 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 3. Prerequisites: 2633, 2634 and 3263. Data communications including multiplexing concepts, sampling techniques, encoding techniques. Telemetry, digitized voice, TTY, and bulk transmission systems.


4654 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.

4833 Senior Project. Lab 3. Prerequisite: 20 credit hours of upper-division electronic 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 adviser. Application of credit to meet degree requirements varies with level and department.

2100 Orientation Projects. Lab 2-6. 1-3 credits, maximum 3. Prerequisite: senior standing in EPT 3103. 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 1314 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. 1-6 credits, maximum 12. Prerequisites: junior standing and permission of Co-op coordinator. Pre-engineering industrial practice. Written reports as specified by adviser. 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: 45 hours of credit. Applications of basic principles of sound and speech to the electronic area.

4000 Co-op Industrial Practice III. 1-6 credits, maximum 12. Prerequisites: senior standing and permission of Co-op coordinator. Pre-engineering industrial practice. Written reports as specified by adviser. Application of credit to meet degree requirements varies with level and department.

4060* Topics in Technology and Society. 1-3 credits, maximum 6. Prerequisites: sophomore standing and permission of instructor. Special problems in technology and added problems stemming from their solution. Minimal reliance on mathematics; for engineering and nonengineering students.

5000* Studies in Engineering Instruction and Research. 1-3 credits, maximum 6. Prerequisites: current or expected appointment as a graduate teaching or research assistant. Familiarizes the participant with 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 2041 and MATH 2265. Results of forces on systems, static equilibrium of rigid bodies and statics of structures. Shear and moment diagrams.

2122 Elementary Dynamics. Prerequisite: 2112. Kinematics and kinetics of particles, systems of particles, and rigid bodies from a Newtonian viewpoint utilizing vector algebra and calculus. Work energy and impulse-momentum principles.

Engineering Science 235
1413 Critical Analysis and Writing II. Prerequisites: "A" or "B" in 1113 or 1213. English ACT score of 30 and consent of course director. Individually directed writing growing 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, Twain, Faulkner, 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.

2333 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 (H)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. Same 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.

2893 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,SpD)Classical Mythology. The heritage of classical Greek and Roman myths as revealed in selected examples of British and American literature.

3131 Materials Science. Prerequisite: CHEM 1515. Introduction level. Relationship between structure and properties of materials and engineering applications. Atomic, microscopic and macroscopic properties.

3173 (H)Ethics and Literature. Exemplifying ideals and values in non-Western cultures.

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 regulatory grammar and rhetoric as applied to the writing process.

3240 Criticism. 3 credits, maximum 6. Study and application of principal critical theories in literature, film, or technical writing.

3323 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 audienies 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 (H)British Literature to 1600. Historical development. Major writers and their works.

3633 (H)British Literature 1600-1800. Historical development. Major writers and their works.

3643 (H)British Literature 1800-1900. Historical development. Major writers and their works.

3653 (H)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.

403* Descriptive Linguistics. Prerequisite: 9 credit hours of English. The methodology of linguistic analysis.

4083* Applied Linguistics. Prerequisite: 9 credit hours of English. The application of linguistic theory to literary analysis.


4283* (H)Aesthetics of Film. Major theoretical approaches to the art of cinema: auteursm, semiotics, structuralism, historicism.

4303* (H)British Drama 1500-1660. Genre development. Major writers and their works.


4323* (H)British Drama Post 1800. Genre development. Major writers and their works.

4333* (H)American Drama. Genre development. Major writers and their works.
Major writers and their works.

Genre development. Major writers and their works.

4833*

British Victorian Poetry.

4803*

Literature by Women. Such as The Bible, The Prelude, Moby Dick, Ulysses.

3 credits, maximum 6. The collection of literature by women in English including 3323. Practice of writing resumes, proposals, abstracts and articles. Concentrated review of mechanics, proofreading, editing and interviewing techniques. Second eight weeks will include internship 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: 6 credit hours of English. Scientific and technical editing skills; emphasis on editing 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.

4642*

Advanced Poetry Writing. Prerequisite: 3043. Student practice and composition.

4653*

Advanced Scriptwriting. Prerequisite: 3053. Student practice and composition.

4702*

Chaucer. The Canterbury Tales in Middle English.

4713*

Shakespeare. 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*

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.

4803*


4813*


4823*


4833*


4843*


4853*

American Novels. Genre development. Major writers and their works.

4863*


4893*

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.

5000*


5013*

Introduction to Graduate Studies. Principles and procedures in scholarly research.

5023*

Old English. Major works in Old English.

5033*

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 Pound's Cantos.

5063*

Seminar in Shakespeare. Intensive study of a limited number of plays. Assignment of problems to individual students.

5070*

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 language; e.g. cross-cultural communication, materials preparation, bilingual education.

5130*

Studies in English Grammar. 3 credits, maximum 6. Selected study of current topics in grammatical theory as it applies to the teaching 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, maximum 9. Specialized readings or independent studies.

5213*

Teaching Freshman Composition. Materials and methods of instruction in freshman composition.

5223*


5243*

Teaching English as a Second Language. Theories of second language acquisition. Materials and methods of instruction.

5293*

Interdisciplinary Uses of English. Interdisciplinary 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 language courses.

5333*

Seminar in TESL: Testing. Standardized testing for teaching English as a second language.

5410*

Seminar in British Literature of the 16th Century. 3 credits, maximum 6. Selected writers and their works, themes and literary developments of the 16th century.

5420*

Seminar in British Literature of the 17th Century. 3 credits, maximum 6. Selected writers and their works, themes and literary developments of the 17th century.

5440*

Seminar in British Literature of the 18th Century. 3 credits, maximum 6. Selected writers and their works, themes and literary developments of the 18th century.

5460*

Seminar in British Literature of the 19th Century. 3 credits, maximum 6. Selected writers and their works, themes and literary developments of the 19th century.

5480*

Seminar in British Literature of the 20th Century. 3 credits, maximum 6. Selected writers and their works, themes and literary developments of the 20th century.

5520*

Internship in Technical Writing. 1-3 credits, maximum 6. Practice in writing appropriate documents such as proposals, manuals (software, hardware, reference, training), articles, functional specifications in job-simulation situations. Review of academic materials as appropriate.

5533*

Seminar in Advanced Technical Writing. Specialized 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 production; developing scientific and technical editing skills; special emphasis on editing project.

5630*

Seminar in Early American Literature. 3 credits, 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 writers and their works, themes and literary developments of the 19th century.

5680*

Seminar in American Literature of the 20th Century. 3 credits, maximum 6. Selected writers and their works, themes and literary developments 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 to material for creative component option (M.A.). Graded on a pass-fail basis.

6000*


6133*


6143*

Studies in Creative Writing: Poetry. Prerequisite: 5743. Individual projects in poetry.
Entomology (ENTO)

2003
Insects and Society. Insect development, behavior, ecology, and the relationship of insects to society.

2023
Introduction to the Science of Entomology. Lab 2. Basic structure, function and classification of insects and closely related animals. Coverage of insects in ecosystems and development of control programs that reduce reliance on chemical pesticides.

2653
Insect Behavioral Ecology. Lab 2. Prerequisite: 2023 or consent of instructor. Pinciples of insect responses to stimulation with emphasis on behaviors related to mating, feeding on plants or animals and to environmental conditions. How these responses affect insect density and distribution.

3003
Livestock Entomology. Lab 2. Economic importance, 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
(N)Apiculture. Biology of the honeybee and other bees.

3331
Insect Pests of Agonomic Crops. Lab 2. Prerequisite: 2023 or concurrent enrollment. Sampling and decision-making processes for evaluation and control of insect pest populations in agronomic crops. Coverage of identification of pests and beneficials and damage symptoms resulting from insect feeding in crops.

3421
Horticultural Insects. Prerequisite: 2023 or concurrent enrollment. Identification, biology and control of pests attacking horticultural crops. Emphasis on pests injurious to vegetables, fruits, pecans, greenhouse plants, turf and ornamental trees and shrubs.

3463
Forest Insects. Lab 2. The biology and control of insects injurious to shade tree, forest and forest products.

3883

4123
Household and Structural Pests. Lab 4. Prerequisite: 2201 or 3553. Classification and practical work on control of insects and rodents in dwellings, warehouses and other commercial establishments.

4223

4523
Principles of Insect Pest Management. Lab 2. Prerequisite: 3112 or 3332 or 3553. Modern concepts of pest regulation and the influence of alternatives on the agrochemical system and economics of crop production. Identification of ecologically important insect pests in the Southwest.

4800
Undergraduate Traineeship. 1-5 credits, maximum 5. Prerequisite: consent of instructor. Participation in research or extension pest management programs of Departmental faculty.

4854
Medical and Veterinary Entomology. Lab 4. Prerequisite: 3553. Biology and control of insects affecting public health.

4913
Pesticides in the Environment. Prerequisites: BISC 1403, CHM 1225. A discussion of pesticides (chiefly fungicides, insecticides, herbicides and nematocides), including potential movement, degradation, fates and significance in the environment.

5000

5002
Insect Biochemistry. Prerequisite: BIOCH 3653. Biochemical processes in insects with emphasis on how biochemical pathways are used by the insect to adapt to its environment.

5020
Special Problems. 1-8 credits, maximum 8. Prerequisite: graduate standing. Selected studies in the area of entomology, acarology or araneology.

5043
Insect Physiology. Prerequisites: course in organic chemistry and 9 credit hours biology. Functions of the organ systems of insects. Lecture-demonstrations of selected insect physiology techniques.

5224
Classification and Biology of Immature Insects. Lab 6. Prerequisite: 3554. Classification, collection, preservation and biology of immature insects.

5330
Advanced Systematic Entomology. 1-5 credits, maximum 5. Prerequisite: 5464. Special problems in advanced systematic entomology.

5332
Literature of Zoological Science. Prerequisite: BISC 1602 or equivalent. Mechanics of the library, use and preparation of bibliographies, preparation of a scientific paper, taxonomic indices and literature.

5464
Systematic Entomology. Lab 4. Prerequisite: 3553 or equivalent. Classification and comparative biology of terrestrial insects.

5512
Biological Control. Prerequisite: 4523. Principles and practices of insect control with inimical organisms.

5550
Advanced Agronomic Entomology. 1-5 credits, maximum 5. Prerequisite: 4523. Special problems in advanced agronomic entomology.

5612
Host Plant Resistance to Insects. Prerequisite: AGRON 3553. Insect population management by host plant resistance.

5610
Insect Morphology. Prerequisite: 3553. Insect development and comparative morphology.

5600
Readings in Integrated Pest Management. 1-2 credits, maximum 2. Prerequisite: 4523 or equivalent. Reading and discussion of current publications relating to biological and economic theories that form the basis for integrated pest management (IPM) programs.

5710
Advanced Medical and Veterinary Entomology. 1-6 credits, maximum 5. Prerequisite: 4854. Special problems in methods of disease transmission, animal parasite control and the relationships existing between parasite and host.

5733

5753
Insecticide Toxicology. Prerequisite: organic chemistry or 15 credit hours biology. Properties and mode of action of the major insecticidal materials. Assessment of their impact on the environment.

5850
Epidemiology of Arthropod-borne Diseases. 1-4 credits, maximum 4. Lab to be arranged. Prerequisite: 4854 or equivalent. The relationships existing between the hosts, arthropod vectors and causal agents of disease and the principles of disease prevention or suppression by the intelligent use of biological principles.

5870
Seminar. 1 credit, maximum 5. Prerequisite: consent of instructor. Written and oral reports and discussion of recent developments in entomology.

6000
Doctoral Research and Dissertation. 1-10 credits, maximum 30. Prerequisite: M.S. in entomology or permission of major professor. Independent investigation under the direction and supervision of a major professor.

6100
Advanced Insect Physiology. 1-5 credits, maximum 5. Prerequisite: 4523. Special problems in advanced insect physiology.

Environmental Science (ENVR)

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.

6000
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 a current environmental problem that may be either global or local in nature.
Family Relations and Child Development (FRC)

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.

2100 Preprofessional Laboratory Experience. 1-4 credits, maximum 4. Lab 2-8. Realistic experiences in different professional career areas, acquainting students with the diversity of responsibilities as applied to the variety of audiences served.

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.

2613 The Professional in Individual, Family and Community Services. Prerequisite: HEC 1111 or equivalent. Builds skills in decision-making, priority-setting, self-assertion, and self-assessment. Volunteer and field experience options available in the field of family services.

3013 (S)Early Adulthood. Study of the unique characteristics of development during early adulthood. Theories of adult development with emphasis on application to program development and providing services for adults.

3023* Child and Parent in Social Context. Effective ways for the home, school and the community to work together to provide for the optimum development of children, including children from other cultures and ethnic groups.

3112 (S)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 paired relationship; communication and decision making, and coping with such problems as money, sex, role taking, in-laws and children.

3213 (S)Social, Emotional and Language Development in Early Childhood. Study of appropriate experiences in social, emotional, and language development.

3220 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.


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 role of parents, teachers and community leaders. Application of principles of development and guidance in actual work with children.

3303 Development of Creative Expression, Play and Motor Skills in Early Childhood. Prerequisite: course in child development. Consideration of appropriate experiences in the areas of music, art and movement skills for children under six. Observation and participation with children in the Child Development Laboratories and other groups.

3333 (S)Child Development and Guidance: Adolescence. Development of the adolescent physically, socially, intellectually and emotionally with emphasis on the search for identity, heterosexual development, vocational choice and interpersonal relationships. Observation of adolescents.

3403 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 research from economics, family economics, marketing, and statistics. Information-imperfect markets, assessing consumer information, seeking redress, bargaining, inflation, decision-making models, the concept 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 Cognitive 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 fundamental 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 social contexts.

3810 Practicum in FRC. 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 members or their designated representatives.

4000 Senior Thesis. 1-6 credits, maximum 6. Prerequisites: consent of instructor; senior standing. Supervised research for the bachelor's degree.

4102* Philosophy of Home Economics Education. Basis for developing a home economics education philosophy as related to present day theories of education including multi-cultural education, diversity of learners, characteristics of effective teachers, ethical considerations and other major contemporary issues in public education.

4103* Managing Career Decisions. Applications of decision making models for career and life planning. Self-assessment of career alternatives, career mobility, work family issues and resource identification. Student seeking teacher certification will complete a module on methods of teaching career education.


4123 Observation and Assessment of Family Interaction. Examination of family interaction through observation of family decision making models. Focus on whole family functioning and the functioning of multiple family relationships.

413* Organizing and Administering Programs for Families and Individuals. Development, management, and evaluation of programs serving families and individuals.

4203 Strategies for Teaching. Learning theories and strategies for planning, teaching and evaluating formal and nonformal programs. Not applicable for teaching licensure.

4212 Extension Programs in Home Economics. Development, organization and methods of home economics public service programs.

4213* Media, Materials and Techniques in Home Economics Education. Lab 6. Prerequisites: 3313 and full admission to University Teacher Education. Application of educational principles to specific home economics subject matter. Experiences with verbal and non-verbal communication, teaching and evaluation techniques, audiovisual materials, computers and a variety of teaching aids. Development of proficiency in the use of various media.

4252* History and Philosophy of Early Childhood Education. Prerequisites: courses in child development and early childhood education and senior or graduate standing. History of early childhood education; theoretical foundations and methods of early childhood curriculum models, including multicultural and non-sexist approaches; and current major issues in early childhood education.

433* Organization of School and Community Home Economics Programs. Prerequisite: full admission to teacher education. Leadership responsibility and activities of the home economics teacher in youth organizations, adult education, and effective interaction with parents and community.

4353* Strategies for Working with Adults in Community Services. Theories of adult development 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. Prerequisite: junior, senior or graduate standing. For family and human service professionals who will have responsibility for organizing volunteer personnel in achieving program goals. Overview of issues in volunteerism, management and leadership strategies for maximizing volunteer effectiveness and strategies for evaluating volunteer service.
Preschool Teaching, 1-7 credits, maximum 7. Lab 3-21. Prerequisites: 3213, 3233, 3303, 3403, 3503, full admission to Teacher Education, and pre-registration with director of Child Development Lab. Preschool teaching with responsibility in nursery school-kindergarten groups.

Family Resource Management. Exploration of the time, human, environmental and financial resources of the family. Practical application of management principles to the use of family resources through supervised experiences with attention to the development of professional competence as well as personal skills.


Critical Issues in Family Relations and Child Development. Prerequisite: senior standing. An examination of the place of family relations and child development in the context of broader themes. An exploration of the students’ specialization and its implications for an educated life.

Adulthood: Middle Years. Study of the unique characteristics of life between young adulthood and the later years. Special emphasis on physical, intellectual, personal, family and career development in middle age.

Adulthood: Later Years. Analysis of the aging process. Intereaction between physical, psychological and social development in later years.

Families in Crisis. Study of family responses to normative and unpredictable stress. Emphasis on using current literature on selected family stresses to identify issues and community resources that promote adaptation to family crisis.

Practicum and Internship. 1-9 credits, maximum 9. Prerequisites: 3213 and 3233, or 3613 and 3623 or consent of adviser. Supervised observation and participation in programs serving individuals and families.

Theories and Issues in Family Development. Prerequisites: 2113, six additional hours in FRCD, or consent of instructor. Current research and issues related to child development; theories and philosophical bases underlying development.

Theories and Issues In Family Relationships. Prerequisite: 3753. Introduction to family theories. Current research and issues related to family dynamics, relationships, and crises within the context of the family system.

Student Teaching in Home Economics. 1-12 credits, maximum 12. Lab 3-36. Prerequisite: full admission to Teacher Education and student teaching. Study and development of a philosophy and competencies in home economics education through directed teaching experience in an approved vocational program. Participation starts at the beginning of the semester in the assigned school.

Introduction to Research Methodology in Family Relations and Child Development. Understanding research processes and development of skills needed to be consumers of scientific literature in FRCD. Includes practice in reading research and statistics, introduction to how computers are used in this research and demonstration of basic principles of assessment in children and families.

Independent Study. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Various units of work related to specific issues in family relations and child development.

(LS)The Family: A World Perspective. Family structure and interaction that transcend specific cultures or nationalities: historical perspectives; and examination of specific cultural and national examples of family forms.

Seminar in Family Services. Pre-employment seminar. Individual competencies related to family services, career options, and the process of seeking employment.

Family Life Programming. Philosophy and principles of family life programming. Emphasis on planning, implementing, and evaluating family life programs in community and educational settings.

Special Unit Courses in Family Relations, Child Development and Early Childhood Education. 1-6 credits, maximum 6. Various units taught by specialists in the field.

Conference and Meeting Planning. Prerequisite: junior, senior or graduate standing. Planning and implementing conferences, teleconferences, conventions, symposia, seminars, and symposiums. Includes designing, promoting, managing and evaluating educational events.

Master’s Thesis. 1-6 credits, maximum 6. Research in FRCD for M.S. degree.

Directed Study in FRCD. 1-9 credits, maximum 9. Prerequisites: 5223; 5253. Directed individual study in child, youth, and adult development and family sciences.

Computer Applications in FRCD Research. Creating variable codebooks, coding data for input and inputting data for computer analysis using the SPSS-X package. No computer experience necessary.

Research Methods in Family Relations and Child Development. Current problem areas and methodologies of research in human development and family sciences, followed by experiences in identifying research problems, planning a proposal, selecting appropriate procedures for conducting studies and interpreting findings.

Methods of Teaching Child Development and Guidance. 1-3 credits, maximum 3. Prerequisites: 2113 and 3213 or equivalents. Content-related materials, learning experiences and methods of teaching child development in classes for youth and adults in secondary schools and colleges.

Teaching Practicum. 1-3 credits, maximum 3. Prerequisites: six hours of graduate course work and consent of instructor. Teaching human development and family sciences; content and techniques.

Child Behavior and Development. Prerequisite: consent of instructor. Current issues in child development beyond infancy explored within the context of recent research. Contrasting theoretical and methodological approaches critically evaluated.

Teaching Practicum. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Supervised experience in various settings relevant to human development and family sciences.

Early Childhood Education: Curriculum. Implications of child development theory and research for planning educational programs and learning experiences appropriate for young children.

Advanced Concepts in Early Childhood Programming. Prerequisites: 5223; 5253 or consent of instructor. Examination and critical review of the state of early childhood programming with emphasis on research, theory, and policy making that bear on current practice. Topics include anti-bias curriculum, family participation in early education, multi-cultural issues, and programs for infants and toddlers.

Early Childhood Theory, Practice and Evaluation. Prerequisites: 5223; 5253 or consent of instructor. Curriculum development and program models for children under six emphasizing individual differences, equipment and materials, physical facilities and space, teacher roles, and philosophical objectives.

Early Childhood Administration, Policy Analysis and Advocacy. Prerequisites: 5223; 5253 or consent of instructor. Examination of the administration of early childhood programs for young children as well as policy evaluation and advocacy. Legal, social and economic conditions as they affect the welfare of individuals and families.

Introduction to Research Methodology in Family Sciences. Examination of the cybernetic roots and terminology used in current research and of the need for an understanding, appreciation and integration of the role of “systems” approaches to family theory and clinical practice.
5643 Models and Strategies in Marriage and Family Therapy. Examination of the dominant models used in marriage and family therapy. Emphasis on theoretically appropriate strategies of intervention applied to the treatment of couples and families from an ecosystemic perspective.

5653 Diagnostic Assessment in Marriage and Family Therapy. Prerequisites: 5593; admission to FRCD-ABSELD marriage and family therapy option; consent of instructor. Recognition of the most relevant dimensions of family, systems, the array of diagnostic tools available, and measurement theory to enhance the probability of meeting the therapeutic needs of troubled couples and families.

5743 Management of Family and Community Service Programs. Prerequisites: graduate standing and one year work experience. Planning, personnel development, resource development, management and evaluation of community service.


5813 Family Economics. Prerequisite: senior or graduate standing. Individuals and families interaction in the labor market; decision making regarding time allocations among wage earning, household production and leisure. Economic well-being of individuals and families regarding human capital accumulation, poverty programs, two-earner families, one-person-headed households, and distribution of wealth.

5823 Consumer Economics. Prerequisite: graduate or senior standing. Application of economics theory and principles toward solution of problems of the individual and family unit using price theory concepts. Means by which scarce resources satisfy competing ends and allocation of limited resources for household purchases with budget restraints.

5833 Family Financial Security. Prerequisite: 3433 or consent of instructor. Socioeconomic changes, public policies and programs and management practices related to family financial well-being.

5843 Family Policy Issues. Prerequisite: senior or graduate standing. Identification and assessment of the effects of federal and state legislation on families and consumers. Effects of policies in areas of income maintenance, housing, health, education, social services, employment and contract law.

5853 Consumers and the Market. Prerequisite: consent of instructor. Social, economic and political implications of traditional, current and emerging marketplace practices. Government intervention in relation to the profit motive of businesses and consumer welfare.

5863 Economics of Aging. Principle economic elements of aging including employment and retirement decisions, changes in amount and sources of income, consumption patterns and living arrangements.

6883 Seminar in Family Economics. Prerequisite: consent of instructor. Current research in family economics. Critical study of classic and current research.

5933 Home Economics Curriculum Development. 2-3 credits, maximum 3. Prerequisite: methods course. A study of major concepts, philosophies and strategies that influence curriculum decisions in home economics programs at all educational levels.

5933 Evaluation Design. Fundamental principles of evaluation, emphasis on instrumentation.

5953 Home Economics in Higher Education. Educational objectives and their implementation in home economics at the upper-division and graduate level.

5983 Theories of Child Behavior and Development. Prerequisite: 6 credit hours at graduate level in child development or related areas. Major theories and supportive research that contribute to the understanding of child behavior and development.

6000 Doctoral Thesis. 1-12 credits, maximum 30. Prerequisite: consent of major professor. Research in home economics for the Ph.D. degree under supervision of a graduate faculty member.

6110 Research Internship. 1-9 credits, maximum 9. Prerequisite: consent of instructor. Special research studies under the supervision of a graduate faculty member.

6133 Advanced Research Methods in Family Relations and Child Development. Prerequisites: one course in research methods and one in statistics. Research design and analysis of data appropriate to the areas of family relations and child development.

6190 Research Internship. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Special research studies under the supervision of a graduate faculty member.

6250 Seminar in Child Development. 1-6 credits, maximum 6. Prerequisite: 5213 or equivalent. Selected topics in child development with special attention given to recent research literature and current theory.

6523 Analysis and Application of Family Theory. Prerequisite: 5523. Family theory process, including logic, theory construction, and relating conceptual orientations to current research areas.

6580 Seminar in Family Sciences. 1-6 credits, maximum 6. Prerequisite: 5513 or consent of instructor. Current research and theory in the family area; selected topics.

6743 Program Design and Implementation. Theories, resources, strategies and issues for bringing about change in groups and individuals applied to home economics and community services programs.

6823 Family Socio-Economic Issues and the Quality of Life. Prerequisite: consent of instructor. An analysis of social and economic trends and policy affecting resource use in household, consumer and leisure activities and the resulting quality of life.

6843 Economic and Social Foundations of Family Economics. Prerequisites: graduate standing, consent of instructor. The lives, times and ideas of great economic and social thinkers and how their influence on the economic and social development of our society affects the economics of family living.

6933 Advanced Evaluation Research. Prerequisite: 5103 or equivalent. Processes of evaluation related to research purpose and design and to assess evaluation research models appropriate to home economics.

6943 Administration of Home Economics. Principles, processes, techniques and issues in relation to administration.

6983 Analysis and Application of Child Development Theory. Prerequisite: 5983. Critical analysis of selected child development theories using primary source material with demonstration of application to development, research and practice.
5123* Investment Theory and Strategy. Prerequisite: 5353. Selected investment topics and advanced portfolio management techniques.

5213* International Business Finance. Prerequisite: 5353. Theories and financial management 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.

5353* Theory and Practice of Financial Management. Prerequisite: ACCTG 5103. Concepts and theories applicable to the financial administration of a firm. Cases, problems and readings to illustrate various financial problems and techniques of solution.

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 problems.

5613* Corporate Financial Planning. Prerequisite: 5353. Development of financial planning in a systems framework. An integration of existing financial theory and practice. Financial planning systems allowing the manager to acquire and understand some 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 by learning from feedback of previous decisions.

6513* 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.

6660 Seminar in Finance. 3-6 credits, maximum 12. Prerequisite: consent of instructor. Advanced research with emphasis on theoretical problems and solutions. Selected topics covered.

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, occupational safety and radiation health.

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 appliances 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. Specific industrial processes, equipment, facilities and work practices for detecting and controlling potential hazards.

2013 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 Design for Fire and Life Safety. Lab 3. Prerequisite: GERT 1113. Building construction standards and codes to assure maximum life and property safety from fires, explosions and natural disaster. Engine 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/safety subjects. Fire/safety techniques to recognize, evaluate and control potential occupational hazards. Critical path, LAD, PERT and human factors concepts.

2483 Fire Protection Hydraulics and Water Supply Analysis. Lab 3. Prerequisites: 1373 and MATH 1513. Fluid flow through hoses, pipes, pumps and fire protection appliances. Water supply and distribution analysis using hydraulic principles 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 techniques, workman’s compensation insurance, guarding 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.

3213 Industrial Security Applications. Safeguarding of industrial 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 1225 and junior standing. Toxics or irritant 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: 1373, 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 solid piles or racks over 12 feet in height.

