

College of Arts and Sciences

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The College of Arts and Sciences not only offers a wide variety of programs in teaching, research and extension, but also supports and reinforces all the other programs of the University.

Apart from strong programs in the natural and social sciences and in the liberal and fine arts, the College provides a number of more specialized and interdisciplinary strengths, and a variety of professional and preprofessional training. The College's 22 departments and two schools offer 45 degree programs at the bachelor's level, and in conjunction with the Graduate College, 22 master's and 12 doctoral degrees.

The Department of Economics and Legal Studies in the College of Business Administration offers B.A. and B.S. degrees through the College of Arts and Sciences. The Department of Biochemistry and Molecular Biology in the College of Agricultural Sciences and Natural Resources also offers the B.S. through the College of Arts and Sciences.

The College of Arts and Sciences provides academic preparation for a wide variety of professions including: law, medicine, social work, nursing, optometry, veterinary medicine, graphic arts, teaching, writing, foreign service, urban and regional planning, journalism, public service, radio/TV, advertising, public relations, medical technology, military science, public affairs, corrections, child services, and fine and performing arts.

Accreditation

Refer to departmental listings that follow for information on accreditation of specific programs.

High School Preparation

In addition to the curricular requirements for admission specified by the Oklahoma State Regents for Higher Education, The College of Arts and Sciences *strongly recommends* that high school students have a fourth year of mathematics; a third year of laboratory science; at least two years of foreign language; one year of arts such as music, theater, or studio art, and computer literacy.

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 or access the College Internet site for a list of available scholarships. Arts and Sciences students are also encouraged to apply for the variety of scholarships available through the University's Office of Scholarships and Financial Aid.

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 advise freshman, undecided and pre-health profession students. Departmental advisers provide advising for students who have declared their majors.



The Student Academic Services staff also represent the College in the University's on-campus recruiting activities and represent 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 general education program in the College of Arts and Sciences allows freshmen who enroll without having decided on a major to make progress toward most degrees for up to four semesters, while exploring possible fields of study with an academic counselor.

The responsibility for satisfying all requirements for a degree, and for ensuring that a degree plan has been submitted, rests with the student. Advisers assist students in curriculum planning, and students are encouraged to consult fully with their advisers and not restrict their visits to the enrollment periods when only brief meetings may be possible.

Academic Programs

Undergraduate Programs. Requirements for all degree programs and options are detailed in *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.):

- American studies
- art
- economics
- English
- French
- geography
- German
- history
- journalism and broadcasting
- mathematics
- music
- philosophy
- political science
- psychology
- Russian language and literature
- sociology
- Spanish
- theater

Bachelor of Science (B.S.):

biochemistry
biological sciences
botany
cell and molecular biology
chemistry
communication sciences and disorders
computer science
economics
geography
geology
journalism and broadcasting
mathematics
medical technology
microbiology
physics
physiology
political science
psychology
sociology
statistics
wildlife and fisheries ecology
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, clearly headed "second degree," and showing how *all* the requirements of the second degree are to be satisfied. The plan should also state the major, date of award and total credit hours of the first degree, and indicate those courses which represent the minimum of 30 additional hours. The second degree plan should be sent to the College of Arts and Sciences Office of Student Academic Services within two weeks after the student's last enrollment.

Students wishing to complete degrees in two different colleges at OSU should consult with each office of student academic services. 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. A student majoring in one field may also complete the specified requirements for a "major" or a "minor" in other fields, the additional majors or minors may be noted on the

student's transcript. Such specified requirements may be obtained from the department in which the second major or minor is sought, or from the Office of Student Academic Services. During the semester in which the student is enrolled in courses that will complete the second major or minor the student should ask the adviser in the second major or minor to submit certification of completion of the required courses to the department head and then to the Office of Student Academic Services in the College of Arts and Sciences.

Graduate Programs. Twenty-three master's degrees are offered in the College along with fourteen doctoral degrees. For details, see the departmental entries that follow or consult the "Graduate College" section in the *Catalog*.

Special Academic Programs

The Honors College. The College of Arts and Sciences has offered honors courses since the 1960s and has the greatest participation in The Honors College at Oklahoma State University in terms of both students and faculty. The Honors College 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 College 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 College awards are available to A&S students—the General Honors award, the Departmental Honors award in the student's major field, and The Honors College degree (which is earned by completing both General and Departmental Honors requirements with a minimum of 39 honors hours with 3.50 OSU and cumulative grade-point averages). These awards are reflected on the student's transcript, and a special honors diploma is awarded to students completing the requirements for The Honors College degree.