4050 Advanced Fire Protection and Safety Problems. 1-4 credits, maximum 6. Prerequisite: consent of department. 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 safety areas. Research or state-of-the-art technologies to prevent or correct such problems.

4133 Industrial Hygiene Instrumentation. Lab 3. Prerequisites: CHEM 1515 and PHYSC 1114. 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.

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.

2302 (H)Masterworks of Western Culture: Modern. Ideas and values of Western culture as revealed through literary, artistic, historical, and philosophical contexts from the Renaissance to the Modern period.

2443 Languages of the World. A comprehensive survey of world languages. The essential structural and historical organization of languages. The process of language as a basic human function. Same course as ENGL 2443.

3500 Specialized Study in a Modern Foreign Language. 1-20 credits, maximum 20. Lab 1-5. Prerequisite: consent of instructor. Instruction and/or tutorial work in a modern foreign language other than those offered in a major program.

3503 (H)Asian Humanities: China and Japan. The many-faceted cultures of China and Japan from the first expression in poetry and philosophy through popular stories, plays and novels of later times, with continuing attention to music and art.
Forestry (FOR)

1123 Elements of Forestry. Lab. 3. Survey of forestry as an art, science and profession including forestry and natural resource management theory, forest resource distribution and ownership, historical development, abstracts of current land use, wildlife interactions, forest recreation, and career opportunities; lab fieldwork in woody science, tree identification, land and tree measurements, and mapping. One required three-day field trip.

2134 Dendrology. Lab. 4. Prerequisite: BISC 1403. Identification, taxonomy and distribution of forest trees and shrubs of the United States; their environmental requirements and utilization.

2773 Timber Harvesting. Timber harvesting systems, methods, equipment and planning, including topics in timber procurement, timber sales, harvest economics, logging safety, environmental considerations, and industrial operations.

3001 Multiple Use of Forest Resources. Prerequisite: 2773. One-week segment of an 8-week summer field session. Management of regional forest resources, including wildlife, watershed, range recreation, and timber.

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, MATH 1715 and STAT 2013. Four-week segment of an 8-week summer field session. An introduction to the measurements of forests, forest products, standing trees, growth, and the application of mensurational techniques to timber valuation and analysis.

3011 Harvesting and Utilization. Prerequisite: 2773. One-week segment of an 8-week summer field session. Descriptive role of timber harvesting and forest products utilization in forest management systems; forest surveying 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. An introduction to the art and science of forest field surveying, including the tracing of old property lines, data gathering for topographic maps, traversing, and forest road layout.

3213 (N)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.

3223 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 forest enterprise; chemistry and physics of fire, fire 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 variance, the development of natural populations, variation patterns, genetic improvement systems, and forest tree improvement methods as part of forest and nursery management systems.

3554 Wood Properties. Lab 2. Prerequisite: 3011. Structure, properties, identification of wood; treatment of forest products.

3643 (N,SpD)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: 3004 and an introductory course in computer programming. The application of statistical methods to forest problems including stand volume estimation, growth measurement, and volume table construction. Introduction to the use of various yield tables in forest management. Applications of micro-computing to analysis of forestry data.

3883 Aerial Photogrammetry and Information Systems. Lab. Prerequisite: MATH 1613. Use of aerial photographs in natural renewable resources and the application of remotely sensed information to management systems. Study of scale, parallax, planimetric mapping, photo interpretation and exposure to principles of computer-based forest information systems.

3993 Forest Economics and Finance. Prerequisites: 3001, 3004, 3101, 3663 and AGEC 1114. Economic factors and analytical methods influencing decisions in forest resource management; factors affecting the production of wood products; arithmetic of interest and investment criteria; economics of nonmarket goods.

4103* Wood Treatments and Preservation. Prerequisite: 3554. Industrial treatment of wood with respect to dry kiln, adhesives, preservative treatments, resistance to decay, and dimensional stability.

4113* Forest Products. Prerequisite: 3554. Production, distribution and uses of major forest products.

4223 Timber Management. Lab 2. Prerequisites: 3213, 3893. Regulation of forest growing stock to meet management objectives. Land and timber appraisals. Organization of the forest enterprise to meet financial objectives of management. Four-day field trip may be required.

4333* Forest Resource Management: Planning and Decision Making. Lab 2. Prerequisite: 4223, any computer science course, senior standing or consent of instructor. Integrated problem solving, to apply biological, quantitative, economic, political and administrative principles in solving forest resource management problems.

4443* Forest Administration and Policy. Prerequisite: senior standing. Forest policy and legislation; person matters, organization, supervision and financing of federal, state and private forest enterprises.

4500* Forest Problems. 1-3 credits, maximum 3. Prerequisite: upper-division standing, GPA of 2.50 or better and consent of instructor. Selected problems in forestry.

4553* Forest Recreation. An analysis of planning, management, administration and use of forests and related wildlands for recreation, including an overview of public and private sector recreation resources, programs, and policy; social foundations of recreation; measurement and evaluation of recreation resource settings, activities, experiences, and use-improving resource operations and interpretive services; and wilderness management. One required three-day field trip.

4563* Tree Physiology. Prerequisites: BISC 1304, BISC 1403. The physiology of growth, development and responses of woody plants with particular consideration of the influence of genetic and environmental factors on physiological processes in trees; application of physiological principles in predicting the effects of silvicultural practices on tree growth response.

4601* Contemporary Issues in Forest Policy. Prerequisite: senior standing. Current issues in forest policy, public land allocation and use, alternatives for nonindustrial private forest lands, current legislation pertaining to forest resources. A reading/discussion format is scheduled in the evenings at participants' homes. Enrollment limited.

4613* Forest Biometry. Lab 2. Prerequisites: 3663 and MATH 2713. Application of mathematical and statistical methods to the unique characteristics of forest trees and stands. Development of models for individual tree tally and forest stand. Theory and development of growth and yield models.

4811* Forest Hydrology Laboratory. Lab. Prerequisite: 4813. Techniques to evaluate the hydrologic processes and characteristics of forest and other wildland watersheds; precipitation, runoff, infiltration, erosion processes. Water quality assessment in wildland settings.

4813* (N)Forest Watershed Management. Lab 2. Prerequisite: 4811. A study 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 6. Open to students working for a Master of Science degree in forest resources.

5003* Productivity of Forest Stands. Lab 2. Prerequisites: 3223, AGRON 2124, STAT 5013 or equivalent. Integrated study of the ecological, and genetic factors controlling the productivity of forest stands. An examination of natural, economic and social factors influencing silvicultural treatment of forest stands. Tree and stand response to silvicultural manipulation.

5010* Graduate Seminar. 1 credit. maximum 2. Presentation of current and new concepts 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 special experimental design in forestry, analysis of forest data and interpretation of results for integrated forest.
5143 Economics of Multiple Use of Forests. Prerequisite: 4013. 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 and private forests for combination of timber, water, wildlife, range, recreation and other environmental values.

5753 Forest Genetics. Prerequisites: 3443 and ANSI 3423 or AGRON 3553. Patterns in forest tree populations; estimation and application of genetic parameters to development of improved tree populations. Development of selection indices and experimental design as related to applied tree breeding programs.

5762 Forest 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 and its effect on water bodies. Focus on current regulatory issues.

French (FRNCH)

1115 Elementary French I. Lab 1 112. 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.

2002 Accelerated Intermediate French. Prerequisite: departmental placement test. Rapid overview of basic French grammar. Designed for incoming first-year students with some previous French experience. Three credits are awarded for this course, but not 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 shorter texts in a variety of literary genres, with presentation of French versification and literary terminology.

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; consolidation of basic skills with additional emphasis on writing. 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; consolidation of basic skills with additional 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.

3213 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.

3902 Orientation to Internship Abroad. Prerequisites: 12 hours of French or equivalent proficiency. Preparatory course for summer practicum in French-speaking countries.

4010 Senior 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 the disciplines covered in earlier course work.

4550 Thesis. 1-6 credits, maximum 6. Prerequisite: approval of major professor. Thesis or report.

4573 (H)French Literature in Translation. Cultural and humanistic significance of French literature; reading and discussion of selected complete works, using combined lecture, discussion and seminar approaches. Independent tutorial study encouraged for part of course. Taught in English.

4573 (H)History of French Literature I. Prerequisite: 20 credit hours of French or equivalent. Historical survey of French literature before 1700, with reading of representative texts.

4573 (H)History of French Literature II. Prerequisite: 20 credit hours of French or equivalent. Historical survey of French literature of the eighteenth century, with reading of representative texts.

4573 (H)History of French Literature III. Prerequisite: 20 credit hours of French or equivalent. Historical survey of French literature of the nineteenth century, with reading of representative texts.

4573 (H)History of French Literature IV. Prerequisite: 20 credit hours of French or equivalent. Historical survey of French literature of the twentieth century, with reading of representative texts.

4573 (H)Backgrounds of Modern French Civilization. Prerequisite: 20 credit hours of French or equivalent. Study of French culture, and urban land uses. Focus on current regulatory issues.

4573 (H)Modern French Theater. Prerequisite: 20 credit hours of French or equivalent. Analysis of French plays from the 19th and 20th centuries.

4573 (H)French Conversation. Prerequisite: 20 hours of French or equivalent. Colloquial speech, with discussion of French newspapers and magazines. Practice in brief public address in French.

4703 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.
1135 Engineering Design Graphics with CAD. Lab 6. Sketching and using CAD system to generate engineering drawings to 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 advisers.


1320 Technological Problems. 1-3 credits, maximum 6. Prerequisite: consent of instructor and adviser. Problems in applied technology of particular interest to currently employed technicians.


2050 Advanced Technological Problems. 1-4 credits, maximum 6. Prerequisites: consent of instructor and adviser. Problems in applied engineering science that are of particular interest to the engineering technician.

2323 Statics. Prerequisites: MATH 1613 and PHYS 1114. Forces acting on bodies at rest; forces, moments of force, distributed forces, reactions, free-body diagrams, friction, internal forces and moments of inertia. Applications.

2650 Technical Projects. 1-4 credits, maximum 4. Prerequisite: completion of three semesters’ work in a technical institute curriculum. Special projects assigned by advisers with the approval of the director. A comprehensive written report must be prepared and an oral examination may also be required.

2772 Motion and Time Study. Lab 3. Prerequisite: sophomore standing. Developing procedure for effective utilization of effort in industrial operations; analyzing job situations with stop watch, motion picture camera and other motion economy equipment.

2812 Statistics. Fundamental statistical measures, elementary probability, histograms, cumulative curves, linear correlation and regression, analysis of variance, estimation and significance tests.

3113 Principles of Supervision. Prerequisite: junior standing. A study of the fundamental principles of organizing, planning, staffing, controlling and directing as applied to first-line supervisory roles in industry.

3123 Applied Analysis for Technology. Prerequisite: MATH 2583 or equivalent. Applications of elements of matrix algebra, ordinary differential equations, and infinite series to problems in engineering technology.

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.

Geography (GEOG)

1113 (I)Introduction to Geographic Behavior. The major organizing concepts of economic and cultural geography. Man’s geographic behavior in terms of his spatial organization of the earth’s surface and his development of regional and political systems.

1114 (LN)Physical Geography. Distribution and analysis of natural features of the earth. Landforms, soils, minerals; water, climates, flora and fauna. Emphasis on human-environment relations where appropriate. No general education credit for students also taking GEOL 1014.

2253 (I)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.


3033 (N,SpD)Meteorology. Physical elements which cause and influence weather.

3123 (S)Urban Geography. Locational aspects of urbanization; functions of and relations among cities and between cities and rural areas; internal structure of urban areas.

3133 (S,SpD)Political Geography. Major political structures and geopolitical implications of location, shape, area, culture and natural environment of nations and states. Spatial analysis of voting behavior.

3143 (S)Historical Geography. The reconstruction of the historical landscape of selected regions from a geographical point of view. Spatial relationships recorded in journals and literature of the past in the light of the present. These may be related to present through sequential developments of patterns of spatial organization.

3153 (S,SpD)Conservation of Natural Resources. Problems and corrective methods of conservation of land, water, forests, wildlife, minerals and people.

3163 (S,SpD)Economic 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.

3173 (S)Cultural Geography. Geographic impact of human cultures. Emphasis on the concepts of social space, density, crowding, territoriality, diffusion, migration, environmental perception and cultural landscape.

3313 Cartography. Lab 2. Prerequisite: junior standing. Theory, design, and effective portrayal of data on maps.

3333 Spatial Analysis. Prerequisite: STAT 2013. The utility and goals of geographic inquiry in the solution of problems including concepts of spatial structures, distributive processes, networks, interactions and areal associations.

3703 (S)Geography of Oklahoma. Geographical interpretation of physical, economic, historical and scenic features.

3713 (S)Geography of the United States and Canada. A geographic analysis of the United States and Canada with emphasis on regional variations of social, economic and physical phenomena.

3723 (LS)Geography of Europe. Location and analysis of natural, economic and cultural features of Europe.

3725 (LS)Geography of Latin America. 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 (LS)Geography of Asia. Systematic interpretation of significant spatial patterns of man and natural environment. (Exclusive of the USSR.)

3763 (LS)Geography of Africa. General patterns of population and cultural heritage in Africa; focus on elements and patterns that contrast with Western civilization.

3773 (LS)Geography of Middle America. A real distribution and analysis of physical, cultural, and economic features of Middle America.

4003* Natural Hazards and Risk Assessment. Human perception of and response to extreme natural events (such as tornadoes, floods, earthquakes, drought and disease). Examination of mitigation and relief procedures at local, state and national levels.

4043* Applied Climatology. Prerequisite: 3023, 3033 or 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* Geographic 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 law, 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 dimension 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. Economic, social, and economic and spatial impacts of recreation facilities provision and visitor management practices.

4183* Regional Analysis. An introduction to methods of examining and analyzing economic dimensions of regions.

4213 (S)Geography of Sport. Spatial analysis of sport; its origin and diffusion, geographical organization and regional variation. Geographical movements and interaction associated with sport. Application of geographical solutions for reorganization and reform. Focus on both U.S. and international scene.

4223 (H,SpD)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 qualitative and quantitative analysis and research including data acquisition and manipulation from field and secondary sources. Field trips.

4323* Computer Cartography. Lab 2. Use of packaged computer programs to produce maps on both the printer and the plotter.
5313* Geographical Analysis. Lab 2. Prerequisites: 3333 and one course in statistics. Application of models to geographic problem solving. Library, field techniques, questionnaires and data processing in geographic research contexts.

5403* Progress 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* Geographic Education. For both prospective and experienced teachers of geography. Geography's role in the social and behavioral sciences; analysis of geography curricula, comparison of various instructional approaches (traditional and experimental); and examination of current research in geographic education.

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* Graduate Cooperative Education Internship. 1-6 credits, maximum 6. Prerequisites: consent of departmental advisor and consent of instructor. Practical experience in applying geographical concepts to societal problems. Emphasis on programs in planning and geographic education.

Geology (GEOL)

1014 (L,N) General Geology. Lab 2. The influence of geology and related earth sciences on the human environment. Emphasizes energy and material resources, beneficial and hazardous natural processes, and the planetary and biological evolution of earth. Lab investigations are environmentally oriented. Field trips required. No general education credit for students also taking GEOG 1114.

1114 (L,N) Physical Geology. 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 Geology for Petroleum Technologists. Lab 3. Composition and structure of the earth, chiefly as related to oil and gas. Emphasis on basic stratigraphic and structural-geologic principles applied to oil exploration and production. Field trips required.

1224 Historical Geology. Lab 3. Prerequisite: 1114. Earth history, with major emphasis on mountain-building, development of continents, and the evolution of animals and plants. Field trips required.

2013 Scenic Geologic Regions. 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 Mineralogy. 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.


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. Prerequisites: 1224, MATH 1613 and PHYSC 1114. Behavior of earth materials during various deformational processes and analysis of the resulting structural features. Field trips required.

3032* 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 receive graduate credit.

3073* Geomorphology. Lab 3. Prerequisites: 1224 or consent of instructor. Current processes that form the earth's surface and the processes required. No general education credit for students also taking GEOG 1114. Morphology and systems of major invertebrate macro- and micro-fossil groups. Basic principles of biogeography. Field trips required.

3124 Advanced Geology for Petroleum Technologists. Lab 3. Prerequisite: 1114 or equivalent. Principles and techniques of solving problems in structural and stratigraphic environments of oil and gas. Emphasis on interpretation of subsurface data and maps, including well logs and various kinds of maps. Field trips required.

3353* Optical Mineralogy. Lab 1. Prerequisite: 2253. Study of the optical properties of non-opaque crystals by transmitted light using the petrographic microscope. Mineral identification using oil-immersion and thin-section methods.

3548* 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 photographs. Required of all geology majors. Transportation and room and board fees required.

4010* Geology Colloquium. 1 credit, maximum 8. Prerequisite: junior standing. Lectures and demonstrations of timely interest in geology. Field trips may be required.

4032* Petroleum Geology. Prerequisites: 3014 and 3033. Origin, migration and accumulation of petroleum, requirements for source rock, reservoir rock and traps. Structural and stratigraphy of selected oil fields. Field trips required.


4453* Hydrogeology I. Water cycle with emphasis on surface and groundwater. Study of landforms and the water law, interrelations between the sciences and the humanities.

4463* Hydrogeology II. Lab 3. Prerequisite: 4453. Physical groundwater systems. Realistic problems to acquaint students with ground-water occurrence and movement. Geologic, geophysical, hydraulic, geochemical and modeling techniques used to define a groundwater system. Field trips required.
4563* Sedimentology. Lab 3. Prerequisites: 3546, senior standing. Sediments, sedimentary processes and sedimentary environments, geometry and internal features of sediments. Field trips required.

4663 Economic Geology. Lab 3. Prerequisite: 2364. Descriptive geology origin, economic utilization of metallic and nonmetallic minerals and rocks. Field trips required.

4990 Special Problems in Earth Science. 1-8 credits, maximum 8. Prerequisites: 25 hours of geology and permission of instructor. Individually designed study projects involving assigned reading, library work, field work, laboratory work or a combination of these. Field trips may be required.

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 senior faculty member, with second faculty member and oral examination. Required for graduation with departmental honors in geology.

5000 Thesis. 1-6 credits, maximum 6. Prerequisite: approval of graduate committee. Work toward master's thesis in geology.

5050 Problems in Economic Geology. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Individually designed problems in economic geology. Field trips may be required.

5100 Problems in Hydrogeology. 1-4 credits, maximum 8. Prerequisite: 4453. Advanced problems in hydrogeology with emphasis on quantitative methods. Field trips may be required.

5150 Problems in Engineering Geophysics. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Advanced problems in engineering geophysics with emphasis on problem solving. Field trips may be required.

5183* Advanced Paleontology. Lab 3. Prerequisite: 3103 or equivalent. In-depth study of selected fossil groups with emphasis on marine micropaleontology. Student projects on assigned fossil groups with presentation of results both orally and in writing. Field trips required.

5203* Advanced Structural Geology. Lab 3. Prerequisite: 3014. The theoretical, experimental and descriptive approach to structural geology; includes correlations between stress field, rock type, and structural style in petroleum exploration.

5223* Advanced Map Interpretation. Lab 3. Prerequisite: 3014. Geometric techniques and analysis of complex structural terrain. Elucidation of geological history by study of selected maps. Field trip required.


5283* 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 trips required.


5353* Advanced Well Log Analysis. Lab 3. Prerequisites: 3033 or 3124. The geologic interpretation of a variety of well logs, emphasized, as well as quantitative methods. Some exercises involve concurrent interpretation of well logs and core samples, or well logs and bit cuttings.


5403* Geochmtry. Prerequisites: 2364 and general chemistry. Application of chemical principles to geological processes. Emphasis on chemical sedimentology, stable isotopes, and Eh-pH diagrams.

5443* Engineering Geophysics. Lab 3. Prerequisites: 1114 or 3024; PHYSC 1214 or equivalent. Geological 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 reflection methods. Field trip required.

5453* Advanced Hydrogeology. Lab 3. Prerequisites: 4453, COMSC 2115 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.

5503* 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 transferring geologic information for the purposes described above, with emphasis upon environmental geologic mapping. Field trips required.

5552* 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.


5603* Basin Analysis. Lab 1. Prerequisites: 3546, 5203, 5223, 5253, 5363. Team-taught course. Interpretations of the evolution of selected sedimentary basins. Emphasis on facies analysis, petrography, diagenesis, and structural evolution. Field trips required.

5710* Advanced Studies in Geology. 1-4 credits, maximum 9. Prerequisite: consent of instructor. Individual study, laboratory and/or field projects on facets of geology not covered by existing courses. Field trips may be required.

German (GRMN)

1115 Elementary German I. Lab 1 1/2. Main elements of grammar and pronunciation, with work on the four basic skills of listening comprehension, speaking, reading and writing.

1225 Elementary German II. Lab 1 1/2. Prerequisite: 1115 or equivalent. Continuation of 1115.

2112 Intermediate Conversation and Composition I. Lab 1. Prerequisite: 1225 or equivalent competence. (May have been gained in high school.) Continuation of 2112, with further work in composition, conversation and grammar. May be taken concurrently with other 2000-level German courses.

2222 Intermediate Conversation and Composition II. Lab 1. Prerequisite: 2112 or equivalent competence. (May have been gained in high school.) Continuation of 2112, with further work in composition, conversation and grammar. May be taken concurrently with other 2000-level German courses.

2223 Introduction to German Literature. Prerequisite: 1225 or equivalent competence. (May have been gained in high school.) Reading and analysis of prose, drama and poetry; literary appreciation. May be taken concurrently with other 2000-level German courses.

3013 German for Reading Requirements I. Reading in the humanities and the sciences. Translation from German to English.

3023 German for Reading Requirements II. Prerequisite: 3013 or equivalent. Intermediate and advanced reading in the humanities and sciences. Translation from German to English.

3500 (H)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.

3343 Business German. Lab 1. Prerequisite: 20 credit hours of German or equivalent. Introduction to business practices and economic environment in Germany. Study of specialized vocabulary.

3463 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.

3803 (I)Advanced Conversation. Lab 1. Prerequisite: 20 credit hours of German or equivalent. Colloquial speech forms and sentence structure. Practice in brief public address in German.

3813 (H)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 stylistics.

3902 Orientation to Internship Abroad. Prerequisite: 20 hours of German or equivalent. Preparation for residential internship in a German-speaking country. Culture, civilization, and contemporary conditions, and communication for students accepted for international cooperative education program.

3903 (I)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.

4153 (H)Survey of German Literature I. Prerequisite: 20 credit hours of German or equivalent. German literature from the beginning to 1785.

4163 (H)Survey of German Literature II. Prerequisite: 20 credit hours of German or equivalent. German literature from 1785 to the present.

4513 (H)The Age of Goethe. Prerequisite: 20 credit hours of German or equivalent. Principal figures of German Classicism and Romanticism.

4523 (H)19th Century German Theater. Prerequisite: 20 credit hours of German or equivalent. Principal figures of German Classicism and Romanticism.

4533 (H)19th Century German Novelle and Lyric. Prerequisite: 20 credit hours of German or equivalent. Lyric and lyric from Romanticism to Naturalism.

4543 (H)20th Century German Literature. Prerequisite: 20 credit hours of German or equivalent. Main current and influences in German literature from Naturalism until present day.
Graduate (GRAD)

580* 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 or research courses.

5990* Graduate Research and Teaching Practicum. 1-6 credits, maximum 12. Prerequisite: graduate standing. Graduate-level instructional program in research and teaching techniques and procedures. Graded on pass-fail basis.

6010* Research or Intern Practicum. 1-9 credits, maximum 6. Prerequisite: consent of department head. Academic or research courses.

600* Knowledge, attitudes and practices related to self-direction of health behavior for total well-being. 1-6 credits, maximum 6. Thesis or Report.

Greek (GREEK)

1113 Elementary Classical Greek I. Grammar and vocabulary of ancient Greek.

1223 Elementary Classical Greek II. Prerequisite: 1113 or equivalent. A continuation of 1113. Grammar and readings of classical Greek authors.

2113 Elementary Classical Greek III. Prerequisite: 1223 or equivalent. A continuation of 1223. 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.

3330 Advanced Readings. 1-6 credits, maximum 9. Prerequisite: 2213. Prose authors, epic poetry, drama, Koine Greek and religious texts.

Health, Physical Education and Leisure (HPEL)

2213 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. Graded on a pass-fail basis.


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 applied to a living person. Common anatomical injuries and diseases will be presented with each joint structure.

2663 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.

4503* Applied Health Behavior. Prerequisites: FNA 1113, PHSI 3113. Health assessment and intervention strategies will be focused on obesity, stress, substance abuse, consumer 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: 4992. Commonly used therapeutic devices used for training rooms.

4983* Human Electrocardiographic Interpretation. Prerequisite: PHSI 3113. Knowledge concerning the collection and interpretation of the electrocardiogram (EGK) and its relationship to heart anatomy, physiology and electrophysiology.

4992 Athletic Rehabilitation. Lab 1. Prerequisites: 2653, 3663. 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.

5023* Seminar. 1-2 credits, maximum 4. Selected topics from the profession not covered in other courses. Presentation and critique of research proposals and results.

5020 Health, Physical Education and Leisure Workshop. 1-6 credits, maximum 6. Selected areas of health, physical education and leisure.

5023* 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.

5030 Field Problems in Health, Physical Education or Leisure Sciences. 1-6 credits, maximum 6. Individual investigations.

5043* Trends and Issues in Health, Physical Education and Leisure Sciences. Major trends and issues in higher education and professional preparation; principles, practices, problems and improvements in HPEL; future needs and program innovations.

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 4533. Conceptual framework in dealing with health topics as they apply to targeted populations. Direction in developing needs assessment and measuring tools in behavioral modification with strong emphasis on health promotion proposal writing and marketing strategies.

5413* Organization and Administration of Recreation. Systematic approach to problem solving and decision making for structure, personnel management, finance and program development for recreation delivery systems.

5423* Camp Administration and Programming. Management, budget, site development, program evaluation and selection and training of personnel.

5433* Development of Leisure Services Delivery Systems. Concepts and principles of administration and management, including planning, organization, supervision and evaluation for a variety of leisure service delivery systems.

5443* Social Foundations of Recreation and Leisure. Social and philosophical foundations of recreation and leisure with emphasis on the contributions of recreation and its effect on humans throughout history.

5453* Practicum for Human Service Professionals. A wilderness-based program for educators and human service professionals utilizing Colorado Outward Bound Schools 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 2653 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, prescription 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.

5773* Physical Education for the Physically Handicapped. Prevention, detection and correction of remediable physical defects.

5793* Mechanical Analysis of Physical Education Activities. Prerequisites: HLTH 2653, 3963, HPELS 5823 and 5843. Application of physical laws to physical education activities.

5823* Advanced Applied Anatomy. Prerequisite: HLTH 2653. Structure and movement of the human body with emphasis on the relationship of physical activity to musculoskeletal and neurological factors.

5833* Methods in Physical Education. Prerequisites: PE 4712 and 5773, CIED 5043 recommended. Differentiation between teaching methods in physical education: advantages of the application of the individual methods to particular situations in teaching physical education. Same course as CIED 5613.

5043* Quantitative Biomechanics and Kinesiology. Prerequisites: 5823, HLTH 3663. Analytical approach to the study of human motion as applied to kinesiological description and kinematic and kinetic evaluation.

5853* Stress Testing and Exercise Prescription I. Lab 2. Prerequisite: PHSI 3113 or equivalent. Theory and practice in resting and exercise EKG, stress test protocols and exercise prescription.

5863* Stress Testing and Exercise Prescription II. Prerequisite: 5853. Theoretical aspects of evaluating functional capacity through stress testing with the development of exercise prescription for special populations with physiological limitations imposed by age, disease, heredity and environment.

5873* Human Bioenergetics. Prerequisite: PHSI 3113 or equivalent. Human energy production, utilization and storage in response to exercise.

5883* Program Development for Adapted Physical Education. Strategies for designing and implementing adapted physical education programs in public schools and higher education with emphasis on grant writing, public relations, interdisciplinary strategies, and advocacy.

6010* Independent Study in Health, Physical Education and Leisure Services. 1-6 credit hours, maximum 6.

History (HIST)

1010 Studies in American History. 1-2 credits, maximum 2. Special study in American History to allow transfer students to fulfill general education requirements as established by Regents’ policy.

1103 Survey of American History. Meaning, vitality, and uniqueness of United States history since 1492 through a thematic examination of the nation’s past. Satisfies, with POLSC 1013, the State Regents requirement of six credit hours of American history and American government before graduation. No credit for students with prior credit in HIST 1483 or 1493.

1483 American History to 1865. From European background through the Civil War. Satisfies, with POLSC 1013, State Regents requirement of six credit hours of American history and American government before graduation. No credit for students with credit in HIST 1103.

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 POLSC 1013, State Regents requirement of six credit hours of American history and American government before graduation. No credit for students with credit in HIST 1103.

1613 (H)Western Civilization to 1500. Lab 1. History of western civilization from ancient world to Reformation. Laboratory discussion sessions on interpretation of primary sources in translation.

1623 (H)Western Civilization After 1500. Lab 1. History of western civilization from Reformation to present. Laboratory discussion sessions on interpretation of primary sources in translation.

1713 Survey of Oriental Civilization. The independent yet related histories of India, China, Japan, Korea and Southeast Asia with special attention to the origins and development of oriental civilization from pre-history to the 17th Century and on the contribution of power and violence to the evolution of civilization.

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.

3203 (I,S)Survey of Modern European History. The independent yet related histories of France, Austria, Germany, England, Italy, and Russia from 1453 to the present. Satisfies, with POLSC 3003, the State Regents requirement of six credit hours of European history.

3233 (H)Survey of Modern French History. The independent yet related histories of France, Austria, Germany, England, Italy and Russia from 1453 to the present. Satisfies, with POLSC 3003, the State Regents requirement of six credit hours of European history.

3623 (H)European History to 1871. The independent yet related histories of France, Austria, Germany, England, Italy and Russia from 1453 to the present. Satisfies, with POLSC 3003, the State Regents requirement of six credit hours of European history.

3723 (H)Europe Since 1871. The independent yet related histories of France, Austria, Germany, England, Italy and Russia from 1453 to the present. Satisfies, with POLSC 3003, the State Regents requirement of six credit hours of European history.

3903 (I)The Renaissance, Reformation, and Counter-Reformation to 1648. The independent yet related histories of Italy, France, Spain, England, Germany and the Netherlands from 1492 to 1648. Satisfies, with POLSC 3003, the State Regents requirement of six credit hours of European history.

3923 (I,II)The Industrial Revolution to World War I. The independent yet related histories of the Great Powers of Europe from 1871 to World War I, with special emphasis on France, Germany, Italy, and Russia. Satisfies, with POLSC 3003, the State Regents requirement of six credit hours of European history.

3953 (I,II)The World Wars and the Cold War. The independent yet related histories of France, Germany, Italy, and Russia from World War I to the present, with special emphasis on the inter-war and Cold War periods. Satisfies, with POLSC 3003, the State Regents requirement of six credit hours of European history.

3963 (I)The History of Ancient Rome in its Mediterranean Setting. Special emphasis on political, economic, and social factors leading to the development of the Roman Empire.

3973 (I,II)The History of Ancient Greece. Special emphasis on political, economic, and social factors leading to the development of the Greek Empire.

3983 (I)The History of the Byzantine Empire. Special emphasis on political, economic, and social factors leading to the development of the Byzantine Empire.

3993 (I)The History of the Ottoman Empire. Special emphasis on political, economic, and social factors leading to the development of the Ottoman Empire.

4003 (I)The History of the Islamic World. Special emphasis on political, economic, and social factors leading to the development of the Islamic World.
Impact on the West since 1840, with stress on economic, social and nationalism in Southeast Asia. Problems of trade and its impact on Japan, Korea and Southeast Asia.
1001 Seminar in Human Environmental Sciences. Mission of the College as a basis for value exploration and problem solving. Investigation of the integrative nature of the profession and general education. Required of all students in the College of Home Economics.

1111 Career Exploration in Home Economics. Developing and applying concepts relating to individual values and goals to assist in career decision making. Required for all freshman students in home economics.

2223 Historiography. Major writers of history, historical schools and patterns of developments in historical interpretation from the earliest times to present.

6120 Special Studies in History. 1-3 credits, maximum 36. The meaning and operation of the historical processes and develop capabilities for clarity of statement, investigation, and creative, critical attitude. Areas studied vary from semester to semester.

Home Economics (HEC)

3011 Contemporary Issues Within the Global Community. Awareness of global interdependence as it affects individuals and families. Exploration of the impact of public policy on these issues. Required of all students in the College of Home Economics.

4110 The Home Economist in the Contemporary World. 1-2 credits, maximum 6. Prerequisite: senior standing. Field experiences related to issues affecting the family in contemporary society and the unique responsibilities of the home economist as they interface as agents of change.

5102 Methods of Home Economics Research. Methods of research in various areas of home economics including types of research and such aspects as problem definition, design, sampling, data collection, data analysis, reporting and reviewing. This course or equivalent required of all graduate students in home economics.

5151 Interdepartmental Home Economics Seminar. Analysis of current issues from the perspective of home economics. Application of research findings related to issues.

6180 Research Seminar. 1-3 credits, maximum 3. Prerequisite: graduate course in research methods or consent of instructor. Research in home economics with emphasis on problems involving a multidisciplinary approach. Methodological analysis of research. Development and evaluation of research focused on current problems.

6990 Seminar in Home Economics. 1-3 credits, maximum 3. Prerequisite: consent of instructor. Analysis of philosophy, critical issues, current developments and interrelationships among elements in home economics.

Honors (HONOR)

2013 (S) Honors Law and Legal Institutions. Prerequisite: Honors program participation. An introduction to law and legal systems with reference to its European origins; its political, economic, psychological, and sociological dimensions; and the substantive law in selected areas. Introduction to legal reasoning and legal research techniques. For the Honors student.

2113 (H) Honors Western Humanities: Ancient and Medieval. Prerequisite: Honors program participation. Interdisciplinary study of art, history, philosophy, literature, theater, and music from ancient times to the Middle Ages. Team taught by faculty from appropriate disciplines in a lecture and discussion format. For the Honors student.

2223 (H) Honors Western Humanities: Modern. Prerequisite: Honors program participation. Interdisciplinary study of art, history, philosophy, literature, theater, and music from the Renaissance to the present. Team taught by faculty from appropriate disciplines in a lecture and discussion format. For the Honors student.

2514 (L) Honors Scientific Inquiry. Lab 2. Prerequisite: Honors program participation. A team-taught interdisciplinary course dealing with philosophy of science and the application of the scientific method in the natural and social sciences. Selected topics that involve interdisciplinary scientific inquiry. For the Honors student.

Horticulture (HORT)

1002 Home Horticulture. Lab 2. Horticulture around the home. Planning and care of home grounds, the fruit and vegetable garden and selection, use and care of indoor plants. Intended for non-majors only.

1013 Principles of Horticulture and Landscape Design. Lab 2. Horticultural principles and practices; basics of landscape design; characteristics and use of horticultural plants; scope and development of the horticultural industry.

2010 Internship in Horticulture. 1-6 credits, maximum 6. Prerequisites: 24 credit hours and consent of adviser. Supervised work experience with approved public and private employers in horticulture and related fields. Credit will not substitute for required courses. Graded on a pass-fail basis.

2112 Indoor Plants. Lab 2. Prerequisite: 1013. Identification, cultural requirements and use of ornamental foliage and flowering plants for indoor gardens.

2212 Herbaceous Plants. Lab 2. Prerequisite: 1013. Identification, cultural requirements and landscape value of ornamental flowering herbaceous plants.

2652 Basic Floral Design. Lab 2. Fundamentals of floral arrangement and design for the home and the retail shop; basic skills useful to flower shop employment and operation.

3014 Business and Practice of Arboriculture. Lab 2. Prerequisites: 3312 and 3322 or FOR 2134, and AGRON 2124. Theory and practice of selecting, planting and maintaining trees, shrubs and vines. Basics of the landscape management business, including estimates for labor, equipment and plant materials, bidding, costs and record keeping, and employee safety.


3113 Greenhouse Management. Lab 3. Prerequisites: 1013, 2112, BISC 1403 and MATH 1213. Commercial greenhouse operation with emphasis on floricultural plant production aspects; environment, growing media, fertilizers and application methods, watering, pest and disease control, chemical growth regulators, production costs.

3170 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, apple, peach, strawberry, blackberry and blueberry. A two-day field trip is required.

3312 Landscape Plant Materials I. Lab 2. Prerequisite: BISC 1114 or 1403. Identification, adaptation, tolerance and use of deciduous trees, shrubs, vines and ground covers in the landscape.

3322 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.

3433 Commercial Vegetable Production. Prerequisites: 1013, AGRON 2124 and BISC 1403. Commercial production and marketing of vegetable crops.

3544 Nursery Production. Lab 2. Prerequisites: 3312 and 3322, AGRON 2124, BOT 3463, PLP 3344 and any course in entomology. The propagation, production, marketing and management 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.

4313 Commercial Flower Production and Marketing. Lab 3. Prerequisite: 2652. Preparation, arrangement, care and marketing of cut flower, pot plant and bedding plant crops. Application of plant physiological principles to crop culture, crop production costs and marketing.

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.

4900 Horticultural Problems. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Problems related to pomology, oliculture, nursery production, landscape design, or the culture, sales and arrangement of flowers.

5000 Research and Thesis. 2-6 credits, maximum 8. Research on thesis problems required of master's degree candidates.
5110* Advanced Horticultural Problems. 1-12 credits, maximum 20. Selected research problems in horticulture, floriculture, landscape design; nursery production, oleiculture, and pomology.

5122* Temperature Stress Physiology. Prerequisite: BOT 3463 or consent of instructor. Effects of heat, chilling and freezing stress on plants. Responses to temperature extremes at the molecular to whole plant levels, with emphasis on mechanisms of injury and resistance.

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.

5233* 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.

5433* 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 (precooling at harvest, controlled atmosphere storage, refrigeration, and packaging techniques). Commodity-specific postharvest phenomena.


Hotel and Restaurant Administration (HRAD)

1102 Survey of Hotel, Restaurants, and the Tourism Industry. Career opportunities and the scope, developments and forces of the mass feeding, housing and tourism industry.

1113 Introduction to Professional Food Preparation. Lab 3. Techniques and theories of food preparation including use and selection of equipment, sanitation and quality controls.

2111 Professional Sanitation in Food Service Industry. Lab 1. Prerequisite: Introduction to professional food preparation, chemistry. Sanitation for the hospitality industry. Food preparation and service, equipment, and guest accommodations.

2124 Fundamentals of Dining Room Management. Lab 4. Prerequisite: 1113 or NSCI 2113. Experience in organization and management of table and beverage service in varied food service settings. Same course as NSCI 2124.

2223 Executive Housekeeping. Lab 2. Prerequisite: 2111. Housekeeping management in the hospitality industry. Organization, labor controls, material and equipment costs, customer expectations of today’s lodging, food service, and institutional housekeeping departments.

2233 Multi-unit Food Operations. Lab 4. Prerequisites: 3111, 3123. Experience in operations 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.

3119 Science of Food Preparation. Lab 2. Prerequisites: 3111 or NSCI 2113, organic chemistry. Application of scientific principles on food preparation. Same course as NSCI 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 NSCI 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 institutional housekeeping as related to the front desk.

3340 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, electric wiring, plumbing, heating, 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. Prerequisites: 3133 or concurrent enrollment. Procurement of food and nonfood materials in hospitality and related industries. Same as NSCI 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. restrictions considered in relation to operations.

4213 Hotel and Restaurant Promotion and Sales. Prerequisite: junior standing. Fundamentals of sales promotion, the sales department, publicity types, methods of soliciting group business. Versatility, cost, timing and results of use of the advertising media.

4223 Concepts and Practices in the Tourism Industry. Prerequisite: GEOG 2253 or consent of instructor. The concept of the corporate travel department: travel industry inter-and intra-relations, financial management and automation, tourism and economic planning, and policy formulation. Handling and managing group tours involving airline, ocean-going, and ground transportation. Economic impact of tourism on related hospitality industry operations.

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 NSCI 4333.

4363* Food Production Management. Lab 6. Prerequisites: NSCI or HRAD 2123, 3133, 3553, and a course in accounting or mathematics or consent of instructor. Organization, purchasing, preparation and service of food for large groups. Same course as NSCI 4365.

4413 Hotel Operation Systems Analysis. Conceptional analysis of hotel operation systems such as food and beverage service, housekeeping, sales, property management, properties feasibility, personnel, accounting and front office. Investigation of inter- and intra-departmental functions.

4473 Institutional Food Service Layouts and Equipment. Prerequisites: 3103, 3473, 4363. Space allocations and equipment arrangements will be studied utilizing time motion analysis. Specifications for institutional equipment.

4483 Hospitality Facilities Layout. Lab 2. Prerequisites: 4473, HNAD 2103. The use of the Auto-Cad 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 NSCI 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 Food Services. Same course as NSCI 4573.

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 NSCI 4693.

4723 Survey of Beverages in the Hospitality Industry. Prerequisite: junior standing. History, 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 of study related to specific problems in the hospitality industry.

4883 Multi-unit Food Service Management. Prerequisites: 3473, MGMT 3313. Study of policy and procedure influencing the human side of hospitality management. Management decisions of multi-unit franchising, finance, menu strategy and marketing.

Industrial Engineering and Management (INDEN)

2903 Introduction to Industrial and Systems Engineering. Lab 2. Prerequisites: ENGR 1412; MATH 2265. Industrial and systems engineering concepts and techniques in production control, quality control, layout, methods engineering, material handling, mathematical programming, and engineering analyses. Depreciation and depletion methods and their effect on corporate income taxes, leading to after-tax cash flow analysis.
3513** Economic Decision Analysis. Prerequisite: MATH 2373 or 2713. Quantitative evaluation of investment alternatives for non-engineering majors. The role of interest in economic equivalence and in formulating economic the impact of money worth, annu-
ual equivalent, rate of return and payout criteria. Accounting, depreciation and income tax consider-
ations. Benefit-cost and cost-effectiveness analysis. Cost estimation and allowance for variance in esti-
nates. Not available for credit in industrial engineering curriculum.

3523** Engineering Cost Information and Control Sys-
tems. Prerequisite: MATH 2265. Basic cost measure-
ment and control concepts. How to measure and in-
terpret cost data and define its use in planning, control and estimating. Role of accounting in cost control.

3603** Industrial Operations Analysis. Prerequisite: sopho-
mores. Production management, covering the main aspects of organization, management and deci-
dision making within a systems approach. Not avail-
able for credit in industrial engineering curriculum.

3703** Engineering Computation and Interactive Model-
ling. Prerequisites: ENGR 1412 or COMSC 2123; and MATH 2265. Advanced programming techniques using pseudocode and Pascal. Using the computer for engineering analysis, design and problem solving.

3803** Industrial Safety Engineering. The theory of safety engineering with emphasis upon fundamental con-
cepts in the industrial environment.

3813** Work Performance: Analysis and Design. Lab 3. Productivity improvement through job design. Pro-
ductivity planning, measuring and improvement. Ma-
jor emphasis on measuring, evaluating and redesigning work processes.

4010** Industrial Engineering Projects. 1-3 credits, max-
imum 6. Prerequisite: consent of school head. Special undergraduate projects and independent study in indus-
trial engineering.

4014** Operations Research. Prerequisites: 3703, MATH 3623, STAT 4033. Fundamental methods, models, and computational techniques of operations research. Lin-
ear programming including transportation and assign-
ment models. Network models, dynamic program-
ning, decision theory, and queuing theory.

4023** Operations Research II. Prerequisites: MATH 2613, STAT 4033 and FORTRAN. Continued study of the fundamental methods of operations research; computa-
tional techniques on nonlinear programming, dy-
namic programming, inventory theory and analysis, queuing theory and analysis and simulation.

4103** Industrial Quality Control. Prerequisite: STAT 4033. Principles and practice of industrial control. Modern quality philosophy, including a process improvement strategy incorporating charter, documentation of knowl-
edge and improvement cycle. Theory and use of sta-
tistical process control (SPC) tools for problem identi-
ﬁcation and continuous improvement. Variables and attributes control charts for both discrete and continuous flow batch processes. Process capability and performance analysis including strengths and weaknesses of CpK and Ppk indices. Introduction to acceptance sam-
ping, including ANSl/ASQC Z1.4 standards.

4113** Industrial Experimentation. Prerequisite: 4103. Ana-
litical methods for the purpose of continuous process improvement using the Deming approach. Experimen-
tation driven by the Taguchi loss function, Taguchi arrays, linear graphs, triangular tables, and Taguchi's concepts of parameter and tolerance design. Exten-
sive use of factorial and fractional factorial designs for measurement and attributes data. Analysis of vari-
ance and graphical interpretation of significant factors and interactions. Wide variety of industrial applica-
tions.

4203** Reliability Location and Layout and Material Han-
dling Systems. Prerequisites: 3813 and senior stand-
ing. Design principles and analytical procedures for locating and developing an overall functional relation-
ship in order to accomplish the goals of the plant. Emphasis on age and movement for either an industrial or service oriented industry. Product-quantity analysis and ma-
terial handling system routing. Warehouse design, various layout methodologies, and their measures of merit. Introduction to material handling methods and technologies including automated systems. Case stud-
ies and field trips are required.

4323** Manufacturing Systems Design. Prerequisites: 3312, 3503. Principles and procedures related to the de-
sign, development and implementation, and control of manufacturing systems. Consideration of transfer lines, numerical control, flexible automation, robotics, and manufacturing support activities such as cost, quality, and materials control. Introduction to basic computer and computer-aided design and computer-aided manufacturing (CAD/CAM).

4413** Industrial Organization Management. Issues, con-
cepts, theories and insights of management with a focus on productivity. Application of management, emphasizing effective performance.

4613** Production Control. Prerequisite: 4014. Concepts of produc-
tivity and distribution of production environments. De-
sign of production planning and control systems. Tech-
niques used in demand forecasting, operations plan-
ing, inventory control, manufacturing, and progress control. A production simulator is used to provide a realistic application experience.


4723** Information Systems for Management Decisions and Control. Prerequisite: 3703. Systems engineer-
ing methodology applied to the design of information systems for management of all types of organizations. Data base management systems. Distributed and cen-
tralized systems. Different phases of system design and implementation.

4823** Industrial Ergonomics. Lab 3. Prerequisite: 3813. Characteristics of humans, equipment, and work envi-
rionment examined using a systems approach. Job designs that concurrently emphasize multiple goals of productivity, safety and employee satisfaction, inves-
tigation of psychological, social, safety, reward, train-
ing and ergonomic parameters that affect work life of both employee and supervisor.

4913 Senior Design Projects. Lab 6. Prerequisite: limited to students in the final semester of their professional program. Student teams work on professional-level engineering projects selected from a wide range of participating organizations. Projects are equivalent to those normally experienced by beginning profession-
als, and require both oral and written reports. (Offered only to students in industrial engineering and manage-
ment.)

4923** Energy and Water Management. Lab 2. Prerequisites: 3503 and ENGSC 2253. Design, implemen-
tation and management of energy and water manage-
ment programs. Energy and water conservation, choice of energy sources, safety and security of fuel storage, contingency planning and use of standby fuels. Phi-
losophy is to improve profits through optimal energy and water utilization. Outside speakers utilized when applicable. Lab work required on audit equipment.

4931 Industrial Engineering and Management Seminar. Prerequisite: senior standing. Designed to orient se-
niors toward their professional environments. These courses include placement procedures, resume construction, interviewing skills, professional dress, graduate school, professional societies and registration, personal man-
agement, and independent study. Taught by senior faculty; utilizes outside speakers.

5000** Research and Thesis. 1-6 credits, maximum 6. Prere-
quisite: approval of major adviser. Research and thesis for master's students.

5003** Quantitative Foundations for Industrial Engineer-
ing. Prerequisites: Fundamental knowledge of quantita-
tive methods necessary for advanced study in various areas of industrial engineering. Includes matrix algebra, real analysis, calculus of finite vari-
ables and transform methods. Application of theo-
rems to industrial engineering and related areas.

5101** Industrial Engineering Projects. 1-2 credits, maxi-
mum 6. Prerequisites: consent of school head and approval of major adviser. Special graduate projects and independent study in industrial engineering.

5103** Linear Programming. Prerequisites: 4014, or 5003, or MATH 5013; FORTRAN. Simplex algorithm to solve deterministic linear optimization models considering maximization and minimization objectives. Degeneracy, alternative optimal and no feasible solutions. Revised simplex procedures. Duality theory, economic inter-
pretations, dual simplexing and complementary pivot-
ning. Sensitivity analysis and parametric programming. Special cases of linear optimization problems and underlying mathematical foundations. Large-scale models including computational considerations. Same course as COMSC 5013.

5203** Engineering Practice. 1-9 credits, maximum 12. Prere-
quisite: approval of adviser. Professionally super-
vised experience in a real-life problem involving au-
thentic projects for which the student assumes a degree of professional responsibility. Activities must be approved in advance by the student's adviser. May consist of full or part-time engineering experi-
ences, capitalize on individual interests, individually re-
viewed by the instructor or a responsible group member. Periodic reports both oral and written required as specified by the adviser.

5302** Sequential Decision Processes and Dynamic Pro-
gramming. Prerequisites: 4014, 5003. The determi-
nation of policy that optimally allocates resources to the various stages of a finite-stage system. Determin-
istic and stochastic systems including serial systems, diverging branch systems, converging branch sys-
tems and loop systems.

5403** Advanced Industrial Quality Control. Prerequisite: 4103, STAT 4033. Modern quality philosophy and ap-
plication. Theory and application of traditional and nontraditional control charting techniques. Special em-
phasis on underlying assumptions such as normal-
ity and error-free inspection. Oriented toward eco-
nomically-based statistical monitoring of processes, including optimization of decision variables such as sample size, frequency, and control limit spread.

5503** Stochastic Processes. Prerequisites: MATH 2233, MATH 3613, STAT 4423. Description of stochastic pro-
cesses, probability structure, mean and covering 
function, the set of sample functions. Renewal pro-
cesses, counting processes, Markov chains, birth and death processes, stationary processes and their spec-
tral analyses. Same course as STAT 5133 and MATH 5133.

5603** Advanced Facility Location and Layout and Mate-
rial Handling. Prerequisites: MATH 2233, STAT 4033. A continuation and expansion of topics covered in 4203 with an emphasis upon model development for predicting and evaluating the effectiveness of pro-
duction and/or service systems. Advanced analysis and computer techniques.

5703** Computer Integrated Manufacturing. Prerequisite: 4103, STAT 4033. A survey of current computer-
aided manufacturing (CAM). Design, development, implementation and operation of modern manufactur-
ing systems. Prototype systems design, implementa-
tion and testing as well as applicable systems engi-
neering concepts.
Robotics Application Issues. Lab. 3. Prerequisite: graduate standing in engineering or consent of instructor. 2 Credits. Preparation for the use of robots in modern manufacturing and industrial systems. Design and selection of appropriate end effectors and sensors to produce a reliable cost-effective robotic application. Comparison of commercial and custom solutions of end effectors and sensors for study of industrial applications. Field trips to industry and work in the I&EM CAM/Robotics laboratory.

Industrial Engineering. 1-6 credits, maximum 6. Prerequisite: approval of major adviser. A detailed investigation into one area of industrial engineering with a required written report.


Project Management. Prerequisite: 4413 or equivalent. A systems approach to planning, organizing, scheduling and controlling projects. The behavioral and quantitative aspects of project management. Importance of working with personnel as well as technology. Project management software utilized.

Integrated Manufacturing Control Systems. Prerequisite: 4613. Manufacturing planning and control philosophies and methods for production. Materials requirements planning, just-in-time concepts, determinism and stochastic models, capacity planning, shop floor control, purchasing, master scheduling, production planning, and demand management. Also just-in-time as used in both Japan and the U.S., including total quality control, total cost reduction, and total productive maintenance.

Advanced Production Control. Prerequisites: 4014, 4613, corequisite: 5003. Advanced concepts and quantitative techniques used in production planning and control, including demand forecasting using regression, time series analysis, and Box-Jenkins models, mathematical programming approaches, to aggregate planning and disaggregation, static and dynamic scheduling of machines and cells, and independent demand inventory management. Deterministic and stochastic models and their relationship to Just-In-Time and Zero Inventory practices.

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, flowgraphs and GERT (Graphical Evaluation and Review Technique). Modeling of practical problems. Systems analysis using network techniques and available computer programs.

Discrete Systems Simulation. Prerequisites: STAT 4033 and FORTRAN. 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 SLAM simulation language.


Human Factors Engineering. Prerequisites: 3813, STAT 4013 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.

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. Understanding the productivity improvement process. Development of productivity measurement systems. Designing organizational processes which improve productivity.

Decision-making Models for Multi-objective Analysis. Prerequisite: 4014. Quantitative and qualitative aspects of multi-criteria 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.

Advanced Energy and Water Management. Prerequisite: 4923. Continuation of material covered in 4923 with an emphasis on modern management techniques. Critical issues, energy control systems, private purchases of gas, energy accounting. Significant case study or term paper required.

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, building. An 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 COMS 5793, ECEN 5293 and MAE 5793.

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. Emphasis on hazard communication program, reducing volume and total hazardous and management activities.

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.

Nonlinear and Integer Optimization. Prerequisites: 4014 or 5013, 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 COMS 6023.

Special Problems in Industrial Engineering. 1-6 credits. Permission of instructor. Special problems in industrial engineering and management under supervision of a member of the Graduate Faculty.

Reliability and Maintainability. Prerequisites: 5003, STAT 4033, FORTRAN. Probabilistic failure models of components and systems. Detailed study of reliability methodology, reliability tests, and probabilistic reliability models. Classical and Bayesian reliability testing for point and interval estimation of exponential and Weibull failures. Reliability optimization through allocation and redundancy. Fundamentals of maintainability.

2883 Radio-Television Announcing and Performance. Lab 3. Prerequisites: 1393 and 2873. The announcer-news caster'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.

3130 Advertising Media and Markets. Prerequisite: 2013. Introduction to advertising media and the development of advertising media. Focus on the role of the advertising media in society. Students will gain an understanding of the advertising media and their role in society.

3173 History of Mass Communication. Prerequisite: junior standing. Historical development of mass communication systems in America, with emphasis upon the role of the mass media in society. Students will gain an understanding of the historical development of mass communication systems in America.

3293 Visual Communication. Use of photographs, charts, graphs and other visual representations in the mass media; the language of pictures; theories of nonverbal communication aids in education and other information systems.

3383 Public Relations Management and Strategies. The practice and techniques of public relations as a management function in business, industry, government, education, agriculture, home economics and other fields. Designed for non-majors.

3400 Journalism, Advertising and Public Relations Laboratory. 1-3 credits, maximum 5. Prerequisites: junior standing and completion of 1393, 2873, or 2413 or consent of instructor. Laboratory and/or internship practice for qualified students who wish to pursue careers in journalism, advertising, and public relations.

3413 Public Affairs Reporting. Lab 5. Prerequisites: 2413, POLS 3613. Coverage of social problems, people and events in fields of government, business, science, sports and entertainment.

3423 News Editing II. Lab 6. Prerequisite: 2413. Advanced copy editing; ethics and legal considerations from an editor's viewpoint; design techniques for newspapers and magazines including picture editing, introduction to type, makeup and design practices, and special pages.

3493 Public Relations Media. Lab 6. Prerequisite: 2393. A fundamental course in planning, researching, writing and editing materials used in public relations communications.

3553 Radio and Television News Writing. Lab 3. Prerequisite: 2393. Broadcast news writing and reporting techniques with emphasis on radio coverage. Familiarization with news values, news services, broadcast equipment. Lab work in news reporting and writing.

3602 Advertising Copy and Layout. Lab 6. Prerequisites: 2013, 2413. Advertising copy and layout; modern merchandising techniques; application emphasizing local and regional problems.

3750 Graphic Communication. Lab 3. Prerequisite: 1393. Theory and practice of typographic layout and design, and production of printed communication.

3900 Radio-Television-Film Laboratory. 1-2 credits, maximum 5. Lab 6. Prerequisites: junior standing and completion of 1393 and 3553, or consent of instructor. Preparation and participation in all phases of radio-television-film, and cable through active internship programs.

3913 Television Production. Lab 3. Prerequisite: 2873. Television production techniques, including camera, audio, lighting, staging, producing, graphics and on-air performance.

4003 Communication Technology. Overview of satellite delivery of print media, radio, television and cable program services, data services, computer technology, public relations and advertising uses of the new technologies.

4063 Supervision of High School Publications. Essential journalistic forms for high school publications; organization and administration of high school publications; intended to meet the requirements for the state teacher's license in language arts.

4123 Broadcast Promotion. Prerequisite: 2873. Nature, tools and techniques of promotion in radio, television and cable; concepts of evaluation of promotion effectiveness; ethics of broad and narrowcast promotion.

4133 Creative Newspaper Promotion. Prerequisite: senior standing. Community newspaper promotional methods; special pages, special editions, contests and self-advertising campaigns; counseling advertisers on merchandising efforts.

4153 Urban Journalism. Prerequisite: senior standing. Business and editorial management of newspapers, magazines, and industrial, business and farm publications.

4183 Advanced Public Relations. Prerequisite: 2183. Public relations publications planning, problem solving, management techniques, policies and case study analysis.

4223 Broadcast Sales. Prerequisites: 1393, 2213, 2873 and junior standing. Sales development, pricing, promotion and other aspects of broadcast sales and sales management.

4243 Programs and Audiences. Audience analysis, proper construction of programs for greatest appeal and use of appeal to attract the desired audience. Program types, rating systems, program selection and audience attention. Design and discussion of programs to reach specific audiences.

4263 Broadcast Management. Prerequisites: 1393, 2213, 2873. Functions, structure and organization of the broadcasting industry; special problems in broadcast station management, including personnel, sales, programming and government regulations.

4300 Special Problems in Journalism and Broadcast. 1-3 credits, maximum 6. Prerequisites: senior standing and minimum of 3.00 GPA. Independent study and project development to fit the student's major or minor specialization.

4413 Advanced Reporting and Writing. Lab 5. Prerequisites: 2413. Enhancement of writing style and reporting techniques; evaluation of sources and polling techniques; investigative coverage of newsmakers and events.

4433 Feature Writing for Newspapers and Magazines. Prerequisite: 15 semester hours of English or journalism including 4413 for journalism majors. Language features and special articles for general circulation magazines, business and trade journals; sources, materials, methods, and factors pertinent to nonfiction writing.

4453 Communications in Agriculture. Fundamentals of newswriting and other communication methods; the role of the news media in agriculture and related fields. Same course as AG 4453.

4553 Advanced Radio-Television News Reporting. Lab 3. Prerequisites: 3553 and 3913. Advanced broadcast news writing with emphasis on techniques of feature and in-depth reporting for radio, television and cable television.

4573 Broadcast Documentary. Lab 3. Prerequisite: 3913. Student-written and produced broadcast and cablecast mini-documentaries; analysis of selected programs.

4583 Writing for Radio-Television-Film. Lab 3. Prerequisite: 3913. Relationship of written to spoken language, Commercial continuity and specialized copy. Scriptwriting and adaptation to specific media.

4603 Advanced Advertising Copy and Layout. Lab 3. Prerequisites: 3013, 3603. Creative strategy and execution of advertising for mass media. Problems in idea creation for advertisers; emphasis on both the written and visual components of advertising policies.

4623 Advertising Campaigns. Lab 3. Prerequisites: 3013, 3603. Preparation and presentation of advertising production merchandising campaigns for national and local firms; work in teams with agencies and clients.

4653 Television and Radio Advertising. Lab 3. Prerequisite: 3603. Functions and characteristics of broadcast advertising; merchandising campaigns for national and local firms; work in teams with agencies and clients.

4673 Television and Radio Advertising. Lab 3. Prerequisite: 3603. Functions and characteristics of broadcast advertising; merchandising campaigns for national and local firms; work in teams with agencies and clients.

4823 Photography II. Lab 3. Prerequisite: 3823. Technical and scientific phases of photography; basics of color photography; studio problems; photographic communication theory.

4833 Basic Motion Picture Techniques. Lab 3. Prerequisite: 3823 or consent of instructor. Cameras, lenses, film characteristics and motion pictures and Beta minicam techniques, including the film documentary and cinematography for television. Special problems of preparing teaching and public relations films.

4843 Public Relations Programs. Prerequisites: 3493; 4183. Research, preparation and presentation of public relations campaigns. Integration of public relations principles and methods; work in teams in organizational and agency situations.

4923 Television Directing. Lab 3. Prerequisite: 3913. Techniques and aesthetics of television directing in various standard directing formats.

4953 Advanced Television Practices. Lab 3. Prerequisite: 3913. Advanced professional television production. Student-conceived and directed television programs, including "specials," for distribution on cable or other professional media.
Landscape Architecture (LA)

1013 Introduction to Landscape Architecture. An overview of the field of landscape architecture with emphasis on the role of the landscape architect and the need for design and management of outdoor space and structures and the environment.


2213 Landscape Architectural Graphics I. Lab 6. Prerequisite: 4 credit hours in freehand drawing or drafting. Drafting and illustration techniques for developing and presenting landscape concepts and designs in black and white media.

2223 Landscape Architectural Graphics II. Lab 6. Prerequisite: 2213. The application of multimedia color presentation and delineation techniques to more complex plans, drawings and programs.

3010 Internship in Landscape Architecture and Landscape Contracting. 1-6 credits, maximum 8. Prerequisites: 45 credit hours, consent of internship chairperson. Supervised work experience with approved public and private employers in landscape architecture, landscape contracting or related fields. May not be substituted for other required courses.

3112 Landscape Architecture Seminar I. Prerequisite: 3324. Professional analysis of various aspects of the landscape architecture profession and designed works with guest speakers and in-state or regional field trips to completed works. Required of fourth year students.

3314 Landscape Architectural Design I. Lab 8. Prerequisite: 1013 and 2223. Introduction to the principles of design, problem solving, site analysis, and the correlation of aesthetic concerns with functional solutions in small-scale landscape architecture design problems.

3324 Landscape Architectural Design II. Lab 8. Prerequisite: 3314. The design of small to medium scale areas with an emphasis on natural and man-made landscape resources and their application to land use.

4514 Landscape Architectural Design V. Lab 8. Prerequisite: 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: 2223. Individual studio projects geared to design, course level. Offered only during the summer session. Can be substituted for landscape architecture design courses II through IV.

4573 Recreation Planning. Lab 6. Prerequisite: consent of instructor. Theory and methods for small and large scale area planning with emphasis on natural and cultural resources.

4584 Landscape Environmental Planning. Lab 8. Prerequisite: 3324. Development of landscape architectural projects in the context of conservation, preservation, urban, regional planning and other developmental design problems encountered by the landscape architect.

2460 Landscape Architecture Assembly. 1 credit, maximum 4. Prerequisite: 3894. Presentations by faculty members and guest speakers dealing with various aspects of landscape architecture or related fields.


4990 Landscape Architecture Special Problems. 1-6 credits, maximum 6. Prerequisite: consent of appropriate faculty member. Landscape architectural related problems.

5110 Advanced Special Problems. 1-12 credits, maximum 20. Prerequisite: consent of appropriate faculty member. Specific landscape architectural problems.

Latin (LATIN)

1113 Elementary Latin I. The rudiments of beginning Latin: grammar, vocabulary and elementary readings.
Management (MGMT)

Management. Prerequisites: completion of 50 credit hours and ACCTG 2203, [CON 2013, MSIS 2103, STAT 2023]. Management principles and techniques of analysis. Decision making as applied to management systems, organizations, interpersonal relationships and production.

Organizational Behavior and Management. Prerequisites: 3013, and SOC 1113 or PSYCH 1113. Behavioral science concepts relevant to the study of organizational and managerial behavior. Provides an understanding of the components and dynamics of organizational behavior essential to any manager. Managerial applications stressed.


Compensation Administration. Prerequisites: 3313, STAT 2023. Introductory course. Fundamentals of compensation such as the legislative environment, compensation theories, job analysis, job evaluation, wage structures and indirect compensation programs.

Organization Theory and Development. Prerequisite: 3123. The design of formal organizations with an emphasis on topics related to organizational and managerial effectiveness. Focus on what is known about managerial and organizational effectiveness and how this knowledge may be applied.

International Management. Prerequisite: 3013. Survey of the organization, planning and management of international operations of business firms. Exploration of major cultural, economic and political systems, and their effects on the management function.

Conflict Resolution in Industry. Prerequisite: 3013. An integrated and interdisciplinary approach to the issues of industrial conflict and conflict resolution. An analytical development stressing both theory and empirical research. Models of conflict; conflict between the individual, the group and the organization; economic conflict and industrial conflict.

Advanced Human Resource Management. Prerequisite: 3313. Management of human resources at the organization level including employee relations laws and human resource planning.

Advanced Methods in Management Research. Prerequisite: 3103. Advanced research methods focusing on organizational and management research. Course examines issues in theory building and development, strategies for collecting behavioral research. At conclusion of course, student should be able to: develop research questions, develop appropriate measures for constructs to be tested, and design research study using various methodologies.

Management Science and Information Systems (MSIS)

Business Computer Concepts and Applications. Prerequisites: 30 credit hours and MATH 1513. Computer concepts, terminology, and software applications. Overview of hardware and software components of various management information systems, futuristic trends, database management systems, systems analysis and design, and data communications. Introduction to database, spreadsheet, and word processing software application packages and application programming.

Computer Programming for Business. Prerequisite: 3013. Study of computer programming languages and techniques for programs business applications using the COBOL language. File structures, file updating techniques, sorting, report writing, magnetic tape and disk file handling.

Production and Operations Management. Prerequisite: MGMT 3013. Production and operations management. Reviews empirical studies and practical problems encountered in accounting, marketing, finance, economics and management. Linear programming and network models.

Managerial Decision Theory. Prerequisite: 3223. Decision processes under risk and uncertainty. The use of models in business decision making with outcomes governed by probability distributions. Bayesian decision making, utility measurement, game theory, Markov chains, queuing, simulation probabilistic forecasting and inventory, network models, and dynamic programming.

Business Systems Analysis. Prerequisites: 2103, 3103, ACCTG 2203. Systems analysis as a profession and role of the systems analyst in the analysis, design, and implementation of computer-based business information systems. Current system documentation through use of classical and structured tools and techniques for describing flows, data flows, data structures, file designs, output and input designs, and program specifications. Information gathering and reporting activities and transition into system analysis and design.

Systems Design and Development. Prerequisite: 3303. Business information systems design and development, with coverage of essential systems analysis and design techniques. Theory and application of prototyping. Computer-aided software engineering and fourth-generation language tools used to develop a functioning business information systems. Project management and additional analysis, design and development topics discussed.

Advanced Computer Programming for Business. Prerequisite: 3103. Advanced computer programming techniques are examined with an emphasis on the development of computer programs for business applications. File processing, sorting, database systems, time sharing, special files, disk-indexed sequential files, and virtual storage applications are an integral part of the course. Subjects include problem solving as TSO, segmentation, debugging tools and procedures, and pertinent JCL are also studied and applied.

Library Science
Marketing Education (MKTED)

2010 Career Exploration in Marketing Education. 1-2 credits. Maximum 2. Marketing 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, understanding of the environment and skills involved in marketing.

3113* Foundations of Occupational Education. Occupational education and its development, role and function in a modern educational system. Economic and sociological foundations of occupationally oriented programs plus specific information on serving students with multi-cultural backgrounds and specific needs. Same course as OAE 3113.

3253* Curriculum in Marketing Education. Prerequisite: MKTG 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.

5325* Seminar in Marketing Education. 3 credits, maximum 9. Prerequisite: 5133. Selected topics in marketing. Industrial marketing, product management, strategic marketing planning, international marketing, and services marketing.

5513* Marketing Research Methodology. Prerequisite: 5133. Research methodology applied to marketing problems. Measurement, survey research, experimentation, and statistical analysis of data.

5413* Advanced Marketing Research. Prerequisite: S313. Introduction to the latest empirical marketing research techniques. Data collection and analysis techniques such as conjoint analysis, multidimensional scaling, path analysis, and structural equations modeling (via LISREL).

5513* Seminar in Marketing Theory. Prerequisite: 5133 or consent of instructor. Development of an evaluation of marketing theory.

5553* International Marketing Strategy. Prerequisite: 5133. An analysis of marketing in the global environment. Environmental effects on international marketing management and corporate strategy decisions.

5613* Seminar in Consumer Behavior. Prerequisite: 5133 or consent of instructor, Psychological, sociological, and anthropological theories related to consumer decision processes. Special emphasis on current empirical research in consumer behavior.

5713* Seminar in Promotional Strategy. Prerequisite: 5133. Promotional problems encountered by a firm and approaches to their solution.

5813* Seminar in Channels of Distribution. Prerequisite: 5133. Development structure and interrelationships among members of marketing channels involving customer service, physical distribution decisions, and operating policies.

5913* Measurement and Experimental Design. An analysis of measurement issues from both psychometric and marketing perspectives. Scale construction and validation. The design, analysis, and evaluation of marketing experiments.

Mass Communications (MC)

5000* Thesis. 1-6 credits. Maximum 6. For mass communication graduate students who are candidates for the master's degree.


5113* Methods of Research in Mass Communication. Prerequisites: consent of instructor and consent of department head. Designed to develop the instructional competencies needed by a marketing education teacher-coordinator in a general or specialized marketing education program.

5223* Mass Communication Research Analysis and Interpretation. Prerequisite: 5113. Single- and multi-variable analysis, interpretation and reporting of mass communication research data. Use of computers in research analysis.

5333* Problems and Effects of Mass Communication. Mediating factors that affect interaction of ingredients in the communications process, and how these factors can affect the fidelity of information conveyed.

5683* Public, Educational and Instructional Television. Uses of non-commercial television in public, educational and instructional applications. Analysis of program types and content.

5733* Responsibility in Mass Communication. Interaction between mass media and society, with emphasis upon the communicator’s ethics and responsibilities.

5770* Seminar in Communications Media. 1-3 credits, maximum 9. Prerequisite: graduate standing or consent of instructor. International communication, media history, legal research, new technology, and the media, television and children, industrial television, and communication research.

5883* Advanced Media Management. Prerequisite: JB 4723 or consent of instructor. Trade area surveys; building and plant engineering; management of human, physical and financial assets; labor-management relations; estimating and cost controls.
Mathematics (MATH)

0123
Intermediate Algebra. Prerequisite: one year of high school algebra or equivalent. Review of fundamental operations of algebra, rational expressions, exponents and radicals, linear and quadratic equations, inequalities, introduction to analytic geometry. Does not count for college credit.

1314
General College Mathematics. Topics from set theory, logic, and probability. Not preparatory for subsequent mathematics courses.

1513
(A)College Algebra. Prerequisite: two years of high school algebra or 0123. Quadratic equations, functions and graphs, inequalities, systems of equations, exponential and logarithmic functions, theory of equations, sequences, permutations and combinations. No credit for those with prior credit in 1715 or any mathematics course for which 1513 is a prerequisite.

1813
(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.

1913
(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.

2103
(A)Elementary Calculus. Prerequisite: 1513. An introduction to differential and integral calculus. For students of business and social sciences.

2113
(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.

2133
(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.

2145
(A)Calculus I. Prerequisites: 1715, or 1513 and 1613. An introduction to derivatives, integrals and their applications, including introductory analytic geometry.

2155
(A)Calculus II. Prerequisite: 2145. A continuation of 2143 including multivariate calculus, series, and applications.

2233

2413
Arithmetic for Teachers. Foundations of arithmetic for the elementary teacher.

2513
Structural Concepts for Teachers. Prerequisite: 2413 or equivalent. Structures of the number system; informal geometry. For the elementary teacher.

2603
Finite Mathematics. Prerequisite: 2103. Discrete probability, vectors and matrices and linear programming. For students of business and social sciences.

2653
Discrete Mathematics I. Prerequisite: 1513 or 1715. Logic, set theory proof techniques, probability and combinations, relations and functions, matrix algebra, graphs, Boolean algebra and lattices. Same course as COMSC 2653.

2910
Special Studies. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Special subjects in mathematics.

3013
Linear Algebra. Prerequisite: 2145. Algebra and geometry of finite-dimensional linear spaces, linear transformations, algebra of matrices, eigenvalues and eigenvectors.

3263
Linear Algebra and Differential Equations. Prerequisite: 2155. An integrated treatment of linear algebra and differential equations. No credit for those with credit in 2233 or 3013.

3313
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.

3403
(A)Geometric Structures. Prerequisite: 1513 or equivalent. Fundamentals of geometry, geometric motion (translation, rotations, reflections), polyhedra, applications to measurements.

3413
Essential Mathematics for the Biological and Social Sciences II. Prerequisite: 3313. Selected topics from analytic geometry, polynomial calculus and matrix algebra. Applications to social and biological sciences.

3603
(A)Mathematical Structures. Prerequisite: 1513 or equivalent. Foundations of numbers (set theory, numeration, and the real number system), number theory, algorithms, systems, functions and applications, and probability.

3613
Introduction to Modern Algebra. Prerequisite: 3013. Introduction set theory and logic; elementary properties of rings, polynomial rings, and integral domains.

3653
(A)Discrete Mathematics II. Prerequisite: 2653 or 3613. A continuation of 2653. Algebraic structures, coding theory, finite state machines, machine decomposition, computability, formal language theory. Same course as COMSC 3653.

4013
Engineering Mathematics: Calculus of Several Variables. Prerequisites: 2155 and 3013. Differential and integral calculus of functions of several variables, vector analysis, Stokes’ Theorem, Green’s Theorem and applications.

4023
Introduction to Modern Analysis. Prerequisite: 2365. An introduction to the theorems and proofs of one-variable calculus. Properties of the real numbers, sequences and series of constants and functions, limits, continuity, differentiation and integration.

4033
(A,SpD)History of Mathematics. Prerequisite: 2265. Early development of mathematics as a science, contributions of Greek mathematics, mathematical advancements of the 17th and 18th centuries, and the mathematics of the 19th and 20th centuries. The emphasis in the course will be replicating the setting and techniques of the times to understand the nature of a discovery and its relationship to contemporary thought.

4143
Advanced Calculus I. Prerequisite: 4023. A rigorous treatment of calculus of one and several variables. Elementary topology of Euclidean spaces, continuity and uniform continuity, differentiation and integration.
Intermediate Probability Theory. Prerequisites: 4363 and STAT 4113. Measure theoretical presentation of probability, integration and expectation, product spaces and independence, conditioning, different kinds of convergence in probability theory and statistical spaces. Same course as STAT 5113.

Stochastic Processes. Prerequisites: 2233, 3013 and STAT 4113. Definition of stochastic processes, probability space, and covariance function, the set of sample functions, stationary processes and their spectral analysis, renewal processes, counting and renewal processes, counting processes, discrete and continuous Markov chains, birth and death processes, exponential model, queuing theory. Same course as INDEN 5133 and STAT 5133.

Real Analysis I. Prerequisite: 4153. Measure theory, measurable functions, integration and differentiation with respect to measures.


Fourier Analysis. Prerequisite: 4013 or 4023. Orthogonal series expansions, Fourier series and integral analysis: Hahn-Banach, uniform boundedness, convergence in probability theory and statistical spaces of continuous functions.

Partial Differential Equations. Prerequisite: 4013 or 4233. Classification of second order equations, characteristics, general theory of first order equations, Dirichlet problem for Laplace’s equation and Green’s functions, eigenvalue problems, and variational methods.

Ordinary Differential Equations I. Prerequisite: 4143; 5013 or 5023. Existence and uniqueness of solutions, linear systems and their asymptotic behavior, oscillation and comparison and singularities.

Ordinary Differential Equations II. Prerequisite: 5243. Stability and asymptotic behavior of systems of nonlinear differential equations, Liapunov Theory, perturbation and the Poincare-Bendixson theory for planar autonomous systems, bifurcation basins and attractors, chaotic behavior, and invariant tori.

Complex Analysis I. Prerequisite: 4143. Basic topology of the plane, functions of a complex variable, analytic functions, transformations, infinite series, integration and conformal mapping.

Complex Analysis II. Prerequisite: 5283. Riemann Mapping Theorem, meromorphic functions, analytic continuation, Dirichlet problem, and entire functions.

General Topology. Prerequisite: 4143 or consent of instructor. Basic properties of topological spaces and continuous functions, connectedness, compactness, and separation and countability axioms. Metric, product, and quotient spaces, Urysohn lemma, and Tietze extension theorem.

Geometric Topology. Prerequisites: 4613, 5303. Manifolds, complexes, the fundamental group, covering spaces, combinatorial group theory, the Seifert-Van Kampen theorem, and related topics.

Differential Geometry. Prerequisite: 4013 or 4143. Differential manifolds, vector fields, differential forms, connections, Riemannian metrics, geodesics, completeness, curvature, and related topics.

The Calculus of Variations and Optimal Control. Prerequisite: 4023 or 4413. Extrema of integrals depending on unknown functions, Euler conditions, Hamilton conditions, Weierstrass E-function, Pontryagin maximum principle, bang-bang controls, feedback, stochastic problems and Kalman-Bucy filter.

Numerical Analysis for Differential Equations. Prerequisites: 4513 or COMSC 4513, and 4253. Advanced machine computing, algorithms, analysis of truncation and rounding errors, convergence and stability applied to discrete variables, finite elements, and spectral methods in ordinary and partial differential equations. Same course as COMSC 5543.

Numerical Analysis for Linear Algebra. Prerequisites: 4513 or 4613 or COMSC 4513. Advanced machine computing, algorithms, analysis of rounding errors, condition, convergence, and stability applied to a direct and iterative solution of linear systems of equations, linear least squares problems, and algebraic eigenvalue problems, including LU and QR factorization, conjugate gradients, QR algorithm, and Lanczos method. Same course as COMSC 5553.

Case Studies in Applied Mathematics. 1-3 credits, maximum 6. Prerequisites: 2233, 4013, and knowledge of computer programming. Selected mathematical problems from industry, independent problem-solving, oral presentation of solutions, and technical report writing. Seminar-style format.

Methods of Applied Mathematics. Prerequisites: 2233, 4013, and knowledge of computer programming. Continuous and discrete techniques in modern applied mathematics. Positive definite matrices, eigenvalues and eigenvectors, dynamics of systems, discrete and continuous equilibrium equations, least squares estimation and the Kalman filter, potential flow, calculus of variations, network flows, and combinatorics.

Algebra I. Prerequisites: 4613. A rigorous treatment of classical results in group theory and ring theory.

Algebra II. Prerequisites: 5613. A rigorous treatment of classical results in module theory and field theory.

Automata and Finite State Machines. Prerequisites: 3113 or COMSC 5313 or COMSC 5113 and COMSC 5213. Finite state machine, state diagrams and flow tables, equivalent states and equivalent machines. Formal grammars, context-free languages and their relation to automata. Turing machines, and recursive function. Same course as COMSC 5653.

Computability and Decidability. Effectiveness, primitive recursivity, general recursivity, recursive functions, equivalence of computability, definitions, decidability, recursive algorithms. Same course as COM 5663.


Advanced Seminar in Mathematics. 1-3 credits, maximum 12. Prerequisite: consent of instructor and student’s advisory committee. Directed reading on advanced topics in mathematics.


Functional Analysis I. Prerequisites: 4613 or 5023, 5153, 5303. Theory of topological vector spaces including metrizability, consequences of completeness, Banach spaces, weak topologies, and convexity.

Functional Analysis II. Prerequisite: 6143 or consent of instructor. Introduction to and basic results in several subfields of analysis which employ functional analytic methods. Topics from bounded and unbounded operator theory, Banach algebras, distributions, Fourier analysis, and representation theory.

Harmonic Analysis. Prerequisites: 5153, 5283. Classical results giving connections among the size of a harmonic or analytic function on a complex domain, the existence and smoothness of its boundary values, and behavior of the Fourier series; selected extensions, related topics and applications.


Several Complex Variables. Prerequisite: 5293. Elements of function theory of several complex variables, including extension phenomena, domains of holomorphy, notions of convexity, holomorphic maps, and complex analytic varieties.

Topics in Analysis. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Advanced topics in analysis.

Algebraic Topology I. Prerequisite: 5313. Chain complexes, homology and cohomology groups, the Eilenberg-Steenrod axioms, Mayer-Vietoris sequences, universal coefficient theorems, the Eilenberg-Zilber theorem and Kan nunneth formulas, cup and cap products, and duality in manifolds.

Algebraic Topology II. Prerequisite: 5323. Homotopy groups, the Hirzebruch and Whitehead theorems, the Eilenberg-MacLane obstruction theory, fibrations, spectral sequences, and related topics.

Topics in Topology. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Advanced topics in topology.

Algebraic Geometry. Prerequisite: 5623. Affine and projective varieties, dimension, algebraic curves, divisors, and Riemann-Roch theorem for curves.

Complex Geometry. Prerequisite: 5283. Complex manifolds, analytic sheaves, differential forms, Dolbeault cohomology, Hodge theory, line bundles, divisors, Kodaira embedding, and vanishing.

Topics in Geometry. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Advanced topics in geometry.

Theoretical Numerical Analysis. Prerequisites: 5153, 5543 or COMSC 5543, and 5553 or COMSC 5553. An advanced theoretical treatment based on function spaces and operator theory of algorithms for machine computing and analysis of errors.

Topics in Applied Mathematics. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Advanced topics in applied mathematics.

Commutative Algebra. Prerequisite: 5623. Commutative rings, exactness properties of modules, tensor products, integral dependence, chain conditions, completions, filtrations, local rings, dimension theory, and flatness.

Homological Algebra. Prerequisite: 5623. Closed and projective classes, resolution and derived functors, adjoint functors, construction of projective classes in the categories of rings, groups and modules; categories, Abelian categories.

Topics in Algebra. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Advanced topics in algebra.

Analytic Number Theory. Prerequisite: 4283 or 5283. Arithmetical functions, Zeta and L functions, distribution of primes and introduction to modular forms.
Mechanical and Aerospace Engineering (MAE)

3033* Mechanism Design. Prerequisite: ENGS 2122. Motion programming and analysis of machines. Kinematics of cams, gear trains, and plane mechanisms. Introduction to symbolic logic.

3043* Intermediate Dynamics. Prerequisites: ENGS 2122 and MATH 2613. A comprehensive treatment of the kinematics and kinetics of particles, systems of particles, and rigid bodies from a Newtonian viewpoint, utilizing rigorous vector techniques. An introduction to translational vibrations of mechanical systems and Lagrange's equations applied to mechanical systems.

3112* Measurements and Instrumentation. Lab 2. Prerequisite: 3723. Theory and laboratory in the measurement of electrical quantities, strain, force, velocity, frequency, temperature and flow rate. Report writing including the use of charts, graphs, diagrams and uncertainty analysis.

3123 Manufacturing Processes. Prerequisites: ENGS 2142 and ENGS 3313 or equivalent. An introduction to manufacturing processes including the fundamental processes of casting, forging, rolling, extrusion, drawing and metal cutting. Quantitative relationships to identify important parameters which influence a given process.

3223 Thermodynamics I. Prerequisite: ENGS 2213. A continuation of ENGS 2213. Irreversibility and availability, power cycles, refrigeration cycles, mixtures and solutions, chemical reactions, phase and chemical equilibrium, and introduction to compressible flow.


3293* Compressible Fluid Flow. Prerequisites: ENGS 3233 and MATH 2613. Gas flows in one and two dimensions. Basic thermodynamic and dynamic equations. Nozzle and duct flows, choking, plane and oblique shock waves, Prandtl-Meyer expansions, rocket propulsion, frictional 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 machine and structural members: general theories of stress and strain; stress-strain relations; theories of failure; reliability and safety factors in design; fatigue considerations.

3403* Computer Methods in Analysis and Design. Prerequisite: FORTRAN programming. Application of digital computer methods in the design, analysis, and simulation of mechanical, thermal, and fluid systems. Use of interactive computer graphics in conceptual design and presentation of design analysis results.


3723* Introduction to Dynamic Systems. Prerequisites: MATH 2613, ENGS 2122 and 2613. Physical and mathematical modeling of electrical and mechanical dynamic systems. Analysis of mechanical and fluid systems. Use of numerical techniques for analyzing systems. Stability, transfer functions, frequency response and resonance.

3733* System Modeling, Simulation, and Design. Lab 3. Prerequisites: 3723 or ECEN 3723. Advanced modeling of mechanical engineering systems (mechanical, electrical, chemical, fluid and thermal). Numerical techniques for simulating system response. Model verification and identification, not-ideal elements and nonlinear effects. Correlation of experimental results (laboratory studies of mechanical engineering systems) with simulation and analytic response predictions. Use of system modeling, analysis and simulation as a design technique.

4010* Mechanical Engineering Projects. 1-6 credits, maximum 6. Lab variable. Prerequisite: consent of instructor. Special projects and independent study in mechanical engineering.

4052* Introduction to Control Systems. Prerequisites: 3723, 3733, or ECEN 3723. Properties of feedback control systems, mathematical models of basic components, state-variable models of feedback systems, time-domain analysis, stability, transfer function analysis, frequency-domain techniques, root-locus, design of single-input-single-output systems and simple compensation techniques.


4133* 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.

4143 Advanced Materials and Processes. Prerequisites: 3253 and 3723. Innovation in advanced materials and processes. Building U.S. strengths for maintaining a competitive edge in the global market. Use of the U.S. Patent Depository in the OSU Library to research selected areas of advanced materials and technological processes. Student invention or invention concepts. Highly interactive, with extensive group discussions.

4223* Experimental Aerodynamics. Lab. 3 Prerequisites: 3112, 4233. Experimental study of fundamental aero- dynamic principles. Aerodynamic characteristics of airfoils and the infinite wing. Application of low-speed wind tunnel testing techniques. Also experimental evaluation of performance, stability and control of aircraft in flight.


4243* Gas Power Systems. Prerequisites: 3223 and ENGS 3233. Combustion processes and power engines utilizing a gas as the working substance. Basic thermodynamic and dynamic equations of one-dimensional compressible flow, including isentropic flow and normal shock waves. Applications to both transportation and stationary systems.

4253* Vapor Power Systems. Prerequisites: 3223, ENGS 3233. Power and propulsion engines utilizing a gas as the working substance. Basic thermodynamic and dynamic equations of one-dimensional compressible flow, including isentropic flow and normal shock waves. Applications to both transportation and stationary systems.

4273* Experimental Fluid Dynamics. Lab 3. Prerequisites: 3112 and ENGS 3233. Experimental study of fundamental processes in aerodynamics and fluid dynamics using advanced measurement techniques.


4323* Design for Manufacturing. Lab 3. Prerequisites: 3312 and ENGS 3313. Integration of concepts of product design with manufacturing principles, including behavior and properties of materials, 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: 3033, 3043, 3112 and 3733. 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, instrumentation, controls, fluid mechanics, and energy production.

4353* Mechanical Design Analysis. Prerequisite: 3323. Analysis and synthesis of machine components such as shafts, gears, and pulleys. Design of machine elements and components: machine elements; machine elements and components: torque transduction; analytical methods for the study of impact, dynamic loading and fatigue; comprehensive treatment of failure, safety and reliability.

4363* Mechanical Engineering 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 polariscopes, load cells and accelerometers.

4373* Aerospace Vehicle Design. Prerequisites: 3253, 4243, 4283, 4513, or consent of instructor. Solution of problems arising in the design of aerospace systems. Prediction of the aerodynamic, structural, propulsion and control characteristics.

4401 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.


Fundamentals of Reservoir Engineering. Prerequisites: MATH 2613, CHENG 3473 or MAE 3613. Properties of porous media, properties and phase behavior of reservoir fluids. Computational schemes, including numerical methods, for predicting and optimizing production rates and establishing reserves.


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.

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.

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 setting.

Advanced Dynamics. Prerequisites: 3043, MATH 3013. Advanced treatment of analytical methods for rigid body motion with emphasis on multi-dimensional motion. Newtonian formulations, Lagrange’s equations, Euler’s equations, the Poincaré construction, Hamilton’s equations. Canonical transformations, spin stabilization, the rotation matrix, and Kane’s formulations. Applications to engineering problems.

Mechanical Vibrations. Prerequisite: 4063. Analysis of linear vibrations, classical analysis of continuous systems and numerical methods.

Engineering Acoustics. Acoustical analysis and measurement techniques, with emphasis on design applications of noise and vibration control in machinery and in buildings.


1) Tribology. The principles of tribology. Definition of tribology, contact of solids, surface topography, real area of contact, friction of various materials, basic mechanisms of friction, mechanisms of wear (adhesion, abrasion, fatigue, erosion, and fretting), hardness of solids, frictional heating and surface temperatures, material properties that influence surface interactions, surface roughness measurement and surface integrity - residual stresses and subsurface deformation, application of tribology to manufacturing, wear resistant materials, wear-resistant coatings, experimental methods in tribology, surface analytical tools in tribology, scanning tunneling microscopy/atomic force microscopy, wear monitoring and wear prevention, and systems approach to tribology.

2) Fluid Mechanics. Prerequisites: ENGSC 3233. Basic principles and analytical methods underlying the theory of the motion of an inviscid and incompressible fluid.

Basic Fluid Dynamics. Prerequisite: 4233 or equivalent. The dynamics of viscous flow over external surfaces, inside channels, and in free shear layers. Basic governing equations. Theory of similarity. Approximation methods.


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.

Advanced Manufacturing Processes. 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.

Advanced Manufacturing Processes. 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.


Metal Cutting. Prerequisite: ENGSC 3313. Understanding the fundamental principles and practice (mechanics and material aspects) of machining and grinding of materials. Historical aspects, physics of metal cutting, mechanics of machining (orthogonal and oblique); shear stress and shear strain in machining, dynamometry; tool materials, tool wear, tool life, and machinability; vibrations in machining; thermal aspects of machining, cutting fluids; economics; surface finish accuracy and surface integrity, and grinding.

Mechanical Behavior of Materials. Prerequisite: ENGSC 3313 or equivalent. A unified approach to the behavior and response of engineering materials to applied loads. Mechanical and metallurgical fundamentals of deformation processes. Spatial scales of applied loads. Mechanical and metallurgical fundamentals of deformation processes.
Fluid Flow through Porous Media. Applications to unsteady and turbulent shear flows, transition, hydrodynamic stability. Component matching for turbomachinery, design of ramjet nozzles; solid and liquid rocket fuels; rocket components and controls; rocket energy requirements for orbital and interplanetary flight.

Research and Thesis. 1-15 credits. Maximum 30. Prerequisites: consent of the head or the graduate committee of the School and approval by the student's advisory committee. Independent research under the direct supervision of a member of the faculty. For students pursuing study beyond the level of the M.S. degree. No 10.

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 6000-series courses.


Non-traditional Machining. Prerequisite: consent of instructor. Rationale for non-traditional machining; various non-traditional machining processes including electro-discharge machining, electro-chemical machining, plasma arc-, microwave-, and laser assisted processing, waterjet (abrasive) cutting, ultrasonic machining, chemical machining, thermal assisted processing, and electron beam machining.

Surface Mechanics. Prerequisite: consent of instructor. Models and solutions basic to surface studies. Equations of continuum mechanics, thermal field solutions at sliding interfaces, elasticity, plasticity. Applications of solution techniques to surface, surface layer and interface phenomena.

Turbulent Fluid Dynamics. Prerequisite: 5233. Isotropic turbulence, turbulent wakes and jets, bound turbulent shear flows, transition, hydrodynamic stability and integral calculation methods for turbulent boundary layers.

Computational Fluid Dynamics. Prerequisite: 5233. Steam function-vorticity and pressure-velocity simulations of incompressible and compressible flows. Temperature and concentration solutions. Applications to various external and internal flow problems.

Modeling of Materials Processing. Prerequisites: 5553 or equivalent, and consent of instructor. Modeling of non-linear materials processing problems in metal forming, heat transfer, polymer processing, and forming of composites. Simulations to be done by various available software. Applicable finite element formulations. Tours of industry to provide additional practical processing background.

Motion Programming of Space Mechanisms. Prerequisite: MATH 3013. Advanced techniques for the analysis of two- and three-dimensional mechanisms.

Fluids. 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.

Fluid Power Control II. Prerequisite: 5453. Computer-aided analysis and design of fluid control systems; effect of system parameters on dynamic performance and stability. Distributed parameter analysis of signal and power transmission lines. Case studies of feedback control systems used in transportation, air- craft and missiles, machine tools and power plants.

Automatic Control II. Prerequisite: 5473 or ECEN 5143. Methods of formulation and solution of engineering control problems based on optimal dynamic behavior, advanced techniques for model identification, computational solution of dynamic optimization problems. Applications include mechanical, electrical, fluid and thermal systems.

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.

Advanced Solid Mechanics. General nonlinear problems of elasticity including thermal, dynamic and anisotropic effects; stress wave propagation; consideration of plasticity.

Nonlinear Systems Analysis II. Prerequisite: 5723 or ECEN 5723. Advanced topics of nonlinear systems theory selected from the current literature. Topics may include nonlinear stability theory, multi-input describing functions, nonlinear feedback control theory, the problem of Liou and Popov's criterion and multiparameter perturbation theory.

Advanced Thermodynamics II. Prerequisite: 5803. Development of statistical models to predict the behavior of ideal solids and gases. Fundamental treatment of probability, combinatorial analysis, statistical mechanics and quantum theory. Comparisons to show the superiority of statistical thermodynamics for predicting low-temperature behavior.

Convection Heat Transfer. Prerequisite: 5233 or equivalent. Advanced convective heat transfer in laminar and turbulent flows of external surfaces and inside channels. Heat transfer at high velocities, free convection boundary layers, and mass transfer.

Dynamics of Space Flights. Prerequisite: MATH 2613. Power requirements and dynamics for flight in space. Development of the laws of Kepler for orbiting bodies, transfer trajectories between orbits; launch, ascent and re-entry problems.

Mechanical Design Technology (MCDT)

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.

Descriptive Geometry. Lab 6. The graphical analysis of points, lines and curves with applications to mechanical drawings. For students pursuing study beyond the level of the M.S. degree.

Computer Systems for Technology. Lab 2. Introduction to microcomputers and mainframe computers. DOS operating system, flow charting, C Programming Language, spreadsheets and graphs. Emphasis on solving problems common to engineering technology.

Technical Illustration. Lab 6. Prerequisite: 2213 or consent of instructor. Pictorial drawing with applications to industrial production work.

Machine Drafting. Lab 6. Prerequisite: 1223, GENT 1153 or equivalent. Detail and assembly drawings of machines and products using drafting machines and computer-aided drafting techniques.
Mechanical Power Technology (MPT)

1103 Introduction to Prime Movers. Lab 2. Prime movers as they are used in the industrial world. Basic principles of design, construction, and operation of internal combustion engines, turbines, electric and hydraulic motors. Laboratory practice in inspection, measurement, and comparisons of characteristics.

2113 Power Transmission Systems. Lab 2. Prerequisite: GENT 1502. Power trains and transmission of power from prime movers to other parts of the machine. Basic principles of design, construction, and operation of internal combustion engines, turbines, electric and hydraulic motors. Laboratory practice in inspection, measurement, and comparisons of characteristics.

2133 Diesel Engines and Injection Systems. Lab 2. Prerequisite: 1105. Compression ignition engines and fuel injection systems. Laboratory practice in inspection, adjustment, timing and testing of fuel injection systems. Diesel and spark ignition compared.

2313 Fundamentals of Hydraulic Fluid Power. Lab 3. Prerequisites: 1003, MATH 1513. Basic fluid power concepts, fluid power systems. Laboratory practice in inspection, adjustment, timing and testing of fluid power systems. Diesel and spark ignition compared.

2413 Fundamentals of Pneumatic Fluid Power. Lab 3. Prerequisites: 2313, ECT 1003, MATH 1513. Basic pneumatic concepts, fluid power systems. Laboratory practice in inspection, adjustment, timing and testing of fluid power systems. Diesel and spark ignition compared.

3152 Structural Fabrication Design. Lab 3. Prerequisites: GENT 1153 and PHYS 1114. Application of standards for detailing and fabrication of structural materials.

3202 Advanced Mechanical Design Problems. 1-4 credits, maximum 4. Prerequisite: junior standing and consent of instructor. Special problems in mechanical design.

Mechanized Agriculture (MECAG)

1413 Introduction to Engineering in Agriculture. Prerequisite: MATH 1513 or concurrent enrollment. Application of the physical and engineering sciences to agricultural problems. Energy; energy conversion; thermal, electrical, mechanical and fluid systems; equipment calibration; environmental control of agricultural buildings and irrigation systems.


312* Electricity in Agriculture. Lab 2. Prerequisite: MATH 1513. Electricity applied to the farm and rural home including farmstead distribution and use and National Electric Code requirements. Laboratory activities include simple circuits, practical wiring, home wiring planning, electric motors and controls.
Buildings for Agriculture. Lab 2. Prerequisite: MATH 1213. Planning and selection of buildings and equipment for agriculture, including functional, environmental and structural requirements. Laboratory activities include material selection, materials testing, wind and solar effects and farmstead planning.

Engines and Power. Lab 4. Prerequisites: 1413, MATH 1513. Theory, operation, performance and diagnostics of internal combustion engines for mobile applications.

Metals and Welding. Lab 3. Prerequisite: 1413. Essential knowledge and theory necessary for understanding the principles of hot and cold metals and welding. Laboratory provides opportunity to apply and develop associated skills.

Surveying. Lab 4. Prerequisites: 1413, MATH 1513. Use of surveying equipment and common applications in agriculture.

Introduction to Soil and Water Conservation Engineering. Lab 3. Prerequisite: MATH 1513. Topographic and construction surveying. Planning, analysis and layout of soil and water conservation facilities including waterways, terraces, ponds, drainage systems, erosion control facilities and water wells.

Irrigation Control Practices. Lab 4. Prerequisites: MATH 1513 and concurrent enrollment in MECA 3311. Analysis, planning and management of soil and water resources.

Irrigation. Lab 4. Prerequisites: 1413, MATH 1513. Principles, planning and analysis of water use and application systems.

Field Machinery. Prerequisites: MATH 1513, PHYS 1214, and concurrent enrollment in MECAG 3311. Analysis, planning and management of soil and water resources.

Agricultural Electrification. Lab 4. Prerequisites: 1413, MATH 1513. A study of electrical theory and electrical applications in agricultural environments.

Principles of Food Engineering. Prerequisite: MATH 1513. For non-engineers. Application of the engineering approach to solving heat and mass transfer problems in food processing. An introduction to the basic concepts of the conservation laws, fluid flow, heat transfer, refrigeration, freezing, psychrometrics, and energy conservation.

Topics in Mechanized Agriculture. 1-4 credits, maximum 4. Investigations in specialized areas of mecha-nized agriculture.

Irrigation Principles. Prerequisite: MATH 1513. Sources, measurement and efficient use of irrigation water. Selection of pumping plants and power units. Layout and management of surface and sprinkler systems.

Machinery Calibration. Lab 4. Prerequisites: 1413, MATH 1513. Analysis of the metering function, calibration, and management of agricultural planting, fertilizing, and pesticide application equipment.

Advanced Methods in Agricultural Mechanics. 1-6 credits, maximum 6. Prerequisite: 4222. Developing agricultural mechanics programs for vocational agriculture and technical schools. Application of agricultural mechanics methods, practices and skills to advanced projects.

Farm Mechanics: Organization and Methods. Lab 2. Prerequisite: 4223. Required of agricultural education majors. Organizing the farm mechanics program and methods used in teaching farm mechanics. Shop skills and project work.


Technology and Environment. Lab 4. Prerequisites: 1413, MATH 1513. A study of the impact of technology on the environment.

Medical Technology (MTCL)

Clinical Microbiology. Lab 12. Prerequisites: concurrent internship in affiliated hospital, and all degree requirements for B.S. in medical technology except 30 hours MTCL. The theory and laboratory study of pathogenic bacteria, viruses, rickettsiae, fungi, and parasites. Includes isolation, identification, antimicrobial susceptibility testing, and medical significance.

Clinical Chemistry I. Lab 9. Prerequisites: concurrent internship in affiliated hospital, and all degree requirements for B.S. in medical technology except 30 hours MTCL. The theory and laboratory methodology of analytical biochemistry, clinical microscopy, routine and special procedures, and medical significance.

Clinical Hematology. Lab 12. Prerequisites: concurrent internship in affiliated hospital, and all degree requirements for B.S. in medical technology except 30 hours MTCL. Hematologic disorders and procedures used in serological determinations; immunohematology, fundamentals of antigen-antibody reactions, blood groups and types, compatibility testing, blood components, and the lab methods used as they relate to the medical significance of immunity and infectious diseases.

Clinical Immunology. Lab 12. Prerequisites: concurrent internship in affiliated hospital, and all degree requirements for B.S. in medical technology except 30 hours MTCL. Immunologic responses and procedures used in serological determinations; immunohematology, fundamentals of antigen-antibody reactions, blood groups and types, compatibility testing, blood components, and the lab methods used as they relate to the medical significance of immunity and infectious diseases.

Clinical Mycology. Lab 9. Prerequisites: concurrent internship in affiliated hospital, and all degree requirements for B.S. in medical technology except 30 hours MTCL. Systematized study of diseases caused by fungi in the environment and in humans. Includes isolation, identification, and susceptibility testing, and medical significance.

Pathogenic Microbiology. Lab 3. Prerequisite: 2124. Examination of pathogenic bacteria as they relate to humans, other animals, plants and insects. Same course as PLP 3134.

Medical Mycology. Lab 4. Prerequisite: 2124. Examination of fungi as animal pathogens; laboratory techniques used in the identification of human and animal pathogens, and differentiation from common contaminants.

Medical Parasitology. Lab 2. Prerequisite: introduction to biological organization. Human and parasitological problems including endemic, exotic and zoonotic organisms. Life cycles, diagnosis and control procedures. Principles applicable to all areas of zoology, medicine, veterinary medicine and medical technology.

Food Microbiology. Lab 4. Prerequisites: 2124 and organic chemistry. Relationship of microorganisms to food manufacture and preservation, to food spoilage and microbial food poisoning and to various aspects of primary food production.

Immunology. Lab 3. Prerequisite: 2124. Vertebrate host's ability to defend itself against foreign intrusion. Chemistry and biology of the acquired immune response.

Industrial Microbiology. Lab 4. Prerequisite: 3124. Production of solvents, vitamins, amino acids, antibiotics, flavored products, etc. Biodegradation of industrial wastes, pesticides, and herbicides. Microbial aspects of energy production, including petroleum microbiology.

Honors in Microbiology. 1-4 credits, maximum 10. Prerequisite: permission of departmental honors committee. Supervised study and research in microbiology.

Microbiology of Soil. Lab 6. Prerequisite: 2124. Microorganisms of the soil and their relationship to soil fertility.

Virolology. Lab 4. Prerequisites: BISC 3014 or one course in biochemistry and one upper-division microbiology course. Theoretical and practice of virus-host interactions including structure-function of animal, plant, and bacterial viruses. Same course as PLP 4124.

Current Topics in Microbiology. Lab 2. Prerequisite: permission of instructor. Subject matter may vary from year to year as new knowledge and techniques develop. Inquire as to current subject offering.

Microbial Genetics Laboratory. Lab 4. Prerequisite: 3133 or concurrent enrollment. Comprehensive laboratory course in research techniques involving classical and modern methods of gene transfer and fusions.


Special Problems. 2-4 credits, maximum 4. Prerequisite: consent of instructor. Minor investigations in the field of microbiology.

Microbiology 267
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 first aid.

1212 Leadership. Leadership theories, leader and follower roles, principles and traits of leadership, communication, problem solving, motivation, and 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 credits) 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.

2223 Leadership and Military Skills I. Lab 2. Leadership and individual military skill development. Instruction in land navigation; marksmanship; first aid; 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.

2313 Leadership and Military Skills II. Lab 2. Prerequisite: 2223. 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: one course in biochemistry, consent of instructor. Water relations, transport, overflow metabolism and other aspects of metabolism and biosynthesis in the fungi in relation to fungal problems of growth and differentiation, which are unique to those normally encountered in other organisms. Same as PLP 5243.

5900 Special Problems. (1-4 credits, maximum 10) Prerequisite: permission of instructor. Investigations in the field of microbiology.

6000 Thesis. (1-15 credits, maximum 45) Prerequisite: permission of major advisor. Research in microbiology for the Ph.D. degree.


6120 Recent Advances in Microbiology. (1-3 credits, maximum 6) Prerequisite: one graduate course in biochemistry. Discussion and evaluation of recent scientific contributions in terms of the living organism.

6143 Microbial Physiology. Lab 3. Prerequisite: one graduate course in biochemistry. The chemistry and integrated functioning of microbial structures and molecules.

6253 Microbial Evolution. Prerequisites: 2124, BIOCH 3653, or BISC 3024. The mechanisms and results of microbial evolution in nature and in the laboratory, with emphasis on microbes as model evolutionary systems, molecular evolution, classification and phylogeny, and discussion of protobiology and the probable fate of engineered microbes.

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.

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)

1130 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, Classical, Romantic, and Contemporary periods, with emphasis on style analysis.
1533 Theory of Music I. Prerequisite: Successful completion of Music Theory Placement Examination. Development of skills in sightreading and aural perception. Taken concurrently with MUSIC 1533.
1543 Theory of Music 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 1531. Taken concurrently with 1543.
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: 2021 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 String 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.
2280 Major Piano. 1-6 credits, maximum 12. Prerequisite: 1260.
2290 Major Violin. 1-6 credits, maximum 12. Prerequisite: 1280.
2300 Major Cello. 1-6 credits, maximum 12. Prerequisite: 1290.
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.
2400 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 Sightsinging and Eartraining I. Prerequisites: 2672 or successful completion of Music Theory Placement Examination. Development of skills in sightreading and aural perception. Taken concurrently with MUSIC 1533.
2553 Sightsinging and Eartraining II. Prerequisites: 1531 and 1533. A continuation of 1531. Taken concurrently with 1543.
2553 Sightsinging and Eartraining III. Prerequisites: 1541 and 1543. Further development of skills in sightreading and aural perception. Taken concurrently with 2553.
2553 Theory of Music III. Lab 1/2. Prerequisites: 1541 and 1543. Choral and instrumental writing correlated with keyboard skills. Taken concurrently with MUSIC 1533.
2553 Theory of Music IV. Lab 1/2. Prerequisites: 2551 and 2553. A continuation of 2551. Taken concurrently with 2553.
2563 Theory of Music V. Lab 1/2. Prerequisites: 2551 and 2553. A continuation of 2553. Taken concurrently with 2561.
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.
2590 Chamber Ensembles. 1 credit, maximum 8. Lab 2. Combination of voices, keyboard, and orchestral instruments for performing chamber music, music theater and duo piano repertoire.
2610 University Bands I. 1-2 credits, maximum 6. Lab 3-5.
2620 Symphony Orchestra I. 1-2 credits, maximum 6.
2630 University Choral Ensembles I. 1-4 credits, maximum 6.
2682 Music Education. Prerequisite: 2672. For certificate/licensure in elementary 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.
3290 Major Violin. 1-4 credits, maximum 8. Prerequisites: upper-division examination, 2280.
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 Guitar. 1-6 credits, maximum 12. Prerequisite: completion of basic application. Enrichment in applied music field(s) 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.
3723 Teaching Choral Music. Prerequisite: 3712. Reperatoire, 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.
3763 (H)History of Music from 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 the Western civilization from antiquity through the Baroque period.
3765 (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 the pre-classical period to the 20th century.
3772 Counterpoint. Prerequisites: 2563 and satisfactory upper-division examination. Analysis and application of contrapuntal techniques of the 18th century.
3773 Survey of Jazz Styles. Elements and stylistic features of jazz, its evolution and its impact on society.
3783 Form and Analysis. Prerequisites: 2563 and satisfactory upper-division examination. Analysis of standard repertoire with emphasis on form and structural harmonic analysis.
3832 Elementary Music Methods K-6. Prerequisite: 3731. Current elementary music trends, techniques, and materials. For those who will be involved in teaching elementary music grades K-6.
3842 Marching Band Methods. Prerequisite: 3731. Organizational responsibilities and charting for public school marching bands.
3901 Junior Recital. Prerequisites: junior standing and consent of major applied music teacher.
4021 Piano Class Lessons. Prerequisite: senior music major status.
4031 Solo Literature for the Adolescent Singer. Examination of solo literature and pedagogical approaches suitable for use at the high school level.
4100 Music Industry Internship. 1-6 credits. Prerequisite: upper-division examination, 2370. Period to the 20th century. Site: 3360 and successful completion of recital attendance requirements.
4250 Major Organ. 1-6 credits, maximum 12. Prerequisites: 4250 and successful completion of recital attendance requirements.
4260 Major Piano. 1-6 credits, maximum 12. Prerequisite: 3260 and successful completion of recital attendance requirements.
4270 Major Voice. 1-6 credits, maximum 12. Prerequisite: 3270 and successful completion of recital attendance requirements.
4290 Major Violin. 1-6 credits, maximum 12. Prerequisite: 3290 and successful completion of recital attendance requirements.
4300 Major Cello. 1-6 credits, maximum 12. Prerequisite: 3300 and successful completion of recital attendance requirements.
4310 Major Double Bass. 1-6 credits, maximum 12. Prerequisite: 3310 and successful completion of recital attendance requirements.
Natural Science (NATSC)

1113 (N)Basic Human Nutrition. Functions of the nutrients in human life processes. Nutrient relationship to health as a basis for food choices. Open to all University students.

211 Professional Careers in Dietetics. Prerequisite: 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 organization 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.

4340 Food, Nutrition and Institution Administration Preprofessional Experience. 1-3 hours, maximum 3. Supervision and work experience in one or more of the following: college and university food service, health care facilities, and food processing plants.

5432 (N)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.

5553 Purchasing 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.

5652 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.

3851 Dietetics as a Profession. Identification of changing roles, appropriate responsibilities and professional expectations of dietetic practitioners by practice level and substantive category. Professional organizations, routes to membership in the American Dietetic Association; 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. Development of an individual research project.

4223 Nutrition In the Life Cycle. Prerequisites: 1113 or equivalent. Nutritional needs and dietary concerns of individuals from conception through old age.

4323 Human Nutrition and Metabolism. Prerequisites: 1113 (or equivalent), organic chemistry, physiology. Digestion, absorption and metabolism of nutrients; functions and health implications in the human organism.

4333 Food, Beverage and Labor Cost Controls. Prerequisites: ACCTG 2203, junior standing or consent of instructor. Food, beverage and labor cost 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, purchasing, 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 methods, techniques, resources and evaluation for nutrition education. Experimental component required.

4575* Institution Organization and Management. 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 4575.

4641* Seminar in Food and Nutrition. Prerequisite: upper-division standing. Reading and reporting on various topics in food and nutrition. Emphasis on interpreting 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 institutional 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. Prerequisites: 4852; concurrent enrollment in 4853. Applications of clinical dietetics in the health care and community setting.

4853 Nutrition in Disease. Prerequisites: 4852; concurrent enrollment in 4852; one course in biochemistry. Physiological and metabolic bases for dietary modifications in disease states. Interpretation of laboratory data as it applies to nutritional care.

5000* Research in Food, Nutrition and Institution Administration. 1-8 credits, maximum 6. Prerequisite: approval of adviser, Individual research and thesis that will fulfill the requirements for the master's degree.

5012 Public Policy Development In Food, Nutrition and Related Programs. Rationale underlying selected government 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 food.

5230* New Findings In 1-3 credits, maximum 6. Prerequisite: 1113. Current emphasis in nutrition, with implications for nutrition research, education, and public service.

5233* Quantity Food Development. Lab 5. Prerequisite: 4365 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.

5363 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.

5372* Childhood Nutrition. Lab 6. Prerequisite: 1113 or equivalent. Nutritional needs of children, preschool 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: A biochemistry course and an upper-level nutrition course. Application to the human being of metabolic processes which involve essential dietary components.
5563* 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. Physiological 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.

Food Service Systems Manpower Management. Lab 3. Principles and practices of management in the procurement, development, maintenance and utilization of an efficient and satisfied working force 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 or nutrition. Experimental design 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.
5970* Problems in Food, Nutrition or Institution Administration 1-4 credits, maximum 9. Newer problems and methods in food, nutrition or institution administration.
5980* Food, Nutrition and Institution Administration Seminar. 1 credit, maximum 2. Prerequisite: for M.S. students. Individual reports and group discussion of current issues in food, nutrition and institution administration.
6000* Doctoral Thesis. 1-12 credits, maximum 30. 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 instruction. In depth study of vitamins and minerals and their interrelationships in metabolism.
6233* Current Issues in Food Service Administration. Prerequisites: 5343, 5593 or consent of instructor. Current issues in food service administration with emphasis on quality food 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 toward 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.

4470 Teaching Practicum in Occupational Education. 1-12 credits, maximum 12. Prerequisites: MKTED 3253, 4101 or concurrent enrollment in MKTED 3453, and full admission to Teacher Education. Organized teaching experiences under the guidance and direction of a local school cooperating teacher and university teacher educator. Participant assigned to a cooperating teacher with responsibility for planning, implementing and evaluating the classroom, laboratory or shop. Same course as MKTED 4470. Graded on a pass-fail basis.
5000* Thesis or Report. 2-10 credits, maximum 10. Prerequisite: consent of major adviser. Students studying for a master's degree may enroll in this course for a total of two credit hours if they write a report or six hours if they write a thesis. Students working on a specialist's degree may earn a maximum of 10 hours credit.
5101* Seminar. 1-3 credits, maximum 6. Graduate student seminars focusing on current and critical issues and common problems relevant to occupational and adult education.
5113* Principles of Occupational and Adult Education. Underlying principles and evolving concepts in occupational and adult education with critical analysis of educational programs and service areas and the resulting implications for leadership personnel at all levels of program responsibility.
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.
5153* Curriculum Planning in Occupational and Adult Education. 3 credits. 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. Analysis 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 structures 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 impact upon adult and continuing education programs.
5233* Needs Analysis. Techniques of conducting organizational analyses of human performance problems, including surveys, interviews, record analysis, group interaction, and task analysis.
5243* Advanced Project in Needs Analysis. Prerequisite: 5223. The conduct of an analysis of human performance problems in an organizational, agency, institutional or community setting, including need or problem identification, investigation, clarification and resolution, and the development of a formal report and a presentation to management.
Office Management (OFFMG)

Petroleum Technology (PET)

Philosophy (PHILO)

Petroleum Reservoir Engineering. Lab 3. Prerequisites: 3323, 4224, and MECTD 3323. Remedial and worker operations on producing oil and gas wells. Analysis and design of artificial lift techniques. Well testing and problem well evaluation.

Philosophy (PHILO)

6353* Critical Issues in Human Resource Development. Prerequisite: 5222 or 5533. Issues of concern to training directors and other human resource development (HRD) practitioners are researched, including managing HRD, consulting, organization, development, productivity, and managing change.
Selected philosophical movements. Subjectivity, phenomenological de-
the development of existentialism and related intellec-
tual codes of ethics.

Recent American Philosophy. Analytic grounding in basic theories of ethics.

Ethical issues in business, such as employee-employer duties and loyali-
ties, advertising uses, preferential treatment practices. Analytic grounding in basic theories of ethics.

Recent American Philosophy. Dominant trends in American philosophy during the last 100 years, with emphasis on pragmatism.

Engineering Ethics. Philosophical analysis of moral issues in engineering practice, such as whistleblowing, 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. Abortion, euthanasia, genetic engineering, and human exper-
imentation. Same course as REL 3833.

Existentialism. Selected writings and themes in the development of existentialism and related intellec-
tual movements. Subjectivity, phenomenological de-
scription, hermeneutics, freedom and value; and such writers as Kierkegaard, Nietzsche, Heidegger, Sartre, Marcel and Buber.

Contemporary Issues in Philosophy. Selected current controversies and recent trends in philosoph-

Perspectives on Death and Dying. Issues that arise as individuals confront the fact of mortality. Dying patients, the ethical issues of euthanasia and sui-
cide, the process of grief, death in literature and the arts, and philosophical and religious views on immor-
tality. Same course as REL 4013.

Philosophy of Art and Literature. Nature of aesthetic objects and experiences; form, meaning and value in the arts; the function of art in society; criteria of criticism of the arts.

Principles of Symbolic Logic. Symbolic analysis and calculus of propositions. Applications in various fields.

Philosophy of Mind. Problems in philosophical psychology. Mind and body, freedom and determin-
ism, personal identity and survival, self-knowledge, analysis of mental concepts.

Philosophy in Literature. Selected literary works examined for philosophical ideas and themes. Attention to the interrelation of form and content. The-
matic approach.

Philosophy of Science. Philosophical issues related to science and its role in society. Topics in-
clude science and common sense, laws and theories, causality, nature of scientific progress.

Philosophy of Biology. Selected philosophical topics, such as Darwinism and other theories of evolu-
tion, physical reductionism, and issues of genetic en-
geineering.

Special Studies In Philosophy. 1-3 credits, maxi-
mum 10. Selected philosophical topics or works.

Senior Honors Thesis. Prerequisites: departmental invitation, senior standing, Honors program participa-
tion. A guided reading and research program ending with an honors thesis under the direction of a faculty member, with second faculty reader and oral exami-
nation. Required for graduation with departmental hon-
orships in philosophy.

Thesis In Philosophy. 1-6 credits, maximum 6. Su-
pervised individual work on a thesis for a master's degree.

Seminar on a Major Philosopher. 3 credits, maxi-
mum 9. Prerequisite: three courses in philosophy. The writings of a major philosopher and related material.

Seminar on a Field of Philosophy. 3 credits, maxi-
mum 9. Prerequisite: three courses in philosophy. Selected topics in one field of philosophy.


Philosophical Issues in Education. 2-3 credits, maxi-
mum 3. Contemporary issues in educational theory and practice. The relation of education to political thought, religion, public law and culture.

Contemporary Philosophies of Education. Analy-
sis of contemporary educational philosophies, with attention to recommended aims, curricula and meth-
ods.

Research Problems in Philosophy. 1-3 credits, maxi-
mum 10. Prerequisite: consent of instructor and de-
partment head. Individual or group research on spec-
cific philosophical problems.

Introduction to Physical Education. The nature, scope and significance of physical education. Histori-
cal and philosophical foundations, major sub-disci-
plines and their interrelationships, and career oppor-
tunities.

Movement Activities I. Theory and practice of se-
lected sport and movement activities such as soccer, golf, volleyball, and aquatics; analysis and practice of respective critical skills in each area; basic rules and strategies.

Movement Activities II. Theory and practice of se-
lected sport and movement activities such as basketball, stunts and tumbling, softball, and archery; analy-

Movement Activities III. Theory and practice of se-
lected sport and movement activities such as track and field; gymnastics apparatus; weight training, and social dance; analysis and practice of critical skills in each area; basic rules and strategies.

Movement Activities IV. Theory and practice of se-
lected sport and movement activities such as badminton, raquetball, folk and square dance, tennis, and rhythmic aerobics; analysis and practice of critical skills in each area; basic rules and strategies.

Sports Officiating. Lab. 1. Current rules and tech-
niques. Students who perform satisfactorily receive official ratings.

Psychomotor Development. Lab. 2. Prerequisite: 1753 or concurrent enrollment. Fundamental aspects of motor development for infants, children, youth and adults.

Physiology of Exercise. Lab. 2. Prerequisite: ZOOL 2304. Physiological effects of exercise.


Kinetics and Biomechanics. Prerequisites: HLTH 2653; MATH 1513 or consent of instructor. A system-
atic approach to analysis of human movement through anatomical, mechanical, and kinesiological concepts. Quantitative and qualitative analysis related to kine-
matic and kinetic principles.

Methods In Teaching Elementary Physical Educa-
tion. Prerequisites: 1753, 2712. Theory and practical experience of physical education in the elementary school. Teaching styles and activities needed to meet the needs of children from kindergarten through grade five.

Methods In Teaching Secondary Physical Educa-
tion. Lab. 2. Prerequisites: 1812, 1822, 1832, 1842, 3663, and 3753; or consent of department head. In-
structional styles, implementation of behavioral goals and objectives through unit and lesson preparation, teaching methods, and classroom management.

Coaching Wrestling. Prerequisite: junior standing. Methods and techniques of coaching wrestling.

Coaching Track and Field. Prerequisite: junior stand-
ing. Methods and techniques of coaching track and field.

Coaching Baseball. Prerequisite: junior standing. Coaching baseball with emphasis on skill develop-
ment, organization and development of offenses and defensive play, safety mechanics, budgeting, pre-
and post-season training, organization and adminis-
tration of competition.

Measurement and Evaluation in Health and Physi-
cal Education. Evaluation techniques commonly used by physical educators and health professionals to measure knowledge, attitudes, skill proficiency, and physical fitness.

Administration and Program Design In Physical Educa-
tion and Athletics. Prerequisites: 3753 and 3773 or concurrent enrollment. Design and manage-
ment of physical education (K-12) and athletic pro-
grams.

Adapted Physical Education. Lab. 2. Prerequisites: 3863, 3753; or consent of department head. Charac-
teristics of various handicap conditions; adapting the physical education program to meet the needs of atypical students.

Organization and Administration of Intrscholas-
tic Athletics, Organization and management of com-
petitive athletics, including public relations, staff func-
tions, contracts, legal considerations, facilities and equipment.

Coaching Football. Prerequisite: junior standing. Meth-
ods and techniques of coaching football.

Coaching Basketball. Prerequisite: junior standing. Methods and techniques of coaching basketball.
Coaching Gymnastics. Lab 2. Prerequisite: junior standing. Methods and techniques of coaching gymnastics.

Adapted Aquatics. Prerequisite: LEIS 2512 or consent of instructor. Mechanical principles, skill analysis, evaluation techniques, lesson and unit planning, and practical experience in teaching swimming to persons with mental and/or physical impairments.

Physics (PHYSIC)

3621 Laboratory II. Lab 3. Laboratory experiments on atomic physics, electron interference, gamma ray spectroscopy, the photoelectric effect, and nuclear resonance.

3713 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.

4113 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: 8 hours of physics and 4 hours of chemistry. For nonphysics majors. Fundamentals of nuclear physics with applications to chemistry, engineering and biology.

4263 (N)Introduction to Solid State Physics. Structure, specific heat, dielectric properties, lattice vibrations, free electron theory, band structure and superconductivity of solids.

4313 Biophysics. Prerequisites: 2124 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: 3013 and 3713. Atomic and X-ray spectra; one-dimensional Schroedinger equation; nuclear structure; introduction to statistical mechanics and elementary quantum statistics.

4423 Mechanics II. Prerequisite: 3013. Coupled oscillators, propagation of waves in discrete and continuous media, mechanics of discrete and continuous media and acoustics.

4513 Introductory Quantum Mechanics. Prerequisite: 4423 or equivalent. Uncertainty principle, setting up Schroedinger equation (time dependent as well as time independent) and solving it for linear oscillator, hydrogen atom, periodic and other potentials.

4613 Advanced Electronics. Lab 3. Prerequisites: 2413 and 2520. Transmission lines, servomechanisms, operational amplifiers, solid state switching devices, measurement and control circuits.

4663 Radioactivity and Nuclear Physics. Prerequisite: 3214. Natural and artificial radioactivity, decay laws; absorption, detection and measurement of radiation; nuclear transformations.

4712 Laboratory III. Lab 3. Laboratory experiments on electrical measurements and microcomputer application to analysis and control of measurements. Advanced individual research projects.

4812 Laboratory IV. Lab 3. Continuation of advanced projects from 4712.

4813 Electromagnetic Radiation. Prerequisites: 3213, 3513, 4113. Electromagnetic wave theory, reflection and refraction of electromagnetic waves; resonant cavities, wave guides, fiber propagation of electromagnetic waves; radiation sources; relativistic description of electromagnetic fields.

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, with second faculty reader and oral examination. Required for graduation with departmental honors in physics.

5000 Master’s Thesis Research. 1-9 credits, maximum 9. Prerequisite: consent of major professor.

5110 Seminar. 1-5 credits. maximum 20. Prerequisite: graduate standing in physics. Special topics in physics.


5133 Theory of Spectra. Line spectra, hyperfine structure, Lamb shift, band spectra, NMR spectra and ESR spectra.


5213 Statistical Mechanics. Prerequisites: 5113 and 5613 or consent of instructor. Classical and quantum mechanical distribution functions for independent particles, interacting classical and quantum systems, superfluidity, phase transitions and critical phenomena, approximation methods.

5263 Nuclear Physics. Prerequisites: 5453 and 5613. Nuclear forces, structure of nuclei and nuclear models.

5313 Electromagnetic Theory. Prerequisite: 5453. Electric and magnetic fields in free space and in matter. Boundary value problems, Green’s functions, stress tensors, multipole expansions, thermodynamics; electromagnetic waves.

5350 Special Problems. 1-3 credits, maximum 3. Prerequisite: graduate standing in physics. Special problems of experimental or theoretical nature. Largely individual work with written report required.

5355 Membrane Biophysics and Bioenergetics. Prerequisites: 1214 and BISC 3014 or BIOCH 4113 or CHEM 3354 or PHYSIC 3313. 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 delective techniques. Application of these tools to significant research problems. Same course as ZOOL 5223.

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: 3513. Introduction to the various methods and techniques used in theoretical physics.

5513 Selected Topics in Acoustics. Prerequisites: 4423, 5453. Radiation, transmission and absorption of acoustic waves, acoustic impedance; high-intensity effects; ultrasonics.
Physiological Science (PHSI)

5613* Quantum Mechanics I. Prerequisite: 5453. Postulate of quantum mechanics. Operators, commutation relations, eigenfunctions. Schroedinger, Heisenberg and interaction formalisms, angular momentum and central field problems; nondegenerate perturbation theory.

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, dielectric 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 application 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. Intermediol, forces, interaction of radiation with matter in bulk form, dielectric properties of matter, polymer physics and quantum theory of biopolymers.

6000* Doctoral Dissertation Research. 1-15 credits, maximum 60. Prerequisites: admission to candidacy and permission of major professor.

6010* Advanced Graduate Seminar. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Special topics of an advanced nature in physics.

6113* Advanced Theory of Solids. Prerequisite: 5663. Many-body techniques, transport processes, band theoretical techniques, superconductivity, dynamics of electrons in a magnetic field, and alloys.


6313* Quantum Mechanics II. Prerequisite: 5613. Scattering theory, many-particle quantum mechanics and application to atomic and molecular systems; degenerate and time-dependent perturbation theory.

6413* Modern Optics. Prerequisites: 5313, 5163, 5613. Non-linear optics, higher-order susceptibilities; four-wave mixing; quantum optics and photon statistics, Maxwell-Bloch equations.

6513* Advanced Topics in Solid State Physics. Prerequisite: 5663 or equivalent. Interaction of radiation and matter, neutron scattering, phase transitions, magnetic resonance and cooperative phenomena.

6613* Advanced Nuclear and Particle Physics. Prerequisites: 5263, 6313. Nuclear and elementary particle interactions, resonances, and models; relativistic quantum mechanics and quantum field theory.

6713* Classical Theory of Fields. Prerequisite: 5213. Radiation theory, waveguides, scattering and dispersion relations; relativity.

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 ANSI 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, radiographic 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.

5125* 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 4204; BISC 3014 or BIOPH 3653. Comparison of circulation, digestion, excretion, and sensory systems of vertebrates and invertebrates. Same course as ZOOL 5213.

5224* Integrative Vertebrate Cell Structure and Function. Prerequisites: BIOPH 3653; ZOOL 3204 or ZOOL 4215; consent of instructor. The relationship between structure and function underlying essential processes occurring within individual cells and in interactions among cells. Emphasis on integration of knowledge of morphology, metabolism and physiology to facilitate a comprehensive understanding of the function of vertebrate organisms at the cellular level.

5225* Veterinary Gross and Developmental Anatomy II. Lab 8. Comparative and functional gross anatomy and developmental anatomy of domestic animals. Emphasis on the integration of developmental gross, radiographic and applied aspects of veterinary anatomy as they relate to a topographical appreciation of the living individual. Integrated lecture-dissection laboratory format.

5229* Veterinary Physiology II. Lab 2. Prerequisite: 5134 or consent of instructor. Veterinary medical physiology of the renal, digestive, and neurological systems of domestic animals. Emphasis on integration of knowledge of morphology, metabolism and physiology to facilitate a comprehensive understanding of the function and treatment of diseases of animals.

5254* Veterinary Metabolism and Nutrition. Lab 2. Prerequisite: first-year standing in the College of Veterinary Medicine or consent of instructor. Functional metabolism in domestic animals. Metabolic disorders using certain diseases as models. Veterinary nutrition and the application of these principles in the prevention and treatment of diseases of animals.

5333* Veterinary Endocrinology and Reproduction. Two 2-hour lab and one 4-hour lab. Prerequisite: second-year standing in the College of Veterinary Medicine. Functions of the endocrine and reproductive systems of domestic animals.

5353* Veterinary Pharmacology I. Four 4-hour labs. Prerequisite: 5235. Introduces the principles of absorption, distribution, metabolism and elimination of therapeutics and drugs, and the mode of action, contraindications and toxicities of antimicrobial agents and general anesthetics.
5043* Plant Pathology. Lab 4. Prerequisite: BISC 1403. Principles of plant pathology: disease development, spread and control of fungal, bacterial, viral, nematode and environmental diseases. For advanced, special, and non-plant pathology graduate students.


5243* Fungal Metabolism. Prerequisites: one course in biochemistry, consent of instructor. Water relations, transport, overflow metabolism and other aspects of carbon and nitrogen synthesis in the fungi in relation to fungal problems of growth and differentiation, which are unlike those normally encountered in other organisms. Same as MICRO 5243.

5304* Phytopathobiology. Lab 4. Prerequisite: 3344. Bacteria as plant pathogens, with examination of the taxonomy, genetics, ecology, physiology, host-parasite interaction and control of phytopathogens.

5413* Plant Disease Epidemiology. Lab 3. Prerequisites: 3344 or 5043. Introduction to methodology and technical equipment used in epidemiological research and application of epidemiological principles in plant disease control.

5560* Problems in Plant Pathology. 1-5 credits, maximum 10. Prerequisite: consent of instructor.


5734* Physiology of Pathogen-Host Interactions. Lab 4. Prerequisites: 3344 and BIOC 3653. Physiology of the interactions between plants and pathogens. Mechanisms by which pathogens infect and by which plants resist infection.

5850* Plant Pathology Seminar. 1 credit. maximum per semester, 2 credits for M.S. and 4 credits for Ph.D. required.

5860* Colloquium. 2 credits, maximum 2. Prerequisite: 3344. Concepts and principles of plant pathology through discussions of pertinent literature.

6000* Research. 1-12 credits, maximum 36. Research for the Ph.D. degree.

6102* Genetics of Plant Disease. Lab 4. Prerequisite: 3344 or equivalent and a course in general genetics. Genetics of host plants, plant pathogens and the interaction between the two. Flor's gene-for-gene hypothesis and its implications in breeding for disease resistance.

6202* Genetics of Fungi. Lab 4. Prerequisite: 5104 or BOT 5104 or equivalent and a general course in genetics. Mating systems, parasexuality, mutagenesis, and gene mapping of fungi. Involvement of these topics in plant pathology.

6303* Soilborne Diseases of Plants. Lab 3. Prerequisite: 3344. Soilborne diseases, their reception and importance, the pathogens involved, rhizoplane and rhizosphere influences, inoculum potential, specialization of pathogens, suppressive soil effects and disease management. Lecture and discussion sessions will emphasize in-depth understanding of problems and complexities associated with studies of soilborne pathogens.


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Political Science (POLSC)

1010 Studies in American Government. 1-2 credits, maximum 2. Special study in American government to allow transfer students to fulfill general education requirements as established by Regents' policy.

1013 American Government. Organization, processes and functions of the national government of the United States. Satisfies, with HIST 1103 or 1483 or 1493, the State Regents requirement of six credit hours of American history and American government before graduation.


2033 Introduction to Public Administration. Public administration, including administration, administrative organization, decision-making, governmental public relations, and administrative responsibilities.

2043 Introduction to International Politics. Structure and function of the international system focusing on the interrelationships among states, international bodies and critical issues.

2113 (S)Comparative Politics. A comparative study of the political processes and institutions of contemporary societies. Introduction to the concepts and methods of comparative politics.

2993 Honors Tutorial in Political Science. Prerequisites: 1013, honors standing, and invitation by head of department. For the special needs of the sophomore-levelhonors student majoring in political science who wishes to study individualized topics at an accelerated pace in a tutorial format. After mastering basic principles in an area of interest the student will conduct independent research under close faculty supervision and prepare a report or reports.

3003 (I,S)The Soviet Union: History, Society and Culture. A comprehensive view of the Soviet Union, stressing those issues in the political, economic, technological, geographical and cultural spheres which are most relevant to the current situation. Accessible to beginning undergraduates. Same course as HIST 3003 and RUSS 3003.

3013* (S)International Relations. Political dynamics and machinery of international relations with emphasis on nationalism, imperialism, self-help, collective security and foreign policy formulation and execution.

3033* International Law. The nature and scope of public international law, with emphasis on problems related to the recognition of states and governments, jurisdiction over nationals and aliens, and state responsibility in cases of expropriation and revolutionary damage.


3133 (l)Politics of Anglo-American Democracies. Political processes and governmental institutions of the United Kingdom, Ireland, Canada, Australia, and New Zealand with comparisons to the United States.

3143 Politics of Western Europe. Political processes and governmental institutions of continental Western European states, with emphasis on France, West Germany, and Italy.
278 Political Science

Political Analysis. Prerequisite: 60 credit hours, or 45 hours with GPA of 3.25, including 2113. Logic and techniques of modern political analysis, including the logic of political analysis, the collection and analysis of political information, and data processing and computer applications to the study of politics.

American Foreign Policy. Major problems and policies of American foreign relations since World War II and description of foreign formulation and aid administration.

World Politics. Foreign policies of major powers. Areas of tension and sources of international conflict.

Problems of Government, Politics and Public Policy. 1-6 credits, maximum 6. Prerequisite: 60 credit hours, or 45 hours with GPA of 3.25, including 1013. Special problem areas of government, politics and public policy concentrating on topics not covered in other governmental course offerings.

International Institutions. The organization, procedures, functions and role of international institutions, with emphasis on the United Nations and related agencies.

Jurisprudence and Criminal Justice. An introduction to theoretical issues of public law and public law enforcement, with emphasis upon criminal justice.

Administrative Law. Legal powers, limits, and procedures of administrative agencies with emphasis on federal and state administrative procedures.

Environmental Law and Administration. Statutory law, case law, and administrative principles relating to regulation of the environment including environmental impact statements, pollution, public lands, and preservation law.

Urban Politics. Problems of governing American metropolitan areas.

Government Budgeting. The politics, planning and administration of government budgets.

Public Personnel Administration. Problems, processes and procedures of public personnel administration.

Comparative Public Administration. The nature and context of comparative administration. Theories concerning the political, social and cultural settings of administration and the study of specific administrative systems.

American Politics. Significant developments and issues in American politics, including American political behavior and political leadership.

American Political Thought. A survey of the major developments in American political thought from the Colonial period to the present, followed by a topical analysis of important recent theoretical developments in political science.

Natural Resources and Environmental Policy. Current issues in the law, politics and administration of energy, land, water, mineral and other natural resources policy with particular emphasis on relations to environmental policies and laws.

Contemporary Political Thought. An analysis of 19th and 20th century political ideas, with emphasis on their influence as political behaviors and ideologies along with their roles in social development, political thought, pragmatism, and resurgent religious faiths.

Empirical Political Theory. Empirical theories about political behavior with emphasis on post-behavioral developments including social choice and game theory.


American Constitutional Law: Equal Protection of the Laws. Prerequisites: 2023 or 3983 recommended. Development of principles of constitutional law by the Supreme Court concerning individual and group rights with particular emphasis on equal protection of the laws concepts in matters of race, gender, wealth, citizenship, legislative reapportionment and voting rights, government employment and affirmative action programs. Legal research techniques.

American Constitutional Law: The Division of Governmental Powers. Prerequisite: 2023 or 3983 recommended. Development of principles of constitutional law by the Supreme Court concerning federalism and separation of powers with particular emphasis on political and doctrinal developments surrounding judicial review, regulation of commerce, taxing and spending and presidential power. Introduction to legal research methods.

American Constitutional Law: Due Process of Law. Prerequisites: 2023 or 3983 recommended. Development of principles of constitutional law by the Supreme Court concerning 5th and 14th Amendment due process concepts, with particular emphasis on suspect's rights, search and seizure, free speech and press, religious liberty, property rights and procedural requirements at the national and state level. Legal research techniques.

Political Science 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, with second faculty reader and oral examination. Required for graduation with departmental honors in political science.

Thesis. 1-6 credits, maximum 6.

Quantitative Methods of Political Analysis. 1-6 credits, maximum 6. Required of all graduate students. Fundamental methodological issues in the scientific study of politics. Logic of science, principles of research design and computer data manipulation and analysis.

Research in Public Administration, Public Policy and Politics. 1-6 credits, maximum 6. Individually supervised research.

Internship in Public Administration and Government. 1-6 credits, maximum 6. Individually supervised internships in administrative and governmental career areas. Paper required.

Readings in Politics, Public Policy or Public Administration. 1-6 credits, maximum 6. Prerequisite: consent of supervising professor. Readings in the student's major area of study.

Advanced Problems in Government, Politics, and Public Policy. 3 credits, maximum 6. Special seminar topics. One credit per semester, not more than 6 credits in any one semester.

Seminar in Public Policy. 3-6 credits, maximum 6. Public policy process including policy design, implementation and change. Approaches to public policy including design science, rational choice, policy sciences, normative models, and institutionalism.

Seminar in Program Evaluation. Methodological evaluation of research in public programs. Emphasis will be placed on designing and interpreting evaluative studies rather than the mastery of particular mathematical, statistical or computer skills.

Seminar in International Relations. 3 credits, maximum 6. Research on the dynamics and institutions of international politics.
Psychology (PSYCH)

1113 (S)Introductory Psychology. Principles, theories, vocabulary, and applications of the science of psychology.

2313 Psychology and Human Problems. Prerequisite: 1113. Personality dynamics and their application to personal, cultural and vocational experience.

2593 Psychology of Human Sexuality. Prerequisite: 1113. Survey of behavioral, personality and psychophysiological components of human sexuality, with special emphasis on the delineation of facts from sexual myths.

3013 Psychology of Motivation. Prerequisite: 1113. Review of research and theory in such areas of motivation as hunger, sex, frustration, aggression, achievement, affiliation, and altruism.

3073 (N)Neurobiological Psychology. Prerequisite: 1113. Natural bases of human experience and behavior. Topics include sensation and perception, motivation and emotion, learning and thinking.

3113 (N)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 (S)Industrial and Organizational Psychology. Prerequisite: 1113. Behavior in task group and organizational context with emphasis on management, leadership and human relations.

3413 (S)Psychology of Social Behaviors. Lab 1. Prerequisites: 1113, 3213. Contemporary theoretical and methodological issues in social psychology with special emphasis on the social psychology of the experiment and experimentation with the social aspects of human behavior.

3443 (S)Abnormal Psychology. Prerequisites: 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 such as classical and instrumental conditioning to relatively complex processes such as verbal learning and concept identification.

3651 (S)Developmental Psychology. Prerequisites: 1113, and 60 credit hours or 45 hours with GPA of 3.25. The nature of pertinent studies, causes, and theories of human developmental phenomena across the life span.

3654 (S)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 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 (S)Freud’s Psychoanalytic Theories. Prerequisite: consent of instructor. A genetic approach to Freud’s system of psychoanalysis as a theory of personality and as an 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 (S)Cognitive Psychology. Prerequisites: 1113, 3213 or equivalent. Cognitive processes, thinking, problem solving, 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 psychological research.

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. Emphasizes 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. The new psycholegal literature reviewed with emphasis on the psycholegal basis of voir dire, eyewitness behavior, court room persuasion, jury deliberation, and mental health issues.

4183 Current Issues in Clinical Psychology. Prerequisites: 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 (S)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.

4463 (S)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 (H)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 and 3213. Quantitative aspects of measurement and testing, with emphasis on scaling, standardization, reliability and validity. Basic principles of construction and the ethics of use.

4823 Computer Applications in Psychology. Prerequisites: 3213 and 3914 and consent of instructor. Organization of experimental data for computer-assisted analysis. Emphasis on problems peculiar to within-subject experiments used in psychology. Selection, modification and implementation of data analysis programs. A thorough knowledge of statistical techniques is assumed.

4880 Senior Honors Thesis. 1-6 credits, maximum 6. Prerequisite: 3546 or department’s invitation, senior standing, Honors program participation. A guided reading and research program ending with an honors thesis under the direction of a senior faculty member. Required for graduation with departmental honors in psychology.

4990 Special Problems. 1-6 credits, 6 maximum. Prerequisites: 1113, 3213 and consent of instructor. For honors students and other outstanding students. Experimental or library research.

5000 Thesis. 1-6 credits. Required of all graduate students majoring in psychology and writing a thesis.

5054* Proseminar in General Psychology I. Prerequisites: graduate standing in the Department of Psychology and consent of instructor. Major theories, methodological, 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. Prerequisites: 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. Prerequisites: 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.

5133° Minority Issues. Prerequisite: six credit hours of psychology and consent of instructor. Social issues related to pluralism with emphasis on community and social psychology.

5143° The Psychology of Substance Abuse. Prerequisite: consent of instructor. Introduction to psychological classifications of substance and drug use disorders. Theory and research on psychological, biological, and environmental factors that are concomitants of substance abuse. Overview of major research techniques and treatment modalities in this area.

5153° Individual Mental Tests. Prerequisites: 3443, 4813; graduate standing in the clinical program of the Department of Psychology, the doctoral school or counseling psychology program or the psychometry program, or consent of instructor. Practice in understanding, administering and interpreting the Stanford-Binet, WAIS, WISC-R and other mental tests.

5173° Child Psychopathology and Treatment. Prerequisites: 3443, 3583 or equivalent; graduate standing in the clinical program of the Department of Psychology, the doctoral school psychology program or the psychometry program, or consent of instructor. Theoretical positions and issues in child psychopathology; Procedures used in the treatment of psychological disorders of children.

5253° Seminar in Human Development. Prerequisite: 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. Theoretical and methodological objectives: application of psychological knowledge and skills to problems of social change and general improvement of the quality of life. Physical, psychological, and social factors viewed through system analysis.

5303° Quantitative Methods in Psychology I. Prerequisite: 3213. Statistical methods of evaluating research hypotheses in psychology. Descriptive measures, Student’s t, one-way analysis of variance, comparisons among groups and statistical robustness are studied.

5313° Quantitative Methods in Psychology II. Prerequisite: 5303. A continuation of 5303. Higher-order analysis of variance designs, correlation and regression techniques, and analysis of covariance, with emphasis on applications to psychological experimentation.

5323° Theory and Methods of Scaling. Prerequisites: six credit hours of psychology and three hours in statistics. Theoretical and methodological principles underlying paired comparison, successive interval, fusing, scagolam and equal-appearing interval scales. The application of scaling techniques to research in the behavioral and social sciences.

5353° Psychology of Motivation. Prerequisite: 3914. Outline of theory and research in human and animal motivation.

5380° Research. 1-12 credits, 12 maximum. Prerequisite: consent of instructor. Research project on some psychological problem.

5393° Verbal Processes. Consideration of task and subject variables, transfer and mediation, associative processes and verbal behavior.

5413° Systems of Psychology. Two different meanings of “system” considered: the traditional meaning dealing with the various schools of psychology, and the modern meaning in which contemporary social problems are viewed as sets of interrelated variables that produce unforeseen and remote effects.

5433° Psychology of Information Processing: Development and Aging Aspects. Attention, list processing, pattern recognition and related areas in terms of contemporary facts, theory and application. Special attention paid to development and aging aspects of information processing.

5443° Behavioral Medicine. Prerequisite: graduate standing in the clinical program of the Department of Psychology; consent of instructor. An advanced graduate course for students in training for a Ph.D. in clinical psychology. General considerations for psychophysiological disorders, general intervention strategies in behavioral medicine including biofeedback, and specific consideration and intervention strategies for specific disorders.

5483 Neurobiological Psychology. Prerequisites: 3073 and 3914, or consent of instructor. An examination of the biological aspects of human development, with particular emphasis on the physiological, ethological, and genetic perspectives.

5620° Seminar in Psychology. 1-9 credits, 9 maximum. Prerequisite: consent of instructor. Consideration of special topics that are particularly timely or technical in nature.

5640° Clinical Practicum. 1-12 credits, 17 maximum. Prerequisite: graduate standing in the clinical program of the Department of Psychology. Practicum experience for graduate students in the clinical psychology program.

5650° Practicum. 1-16 credits, 16 maximum. Prerequisites: graduate standing in the clinical program of the Department of Psychology. For the marriage and family practice option, all 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. Primarily for graduate students with well-defined new teaching responsibilities.

5713° Projective Psychodiagnostic Methods. Prerequisites: 5113, 5153; graduate standing in the clinical program of the Department of Psychology or consent of instructor. Administration and interpretation of projective tests such as the Rorschach, TAT, DAP and their derivatives.

5721° Child Diagnostic Methods. Prerequisites: 5153, 5173; graduate standing in the clinical program in the Department of Psychology or the doctorate school psychology program, or consent of instructor. Administration and interpretation of diagnostic instruments used specifically with children.

5753° Objective Psychodiagnostic Methods. Prerequisites: 5443, 5483; graduate standing in the clinical program of the Department of Psychology or the doctorate counseling psychology program, or consent of instructor. Restricted to graduate students in programs designed to prepare students for the professional practice of psychology. Complex objective personalité and interest tests and their diagnostic and clinical uses.

5823° Cognitive Processes. Theory and experimental research findings dealing with human thought processes from a developmental and functional standpoint.

5863° Group Processes. Prerequisite: 3743. Analysis of both intragroup and intergroup behavior in small groups. Emphasis on experimental research reported. Relationships of small groups to large groups, institutions and collective behavior.

5883° Seminar in Psychological Testing. Prerequisites: 5153, 5173, 5753, and graduate standing in the clinical program of the Department of Psychology, or consent of the instructor. The administration, interpretation, and integration of projective and objective personality 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). Supervised clinical experience under the direction of a qualified clinical psychologist in a mental health setting.

6000° Dissertation. 1-16 credits, maximum 60. Research and report thereon by graduate students in partial fulfillment of requirements for the Doctor of Philosophy degree.

6223° Research Design. Prerequisites: 3914, 5323, and doctoral level standing. Experimental techniques in psychophysics, sensory processes, attention and perception, motivation and emotion, and learning and memory.

6283° Factor Analysis. Factor analysis and implications for measurement of mental abilities, personality traits and learning.

6313° Systems of Psychotherapy. Prerequisites: 5113; graduate standing in the clinical program of the Department of Psychology or consent of instructor. The major approaches to psychotherapy. Methods for creating change from belief to action, including interpersonal, social, community and preventative interventions.

6393° Psychology of Language. Review of data and theories of speech and language behaviors. Laboratory techniques and experimental designs will also be reviewed to emphasize understanding of psycholinguistic research.

6513° Group Treatment Methods. Prerequisites: 5113; graduate standing in the clinical program of the Department of Psychology or the doctorate counseling psychology program, or consent of instructor. Introduction to major techniques of group treatment including Gestalt and transactional analysis as well as more conventional techniques.
Religious Studies (REL)

1103 (H)The Religions of Mankind. Major world religions such as Hinduism, Buddhism, Judaism, Christianity and Islam will be studied to discover the general nature of religion and its various dimensions.

1111 Religion and Contemporary Issues. The nature of religion and its relation to current problems, such as racism, sexism, hunger, ecology and war. 8 weeks only.

2513 Religious Groups in the United States. Selected religious groups in 19th and 20th century America. Emphasis on significant movements and groups outside of mainstream Christianity.

3013 (H)The Old Testament and Its Study. A study of the Hebrew Scriptures with emphasis upon content, historical background, the history of its study and the critical analysis and theological interpretation of selected passages.


3243 (H)Paul and the Early Church. Recommended: 3023. The writings of Paul in their historical context with special emphasis on his theology and ethics.

3293 (H)History of Christianity. An intellectual and cultural history of Christianity from the second century to the present day.

3303 (H)Modern Christian Thought. Important issues for Christians in the last two centuries: the historical Jesus, the validity of faith, the authority of the Bible and the challenge of modern science.

3403 (H)The Religions of India. Recommended: 1103. The beliefs and practices of Hinduism, Buddhism and Islam in India. Emphasis is placed on the historical origins, scriptures and current developments of each religion.

3413 (H)The Religions of China and Japan. Recommended: 1103 or 3013. An introduction to Judaism, with emphasis placed on the ideas and values emerging from the historical experiences of the Jewish people.

3533 (H)The Islamic Tradition. Recommended: 1103. An introduction to Islam, providing an historical survey up to the modern period, with emphasis on the Qur’an, the prophet Muhammad and major aspects of Muslim thought and civilization.

3573 (H)The Religions of Native Americans. Recommended: 1103. Selected tribal worldviews, belief systems and religious ceremonies, as depicted in oral traditions, songs and literature. Emphasis on Northern and Southern Plains Indians.


3613 (H)African Cultures and Religion. Key ideas, values and achievements in African culture and tradition as found in literature, art and music viewed in historical and religious perspective.

3623 (H)Religion and the Arts. Key literary, graphic and musical works of art of a historical period will be studied to discover what humans are expressing of religious significance. Selected periods will be chosen from the Renaissance to the present.

3713 (H)Religion, Culture and Society. Recommended: 1103, ANTH 2353, SOC 1113. An introduction to the scientific study of religion. Religious activity in both tribal and technological societies studied in the light of contemporary interpretations of culture and of social behavior. Same course as SOC 3713.

3723 (H)Religion: Psychological Interpretations. Recommended 1103 or PSYCH 2313. A study of the development, theory and research of modern psychological perspectives on the religious experience. Same course as PSYCH 3733.

3833 (H)Ethical Issues in Biology and Medicine. Moral problems brought about by recent developments in scientific research and medical technology. Abortion, euthanasia, genetic engineering, and human experimentation. Same course as PHIL 3833.

4013 (H)Perspectives on Death and Dying. Issues that arise as individuals confront the fact of mortality. Dying patients, the ethical issues of euthanasia and suicide, the process of grief, death in literature and the arts, and philosophical and religious views on immortality. Same course as PSYCH 4013.

4050 Studies in Religion. 2-6 credits, maximum 6. Independent studies, seminars and courses on selected topics in religion.
Sociology (SOC)

1113 (S)Introductory Sociology. The science of human society. Emphasis on basic concepts. Assists the student in understanding the social influences on day-to-day life.

1123 Social Issues and Human Values. Social issues discussed and debated. Oral and written expression of views encouraged on a variety of social issues ranging from racism to the role of the police in the modern industrial state. Course draws on many of the social sciences, with major emphasis being in sociology.

2123 Social Problems. Exploration in selected social issues of contemporary American society, such as deviance, poverty, sexism, and racism.

2223 Rural Sociology. Life in rural America and nonwestern societies examined with special emphasis on social relations, population movement, social change and problems of rural society.

2993 Sociology of Racism. Sociological phenomena of racial development, processes, problems and consequences.

3113 Theoretical Thinking in Sociology. Prerequisite: 1113. Sociological theory in three broad areas: the emergence of social theory, the major schools of social theory and the relevance of theory to sociological research.

3223 (S,SpD)Social Psychology. Social basis of personality development and behavior, including symbolic environment, self and group, motivation, attitudes and opinions, and social roles.

3323* (S)Collective Behavior and Social Movements. Analyzes panics, crazes, riots and social movements emphasizing institutional and social psychological origins and consequences.

3373* (S)The Sociology of Developing Societies. Prerequisite: one course in sociology or consent of instructor. Theories and practice of development in the Third World since World War II. Emphasis on plans, programs and projects of various national and international agencies and the effects on the culture, social relations, and social structures of Third World countries.


3523* (S,SpD)Juvenile Delinquency. Juvenile delinquency behavior, its relation to family, school, peers, community and institutional structures. The extent of delinquent expressions, varieties of delinquency, comparative international perspectives and new trends of females in delinquency and gang behavior.

3713 (H)Religion, Culture and Society. Recommended: 1113, ANTH 2353, REL 1103. An introduction to the scientific study of the relationship between human and religious values. Study of the influence of tribal and technological societies studied in the light of contemporary interpretations of culture and of social behavior. Same course as REL 3713.

3723* (S,SpD)Sociology of American Family. Relationship between the family and other American institutional structures. Specific attention to values and behavior in mate selection, sexual behavior, marital relationships and sexual role differentiation.

3823* (S)Sociology of Death and Dying. Death and dying as social phenomena including cross-cultural perspectives. An understanding of occupations and professions serving the terminally ill in hospitals and with funerals. Students required to engage in original research from community sources.

3883* The Field of Social Work. Prerequisites: 1113, 2123. Unique features of the profession of social work. A problem-solving framework as the basis of identifying and analyzing various individual and social problems, developing plans for problem alleviation, carrying out and monitoring the plan, and evaluation of effectiveness. Selected theoretical orientations offering practical alternatives to problem solving.

3952 Applied Sociology. Prerequisite: sociology majors or consent of instructor or adviser. Application of sociological theory and methods to various job situations.

4003 Senior Thesis in Sociology. Prerequisites: 3113, 4013, 4133, STAT 4013, and consent of instructor. Conduct a research project (review literature, prepare proposal, gather and analyze data and report results) on a sociologically significant topic or issue.

4013* Qualitative and Applied Social Research Methods. Prerequisites: 3113 and 4013. Conducting, analyzing and reporting qualitative social research. Research design, data collection, analysis and write-up of evaluation research and social impact assessments. Individual research project included.

4023* (S)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* (A)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 relationships. Theoretical concepts, empirical research, and descriptive rates of behavior are discussed.


4323* Sociology of Agriculture. Overview of U.S. agriculture focusing on changing markets and technologies and their impact on farm families and other social institutions and relationships. Emphasis on agricultural economics, policies and alternatives to traditional farming practices.


4343* (S,SpD)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 social processes involved in medical practice. Cross-cultural comparisons and the sociology of the health professions.

4383* (S)Social Stratification. Systems of class and caste, with special attention to the United States. Status, occupation, income and other elements in stratification.

4423* (S)Community Organization and Development. Structure, change and development of the local community in rapidly changing society. Emphasis on community organization and planned change.

4433* (S,SpD)Social Ecology and Life Processes. Human interdependencies and interrelationships with the physical and environmental worlds, with special focus on the mutual impact of human values, human environment and life phase.

4443* (S)Sociology of Law and Legal Institutions. Prerequisite: 3523 or 4333. Criminal 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* (S)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* (S,SpD)World Population Problems. Fertility, mortality and migration, and other factors related to population size, density, and composition; the population explosion; worldwide famine, birth control, and other serious social issues.

4623* (S)Sociology of Industry and Work. The interrelationship of the social order and work plan as a social system, work role behavior and special groups in industry and work.


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. Prerequisite: 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.

4933* 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, maximum 6. Prerequisite: consent of instructor. Examines sociologically significant topics and issues.
5900* Advanced Problems and Issues in Sociology. 1-9 credits, maximum 9. Prerequisite: consent of instructor. Group enrollment or individual research enrollment as needed. Graduate level analysis of special problems and issues in sociology not covered in other department offerings.

6000* Dissertation. 1-12 credits, maximum 18.

6110* Sociological Theory II. 2-3 credits, maximum 6. Critical examination of significant theoretical formulations, 1900 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. 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 Industrial Sociology. 2-3 credits, maximum 6. Intensive analysis of selected problems in industrial sociology.

6550* Seminar in Social Organization. 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 simple Spanish texts, mostly cultural. May be taken concurrently with other 2000-level Spanish courses.

2213 Intermediate Conversation and Composition I. Lab 1. 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 1. Prerequisite: 2113 or equivalent. (May have been gained in high school.) Readings, vocabulary building, conversation, guided composition. May be taken concurrently with other 2000-level Spanish courses.
Speech Communication (SPCH)

2713 Introduction to Speech Communication. Principles and techniques of preparing for, participating in and evaluating communication behavior in the conversation, the interview, group discussion and the public speech. A competency-based approach.

3010 Speech Activity Participation. 1-3 credits, maximum 6. Preparation for, and participation in, speech communication and speech pathology activities.

3703 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.

3711 Employment Interviewing. Lab. 1. Prerequisite: junior standing. Prepares student to understand, prepare for, and participate in employment interviews.

3720 Practicum I. 1-2 credits, maximum 2. Prerequisite: speech communication major. Communication facilitation for the speech communication major, with student's initial role as interventionist.

3723 Business and Professional Communication. Oral communication encounters in business and professional settings. The interview, informative briefing, talking-paper, small group interaction and informative, integrative and persuasive speeches.

3733 (S)Elements of Persuasion. Principles and concepts of interpersonal and public persuasive encounters. The instrumental and interactive nature of persuasion. Designing and participating in actual persuasive campaigns.

3743 Advanced Public Speaking. The preparation and delivery of various types of public speeches.

3793 Communication in Interviews. General principles of interviewing. Specific guidelines for the interviewer in survey, journalistic, counseling, selection, appraisal, legal, medical, and sales interviews.

4010 Independent Study in Speech Communication. 1-3 credits, maximum 3. Prerequisite: consent of instructor. Supervised research projects in speech communication.

4013 Communication Theory. Survey of current theories and models dealing with symbolic and communicative behavior.

4710 Topics in Speech Communication. 1-3 credits, maximum 6. Selected current topics in speech communication.

4720 Practicum II. 1-3 credits, maximum 3. Prerequisite: consent of instructor. Individual research projects providing practical experience for advanced undergraduate students on and off campus.

4723* (H)History of Public Address. Analysis of speeches of selected American orators as artifacts and rhetorical responses. Content, structure and style of the speeches and the historical situations in which they were given.

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* (I)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.

5000 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 conducting a piece of research.

5023* Introduction to Quantitative Research in Speech. Methods and major findings of empirical research in speech.

5210* Advanced Practicum. 1-3 credits, maximum 9. Prerequisite: consent of instructor. Practical 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.

5763* Seminar in Organizational Communication Consultancy. Diagnostic measures for identifying communication problems in organizations and the development of consulting or interventionist programs to solve such problems.

Speech Pathology (SPATH)


2113 Introduction to Communication Disorders. Prerequisites: 2113 (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 Practicum Clinical Experience. 1-3 credits, maximum 6. Prerequisites: 2113, 2213, 3224, and declared SPATH major. Observation of 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 (S)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, 4601, 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.

4132* American Sign Language. Prerequisite: junior standing or consent of instructor. Introduction to American Sign Language including receptive and expressive components developed within a linguistic, psycholinguistic, and sociolinguistic framework.

4133* Aural Rehabilitation for the Acoustically Handicapped. Prerequisites: 2113, 2213, 3213, 3224, 3225. Clinical aspects of habilitation and rehabilitation programs for the deaf and the hard-of-hearing, including speech reading, auditory training, speech conservation, speech and language therapy, hearing aid orientation and counseling. Amplification units studied.

4214* (N)Anatomy and Physiology of the Speech Mechanism. Prerequisite: 2112. Structure and function of the speech mechanism. Laboratory experiences.

4222* Discourse Analysis. Prerequisites: 2113, ENGL 2443 or consent of instructor. The study of discourse structure across content, cultures, and modalities (spoken and written texts). Special emphasis on comparative analysis of discourse at a variety of developmental levels and clinical types.
5251* Seminar in Diagnostic Methods. Prerequisite: 4253. 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 information about communication disorders which occur in aging. Strategies for dealing with problems.

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)

2013 (A)Elementary Statistics. Prerequisite: MATH 1513. An introductory course in the theory and methods of statistics. Descriptive measures, elementary probability, samplings, estimation, hypothesis testing, correlation and regression. There is a separate section for students in social sciences. No credit for students with credit in 2023.

2023 (A)Elementary Statistics for Business and Economics. Prerequisite: MATH 1513. Basic course for undergraduate business majors. Descriptive statistics, basic probability, discrete and continuous distributions, point and interval estimation, hypothesis testing, correlation and simple linear regression. No credit for students with credit in 2013.


4013* (A,SpD)Statistical Methods I. Lab 2. Prerequisites: 60 credit hours including MATH 1513. Basic experimental statistics, basic probability distributions, methods of estimation, tests of significance, linear regression and correlation, analysis of variance for data that are in one way, a two-way crossed, or in a two-fold nested classification.

4023* (A,SpD)Statistical Methods II. Lab 2. Prerequisite: 3013 or 4013 or 4033. Basic concepts of experimental design, Analysis of variance, covariance, split-plot design. Factorial arrangements of treatments, multiple regression in estimation and curvilinear regression, enumeration data.

4043* Applied Regression Analysis. Prerequisite: one of 4013, 4033, 5013 or equivalent. Matrix algebra, simple linear regression, residual analysis techniques, multiple regression, nonlinear regression, dummy variables, influence statistics.

4053* Statistical Methods for Engineers. Lab 2. Prerequisites: one of 4013 or 4043. Methods for experimenters and engineers. Analysis of variance, multiple comparison test, 2n factorial arrangement of treatments, fractional factors, randomized block designs, simple and multiple linear regression. No credit for students with credit in 4013 or 5013.

4091* Statistical Analysis System. Prerequisite: 4013 or equivalent. SAS dataset construction, elementary statistical analysis, use and statistics of graphics procedures available in the SAS package.

4113* Introduction to Probability Theory. Prerequisite: MATH 2365 and one other course in MATH which has either 2265 or 2365 as a prerequisite. Basic probability, probability distributions, random variables, moments, distributions of functions of random variables, weak laws of large numbers, central limit theorems.

4203* Mathematical Statistics I. Prerequisite: MATH 2365. Introduction to probability theory for students who are not graduate majors in statistics or mathematics. Probability, dependence and independence, random variables, univariate distributions, multivariate distributions, moments, functions of random variables, moment generating functions.

4213* Mathematical Statistics II. Prerequisites: 4203 and MATH 3013. Statistical inference for students who are not graduate majors in statistics or mathematics. Sampling distributions, maximum likelihood methods, point and interval estimation, hypothesis testing.

4223* Introduction to Statistical Inference. Prerequisites: 4113 and MATH 3013. Sampling distributions, point estimation, maximum likelihood methods, Rao-Cramer inequality, confidence intervals, hypothesis testing, sufficiency, completeness.

4910* Special Studies. 1-6 credits, maximum 6. Prerequisite: consent of instructor. Special subjects in statistics.

4993 Senior Honors Project. Prerequisites: departmental invitation, senior standing. Honors program participation. 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 statistics.


5013 Statistics for Experimenters I. Prerequisites: graduate standing and MATH 1513. Introductory statistics course for graduate students. Descriptive statistics, basic probability, probability distributions, fundamentals of statistical inference, hypothesis testing, regression, one-way classification, analysis of variance, comparisons of experiments, correlation and linear regression, introduction to categorical data analysis.

5023* Statistics for Experimenters II. Prerequisites: graduate standing and 4023 or 5033. Analysis of variance and covariance, use of variance components and their estimation, completely randomized, randomized block and Latin square designs, multiple comparisons, subsampling of experimental units, factorial arrangements of treatments, single degree of freedom comparisons, experiments involving split-units.

5033* Nonparametric Methods. Prerequisite: one of 4023, 4043, 4053, 5023 or consent of instructor. A continuation of 4013 and 4023, concentration on nonparametric methods. Alternatives to normal-theory statistical methods; analysis of categorical and ordinal data, methods based on rank transforms, measures of association, goodness of fit tests, order statistics.

5043* Sample Survey Designs. Prerequisites: one of 4013, 4043, 4053, 5013 or consent of instructor. Constructing and analyzing personal, telephone and mail surveys. Descriptive surveys including simple random, stratified random designs. Questionnaire design, frame construction, non-sampling errors, use of random number tables, sample size estimation and other topics related to practical conduct of surveys.

5053* Time Series Analysis. Prerequisite: 4043 or 4053. An applied approach to analysis of time series in the time domain and the frequency domain. Descriptive techniques, probability models for time series, autoregressive processes and forecasting. Box-Jenkins methods, spectral analysis and use of computers.
5063* Multivariate Methods. Prerequisites: 4043 and 4023 or 4053 or 5023. Use of Hotelling's T-square statistic, multivariate analysis of variance, canonical correlation, principal components, factor analysis and linear discriminant functions.

5113* Intermediate Probability Theory. Prerequisites: 4113 and MATH 4363. Measure theoretical presentation of probability, integration and expectation, product spaces and independence, and invariance under transformations, different kinds of convergence in probability theory and statistical spaces. Same course as MATH 5113.

5133* Stochastic Processes. Prerequisites: 4113 and MATH 5203, MATH 5013. Definition of a stochastic process, probability structure, mean and covariance function, the set of sample functions, stationary processes and their spectral analyses, renewal processes, counting processes, discrete and continuous Markov chains, birth and death processes, exponential model, queuing theory. Same course as INDEN 5133 and MATH 5133.

5203* Large Sample Inference. Prerequisites: 4223 and 5113. Different types of convergence in probability theory, central limit theorem, consistency, large sample estimation and tests of hypotheses, concepts of asymptotic efficiency, nonparametric tests.

5213* Bayesian Decision Theory. Prerequisites: 4223 and MATH 4363. Statistical spaces, decision spaces, loss and risk, minimum risk decisions, conjugate families of distributions, Bayesian decisions.

5303* Experimental Design. Prerequisite: 5023 or 4203 with consent of instructor or 4043 with consent of instructor. Review of basic concepts and principles of comparative experiments, the role of randomization in experimentation, interpretation of effects and interactions in multifactor designs, error term selection principles, multiple comparisons, split-unit experiments, incomplete block designs, confounding of factorial effects in 2n and 3n series of factorials, single and fractional replication optimum seeking designs, pooling of experiments over time and space, crossover and switch back designs.

5323* Theory of Linear Models I. Prerequisites: 4223, and MATH 5013, and one of 4023, 4053 or 5023. Multivariate normal distributions of quadratic forms, general linear models, Markov theorem, variance components, general linear hypotheses of full rank models.

5323* Theory of Linear Models II. Prerequisite: 5323. Advanced regression topics; mean model theory and application to fixed models; orthogonal polynomials; data structures, residuals and sums of squares, multiple comparisons, 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 mathematical statistics and statistical methods.


6013* Genetic Statistics. Prerequisites: 4213 or 4223, and ANSI 6003, or consent of instructor. Linear models for quantitative traits, genetic relationship and linkage. Theory of selection and crossbreeding. Mathematical techniques in inbreeding. Path coefficient theory.


6213* Advanced Statistical Inference. Prerequisites: 5113, and 5203 or 5213. Point estimation, maximum likelihood, Neyman-Pearson theory of testing hypothesis and power of test.

6223* Advanced Design of Experiments. Prerequisite: 5303 and 4203 or consent of instructor. Construction of various experimental designs, such as mutually orthogonal series of Latin Squares, balanced and partially balanced incomplete block designs, confounded and fractionally replicated designs. Response surface methodology. Theory of factorial arrangements of treatments. Confounding of factorial effects. Fractional replication of factorials, confounding in mixed series of factorials, randomization tests, transformations of data, plot techniques and principles of split-plot techniques. Analysis of series of experiments and analysis of covariance.

6910 Special Problems. 1-6 credits, maximum 12. Investigation of special problems in the theory and application of statistics using current techniques. Special studies for Ph.D. level students.

Technical Education (TECED)

3103 Introduction to Technical Education. Prerequisite: OADE 3113. The role and function of technical education in the development of human resources. Historic and philosophic bases for technical education with emphasis on programs, purposes, and objectives and the variety of environments in which such programs exist.

4112* 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 technical specialty.

5113* Comparative Occupational Education. Prerequisite: graduate standing. Ideas, practices and systems of occupational education in other countries compared with contemporary practices in the United States to provide a basis for an enlarged, critical view of technical education.

5223* Curriculum Development in Technical Education. The interrelationship of mathematics, science, technical, teachability and general education in technical curricula. Contemporary practices in constructing, revising and evaluating technical curricula.

5233* Occupational Analysis. Techniques for determining educational requirements of technical occupations. Analysis systems used by educational institutions, the military and the United States Department of Labor.

Technology Education (TE)


3002 Introduction to Industrial Technology Education. Industrial technology education in a modern educational system, including the historical and philosophic bases for such programs. Purposes, objectives and functions of contemporary industrial arts and technology education programs in public schools. Participation in on-site observation experience in the public schools.

3012 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 industrial 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 functioning heating, cooling, plumbing and electrical systems.


3033 Materials and Processes. Lab 4. Introduces students to the basic properties of metallic, polymeric, wood, ceramic and composite materials and the proper techniques used to convert these materials into products. Special attention is given to the safety and care of industrial equipment.

3043 Constructing Structures. Lab 3. Prerequisite: 3003 or equivalent or consent of instructor. Comprehensive study of the activities involved in preparing to build, build, and completing 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 historical development, basic foundations, concepts, and systems of technology. Practical aspects of planning, designing, and integrating technology-based activities into elementary and special education curricula.

3103 Architectural Drawing. Lab 3. Prerequisites: GENT 1153 and MECDT 1223 or equivalent or consent of instructor. Architectural drafting skills and information based on current drafting 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.

3223 Electronic Communication Fundamentals. Lab 3. Prerequisite: 3023. A general introduction to contemporary electronic communication technology including telecommunications, hard-wired, computer, light, and acoustic systems. An overview of the products and impacts of electronic communication systems and the nature of the electronic communication industry.

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, volume, and temperature with practical exercises in calculations, conversions, and the use of terminology.

3312 Manufacturing Materials and Testing. Lab 3. Physically properties and testing of materials used in industry such as metals, ceramics, wood, plastics, composites, adhesives and fasteners; stresses the use of such materials in industrial arts and technology education programs.
selected current interest topics concerning industrial arts, tools and equipment used in various industrial fields. Employer-employee relations, techniques for finishing fabricated products. Laboratory work for these activities.

4013* Research and Development in Industrial Technology Education. Lab 3. Prerequisites: 3033 and 3553. The methodology and practices of technical research and development as conducted in an industrial and educational setting. Laboratory activities performing basic tasks associated with product and process research and development.


4322* Industrial Technology. Industrial materials and manufacturing and processing techniques including automatic machinery 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 Technology 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 working with materials, tools and equipment used in various industrial crafts. Special emphasis placed on specific crafts that are most applicable to the elementary and special education curriculum.

5020* Seminar in Industrial Technology Education. 1-3 credits, maximum 3. 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: 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 technology education 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. As specific and special teaching methods and class control.

5563* Critical Issues in Technology Education. Analysis of current trends, issues, and program development.

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.

1913 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, thematic, historical and production analyses of various types of play scripts; understanding the work of various theater artists; developing appreciative audiences.

2423 Oral Interpretation. Reading aloud effectively; training in voice improvement, platform techniques, selection criteria and audience analysis.

2453 Acting I. Prerequisite: 2413. Ensemble techniques and creative improvisation; vocal and physical development for the actor; theories and techniques of acting; fundamental scene and character analysis; 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 special topics 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 technique. Exploration of audition skills for the comic 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 body as an 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 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 script, execution 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.

4463* (H)Theater History II. Aesthetic and social relationships of theater and western civilization from the mid-17th century through the 19th century.

4473* (H)Theater History III. Aesthetic and social relationships of theater and western civilization from 1900 to the present.

4503* Theater Graphic Techniques. Fundamental theater graphic techniques to communicate theatrical design ideas.

4713* (H)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* (H)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 through design sketches. Study of stage costume for practical experience preparing for departmental productions.

4993 Senior Honors Project. Prerequisite: departmental invitation, senior standing. Honors project participation. A guided reading and research program ending with an honors thesis or performance under the direction of a faculty member, with second faculty committee member. Required for graduation with departmental honors in theater.

5003* Theater Research Methods. Prerequisite: graduate standing. Diverse methods of theater research appropriate to performance, design and technology, and history and theory. Developing familiarity with standard references and journals of the field, and introduction to professional organizations.
Trade and Industrial Education (TIED)

2000 Field Experience in Industrial Practice. 2-6 credits, maximum 24. Prerequisite: consent of instructor. Field experience in a variety of industrial settings under the supervision of an experienced individual. Graded on a pass-fail basis.


3203 Introduction to Trade and Industrial Education. 3 credits. Prerequisite: consent of instructor. Introduction to the field of trade and industrial education.

4103* Instructional Procedures in Trade and Industrial Education. 3 credits. Prerequisite: 3203. Methods and techniques for teaching and learning in trade and industrial settings.

4110* Trade Technical Information. 1-4 credits, maximum 6. Prerequisite: consent of instructor. Development of technical information.

4123* Coordinating Vocational Student Organizations and Activities. 3 credits. Prerequisite: consent of instructor. Coordination of student organizations.

4214* Safety, Organization and Management of Learning Facilities. 3 credits. Prerequisite: consent of instructor. Management of learning facilities.

4344* Trade Analysis and Instructional Planning. 3 credits. Prerequisite: 4253. Analysis of trades and occupational job activities and development of course outlines.

5113* Individualized Cooperative Education. 2 credits. Prerequisite: consent of instructor. Individualized cooperative education.

5153* Supervision of Vocational Education. 3 credits. Prerequisite: consent of instructor. Supervision of vocational education.

5223* Evaluation of Instruction. 3 credits. Prerequisite: 4103. Evaluation of instructional programs.

5232* Teaching Related Information. 3 credits. Prerequisite: 4103. Teaching related information.

5552* Education and Industry Relations. 3 credits. Prerequisite: consent of instructor. Education and industry relations.

5663* Conference Leading. 3 credits. Prerequisite: consent of instructor. Conference leading.

5773* Related Information for Interdisciplinary Co-operative Education. 2 credits. Prerequisite: 1-39 credits. Related information for interdisciplinary co-operative education.

6582* Practices and Problems of the Coordinator. 2 credits. Prerequisite: 4253. Practices and problems of the coordinator.

6910* Developing and Analyzing Teaching Content. 3 credits. Prerequisite: consent of instructor. Developing and analyzing teaching content.

University (UNIV)

1011 American Studies Survey. 3 credits. Prerequisite: 3994. Survey of American studies.

2001 Academic Assessment and Evaluation. 3 credits. Prerequisite: consent of instructor. Academic assessment and evaluation.

2510 Innovative Studies. 1-3 credits, maximum 6. Prerequisite: consent of instructor. Innovative studies.

3110 Directed Study. 1-6 credits, maximum 6. Prerequisite: written approval by instructor. Directed study.

5221 Veterinary Medical Orientation II. 1-8 credits, maximum 8. Prerequisite: third-year standing in the College of Veterinary Medicine. Orientation for veterinary medical students.

5222 Veterinary Medical Orientation III. 1-8 credits, maximum 8. Prerequisite: third-year standing in the College of Veterinary Medicine. Orientation for veterinary medical students.

5772* Related Information for Interdisciplinary Co-operative Education. 2 credits. Prerequisite: 1-39 credits. Related information for interdisciplinary co-operative education.

6620 Clinical Science Elective. 1-8 credits, maximum 8. Prerequisite: third-year standing in the College of Veterinary Medicine. Clinical science elective.

7621 Veterinary Medical Clinic Conference I. 1-8 credits, maximum 8. Prerequisite: third-year standing in the College of Veterinary Medicine. Conference for veterinary medical students.

862 Veterinary Medical Clinic Conference II. 3 credits. Prerequisite: 7621. Conference for veterinary medical students.

Veterinary Medicine (VMED)

5911 Veterinary Medical Orientation I. 1-8 credits, maximum 8. Prerequisite: full admission to the College of Veterinary Medicine. Orientation for veterinary medical students.

5912 Veterinary Medical Orientation II. 1-8 credits, maximum 8. Prerequisite: full admission to the College of Veterinary Medicine. Orientation for veterinary medical students.

5913 Veterinary Medical Orientation III. 1-8 credits, maximum 8. Prerequisite: full admission to the College of Veterinary Medicine. Orientation for veterinary medical students.

5914 Veterinary Medical Orientation IV. 1-8 credits, maximum 8. Prerequisite: full admission to the College of Veterinary Medicine. Orientation for veterinary medical students.
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 F.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 pathology and physiology of surgery including an introduction to techniques in veterinary surgery and anesthesiology.

5431* Veterinary Radiology I. Prerequisite: second-year standing in the College of Veterinary Medicine. Veterinary radiology, radiographic 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.

6501* Avian Medicine and Surgery. Prerequisite: third-year standing in the College of Veterinary Medicine. Clinical aspects of diseases of pet, zoo, exotic, and wild birds.

6516* 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.

6523 Veterinary Surgery II. Prerequisites: 5422 and third-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of diseases of companion animals.

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 I. Prerequisite: third-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of diseases of companion animals.

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. Diagnosis, prognosis, treatment and prevention of diseases of companion animals.

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.

6651 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.

6700 Preceptorship Clinic. 1-8 credits, maximum 8. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Approved clinical rotations off the OSU campus. Graded on a pass-fail basis.

6710 Non-OSU Clinic. 1-8 credits, maximum 8. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Approved clinical rotations off the OSU campus. Graded on a pass-fail basis.

6712* Intensive Care Clinic I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Management of small animal critical care cases.

6714* Radiology Clinic. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnostic radiography, ultrasound, and other special imaging modalities.

6720 Special Clinic I. 1-8 credits, maximum 8. Prerequisite: fourth-year standing in the College of Veterinary Medicine or graduate veterinarian. Special assignments for introductory clinical studies in the following: selected species clinic; herd-health program; necropsy, clinical pathology and parasitology; diagnostic laboratory; and special aspects of the basic sciences.

6722* Equine Medicine. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of equine medical diseases.

6724* Anesthesiology Clinic. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Management of clinical anesthesia in various domestic species.

6732* Special Clinic II. 1-8 credits, maximum 8. Prerequisite: fourth-year standing in the College of Veterinary Medicine or graduate veterinarian. Special assignments for continuing clinical studies in the following: selected species clinic; herd-health program; necropsy, clinical pathology and parasitology; diagnostic laboratory; and special aspects of the basic sciences.

6732* Emergency General Medicine and Surgery Clinic I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Receiving and managing emergency and general medical and surgical cases in companion animals.

6740 Special Clinic III. 1-8 credits, maximum 8. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Continuation of VMS 6730. Graded on a pass-fail basis.

6742* Small Animal Medicine Clinic I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, treatment and prevention of companion animal medical diseases.

6752* Small Animal Surgery Clinic I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of companion animal surgical diseases.

6762* Food Animal Medicine Clinic I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of diseases of food animal medical and surgical diseases.

6782 Clinic Pool I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Semi-elective clinical assignment.

6811 Special Lectures and Discussions. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Special lectures and discussions of selected topics in veterinary medicine and surgery.

6812* Intensive Care Clinic II. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Management of small animal critical care cases. Continuation of 6712.

6822* Equine Surgery. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of equine surgical diseases.

6832* Emergency General Medicine and Surgery Clinic II. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of companion animal medical diseases.

6852 Small Animal Surgery Clinic II. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of companion animal surgical diseases.

6862 Food Animal Medicine Clinic II. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, treatment and prevention of food animal medical and surgical diseases. Continuation of 6732.

6872* Field Services and Production Medicine. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Diagnosis, prognosis, and treatment of animal disease cases presented to the Field Services unit. Herd health studies of animals in herds, bands and flocks entered in health programs of the Boren Veterinary Medical Teaching Hospital.

6882 Clinic Pool II. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Semi-elective clinical assignment.

6900* Clinical Problems and Investigation. 1-6 credits, maximum 6. Prerequisite: third-year standing in the College of Veterinary Medicine. Diseases of animals.

6910* Advanced Clinics. 1-6 credits, maximum 6. Prerequisite: third-year standing in the College of Veterinary Medicine. Diseases of animals.

6920* Seminar. 1-3 credits, maximum 3. Prerequisite: graduate standing in the College of Veterinary Medicine or biological sciences. Literature and research problems pertaining to veterinary medicine and surgery.

6930* Comparative Anesthesiology. 1-3 credits, maximum 3. Prerequisite: graduate standing in the College of Veterinary Medicine or consent of the head of the department. Anesthesiology of animals.

6950* Special Surgical Problems and Techniques. 1-5 credits, maximum 5. Lab 3-5. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Advanced training in surgical problems and techniques especially as they are related to research.
Veterinary Parasitology, Microbiology and Public Health (VPARA)

3123 Animal Hygiene. Prerequisite: junior standing in the College of Agriculture. Principles of sanitation and of prevention and control of common diseases of livestock.

5000 Thesis. 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 department head. Special research problems in veterinary microbiology and parasitology.

5113 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.

5120 Current Topics in Veterinary and Biomedical Science. credit, maximum 4. 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.

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 ZOO 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 relationship to public health.

5242 Veterinary Biometry and Principles of Public Health. Prerequisite: first-year standing in the College of Veterinary Medicine. Statistics applied to biological observations applicable to veterinary medicine and principles of public health and epidemiology.

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.

5922 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 animals slaughtered for food and of food products of animal origin. Human nutrition, environmental and consumer aspects of food quality.

5923 Introduction to Public Health. Prerequisite: second-year standing in the College of Veterinary Medicine or consent of instructor. Relationship and 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. Graduate standing with major in certain biological sciences. Protozoan and external parasites of domestic animals.

5404 Techniques in Parasitology. Prerequisites: graduate standing and general parasitology; helminthology or concurrent enrollment. Experimental application of basic research and teaching techniques in helminthology and parasitology. Individual participation and analysis of experimental situations and techniques applicable to all areas of zoology.

5444 Veterinary Parasitology. Lab 2. Prerequisite: second-year standing in the College of Veterinary Medicine or graduate standing with major in certain biological sciences. Internal helminth 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 helminth parasites affecting invertebrate and vertebrate animals.

5533 Veterinary Virology. Prerequisites: 5313, MICRO 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. Prerequisites: 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: first-year standing in the College of Veterinary Medicine 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.

6203 Advanced Concepts in Veterinary Immunology. Prerequisite: 5113 or BIOCH 3653 or MICRO 3254. Induction of immune responses, host defense mechanisms, immunoregulation, antigen presentation and immune recognition by B and T lymphocytes, using contemporary research publications.

6613 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 principles to population disease problems.

6763 Special Topics in Veterinary Epidemiology. Prerequisite: one course in immunology or consent of instructor. Selected topics of current interest in veterinary epidemiology. 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 leading into pathalogy of the various systems. The functional disturbances that accompany changes in structures, as well as the cause and pathogenesis of disease. Correlation of altered structure and function with clinical sign patterns.

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 biological sciences. Techniques and methods used in diagnosis, technical work and research in pathology.

6000 Thesis. 1-15 credits, maximum 40. Prerequisite: graduate 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.

6612 Poultry and Laboratory Animal Diseases. Prerequisite: 5425 or written consent of department head. Biological characteristics, husbandry, diagnosis, prevention, and treatment of diseases of domestic poultry and selected species of animals used in teaching and biomedical research.

6723 Diagnostic Pathology, Parasitology and Microbiology I. Prerequisite: fourth-year standing in the College of Veterinary Medicine. Participation in animal necropsy, clinical pathology, clinical parasitology and microbiology laboratories to study diagnosis, prognosis, prevention and treatment of diseases.

6811 Differential Diagnosis. Prerequisite: fourth-year standing in the College of Veterinary Medicine. The differential diagnosis of diseases of domestic animals.

6832 Diagnostic Pathology, Parasitology and Microbiology II. Prerequisite: fourth-year standing in the College of Veterinary Medicine. The differential diagnosis of diseases of domestic animals.
3115* General Vertebrate Histology. Lab 3. Prerequisite: 3118 or consent of instructor. Cellular structure of tissues and organs.

3264* Cell Physiology. Lab 2. Prerequisite: BISC 3014 or BIOG 3563. Cellular activities and fundamental physiological processes.

4040* Ichthyology. Lab 6. Prerequisite: 3115 or consent of instructor. Systematics, evolution, distribution and morphological, ecological and behavioral adaptations of fishes. Emphasis on Oklahoma forms. Two weekend field trips required.

4141* Fisheries Management. Lab 4. Prerequisite: BISC 3034. Techniques and principles involved in management of fishes. Field trip fee required.

4343* Limnology. Lab 3. Prerequisite: BISC 3034. Physical, chemical and biological factors in lakes and streams.

4513* Wildlife Management. Prerequisite: 3513. Biological basis for the management of wildlife populations and habitats, with emphasis on current management problems.

4523* Wildlife Management Techniques. Prerequisite: 4513. ENGL 3323 strongly recommended. The semistructured format includes problem identification, project planning and design, land use surveys and mapping, wildlife populations and habitat analysis, data interpretation, development of project area research and management recommendations, and report preparation and presentation.

4532* Zoo Biology. Lab 3/day. Prerequisite: 4 hours of zoology or biology. An extension course taught at the Oklahoma City Zoo. Conservation of endangered species, animal acquisition and transport, restraint, sani-tation and animal health, behavior, exhibit planning and architecture, zoo administration and research potential. Students undertake a research project in exhibit design. Lecturers include professional staff members of the Oklahoma City Zoo and guest speakers.

4700 Undergraduate Research Problems. 1-4 credits maximum 4. Prerequisite: consent of instructor. Participation in faculty research or execution of a problem formulated by the student.

4750 Honors Study in Zoology. 1-5 credits, maximum 5. Prerequisites: 90 credit hours, GPA of 3.00 in 16 or more hours in zoological courses, consent of department head and proposed supervising instructor. Individual study in the development of zoological concepts. Extensive reading, literature search and special experimentation. An individual problems course for the gifted student.

5000* Research for Master's Thesis. 1-6 credits, maximum 6. Prerequisite: approval of major adviser. Independent research for the M.S. thesis under the supervision of graduate faculty member.

5010* Graduate Seminar. 1-3 credits, maximum 10. Prerequisite: consent of instructor. Discussion of selected topics.

5020* Special Problems. 1-4 credits, maximum 10. Prerequisites: graduate standing and consent of department head. Supervised independent work in the department laboratories. Attendance at seminar on problems involved in teaching zoology in college.

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Zoology (ZOOL)

2104 Human Anatomy. Prerequisite: BISC 1603. Gross anatomy of the human body and its systems based on comparisons with nonhuman mammals dissected in the laboratory, with minor emphasis on embryology and histology.

2513 Introduction to Wildlife Conservation. Prerequisites: BISC 1114 or 1303. The profession of wildlife conservation; the interdisciplinary nature of wildlife conservation is emphasized by lectures, guest speakers, films, and slide presentations.

3013* Biological Microtechnique. Lab 3. Prerequisite: BISC 1403 or 1603. Techniques for preparation of biological materials for microscopic examination, same course as BOT 3013.

3104* Invertebrate Zoology. Lab 4. Prerequisite: BISC 1603. Morphology, physiology, reproduction and ecology of major invertebrate groups.

3115* Vertebrate Morphology. Lab 6. Prerequisite: BISC 1603. Comparative gross anatomy of representative vertebrates with consideration given to embryology, histology and evolution.
5103* Developmental Biology. Prerequisite: BISC 3014 or equivalent. The molecular basis of developmental events. Cell division, interaction, differentiation, migration, and death as developmental mechanisms. Developmental aspects of carcinogenesis and teratology.

5110* Problems in Physiology. 1.5 credits, maximum 20. Prerequisite: consent of instructor. Investigations in physiology for graduate and advanced undergraduate students. Same course as PHSI 5110.

5113* Ethology. Lab 3. Prerequisite: consent of instructor. The development of ethological principles and their use in analyzing the organization, function and causation of vertebrate behavior and the use of behavior in clarifying evolutionary relationships.

5123* Behavioral Ecology. Prerequisite: BISC 3034 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.

5133* Evolutionary Ecology. Lab 2. Prerequisite: BISC 3034. Evolutionary concepts dealing with contemporary evolutionary processes, not phylogeny. Life history traits, R and K selection, sociality, kin and group selection, speciation, competition, predation, plant-animal co-evolution, niche theory, species diversity and biogeography. General models and mechanisms, with examples drawn from all kingdoms.

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 computer 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 BIOCH 3653. Comparison of circulation, digestion, excretion, and sensory systems of vertebrates and invertebrates. Same course as PHSI 5213.

5223* Membrane Biophysics and Bioenergetics. Prerequisites: PHYS 1214, and BISC 3014 or BIOCH 4113 or CHEM 3354 or PHYS 3313. Application of biophysical, biochemical and biological techniques to the study of the structure and function of membranes and membrane components and their measurement, spectroscopic techniques and diffractive techniques. Application of these illustrated with current research problems. Same course as PHYS 5233.

5314* In Situ Toxicology. Lab 6. Prerequisites: BIOCH 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: BIOCH 3653 and consent of instructor. Integration of major processes involved with transport, exposure and response of biological systems to xenobiotics.

5424* Analysis of Environmental Contaminants. Lab 6. Prerequisites: organic chemistry and graduate standing. Physical 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* Wildlife Pollution Ecology. Lab 6. Prerequisite: 4434 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 40 and semi-quantitative and systems, and related processes. Natural regulation of numbers emphasized.

5553* Wildlife Nutritional Ecology. Prerequisite: 4523. Biochemical principles for application in solving wildlife and fisheries management problems. Importance of nutrition in regulating wild animal 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. Prerequisites: 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, adaptation and management problems associated with such habitats.

5583* Wetland Wildlife Ecology. Lab 3. Prerequisite: 4513 or consent of instructor. Ecology of 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. Ecology of various types of wildlife, with emphasis on the management problems for wildlife diversity and populations. Options for wildlife conservation, from strict nature reserves to integrating wildlife habitat management into land use practices. Field trip required.

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 physiology of 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.

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