Early enrollment is provided for students who are active in The Honors College. 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 Honors College as a first-semester freshman is based on an ACT composite score of 27 or higher (or comparable SAT score) with a high school grade-point average of 3.75 or higher. Later entry for students with seven or more credit hours is permitted on the basis of OSU and cumulative grade-point averages. Transfer students with seven or more credit hours are eligible on the basis of cumulative grade-point average.

Bachelor of University Studies (B.U.S.).

The B.U.S. in the College of Arts and Sciences allows outstanding students with unique educational objectives that cannot be fulfilled by any of the regular degree programs to design an individual plan of study fitted to the student's particular needs. B.U.S. plans must be approved by a faculty committee, the Office of the Dean of the College of Arts and Sciences, and the Office of the Executive Vice-President. At least 45 semester hours must be completed after the plan has been approved.

Area Studies Certificates. Area Studies Certificates allow OSU students to pursue their cross-disciplinary interests and receive recognition for their efforts. An Area Studies Certificate is granted upon successful completion of all requirements for an OSU bachelor's degree in addition to the specific requirements for the certificate. An Area Studies certificate is the equivalent of an interdisciplinary "minor." Certificates are offered in African-American, Ancient and Medieval, Asian, Central Asian, Latin American, Native American, Russian and Eastern European, and Women's Studies. Each certificate has unique requirements as described below. Further information on these certificate programs may be obtained from the Office of Arts and Sciences Student Academic Services, 202 Life Science East or on the Internet (www.cas.okstate.edu/SAS/degree/enrich/).

The *African-American Studies Certificate* is an interdisciplinary program designed for students who would like to explore African-American issues and is designed to enhance the development of a multicultural orientation for the student. Courses are taught in many areas of study including anthropology, English, geography, history, political science, psychology, religious studies, and sociology. A certificate in African-American Studies helps focus interest for graduate

and professional careers. Business, education, management, law and government are but a few of the career areas where one might find benefit from undergraduate work in African-American Studies. To qualify for the African-American Studies Certificate, the student must complete a minimum of 18 semester hours of African-American related course work, as listed on the program sheet or recommended by the African-American Studies coordinator.

The *Ancient and Medieval Studies Certificate* is an interdisciplinary program designed for students who would like to explore the Ancient and Medieval. The certificate allows the student to take courses offered by various departments in order to develop a competency in Ancient and Medieval Studies. Of special note is the emphasis placed on foreign language skills as a means of opening up the texts, sources, and traditions of these formative periods of Western Culture. Students are required to achieve language mastery equivalent to the first semester sophomore level in Greek, Latin, or Anglo-Saxon. To qualify for an Ancient and Medieval Studies Certificate, the student must complete a minimum of 23 hours of course work including the aforementioned language competency and 18 hours of non-language courses related to the ancient and medieval civilizations, as listed on the program sheet or recommended by the Ancient and Medieval Studies coordinator.

The *Asian Studies Certificate* is an interdisciplinary program designed for students who would like to explore Asian Studies. The certificate offers the student a supplemental, specialized course of study in Asian cultures through language, history, art, philosophy, literature, religion, political science, and anthropology. It is designed to foster interdisciplinary study of Asia as a complement to one's major. Of special note is the emphasis placed on foreign language skills as a means of opening up the texts, sources, and traditions of Asian cultures. Candidates are encouraged to participate in a study abroad program in order to experience the culture and to perfect language skills. To qualify for an Asian Studies Certificate, the student must complete a minimum of 24 hours of course work including the aforementioned language competency and 18 hours of non-language courses related to Asian Studies, as listed on the program sheet or recommended by the Asian Studies coordinator.

The *Central Asian Studies Certificate* is an interdisciplinary program designed for students who would like to explore Central Asian Studies and allows the student to take courses offered by various departments, including Economics, Foreign

Languages and Literatures, Geography, History, Political Science, and Religious Studies. Of special note is the emphasis placed on foreign language skills as a means of opening up the texts, sources, and traditions of Central Asian culture. Students will be required to achieve language mastery equivalent to the first semester sophomore level in Russian or another language approved by the Central Asian Studies coordinator. To qualify for a Central Asian Studies Certificate, the student must complete a minimum of 23 hours of course work including the aforementioned language competency and 18 hours of non-language course work related to Central Asian Studies, as listed on the program sheet or recommended by the Central Asian Studies coordinator.

The *Latin American Studies Certificate* is an interdisciplinary program designed for students who would like to explore Latin American Studies and allows the student to take courses offered by various departments such as Foreign Language and Literatures, Geography, History, and Political Science. Of special note is the emphasis placed on foreign language skills as a means of opening up the texts, sources, and traditions of Latin American culture. Students will be required to achieve language mastery equivalent to the first semester sophomore level in Spanish or equivalent competency in Spanish or Portuguese. Candidates are encouraged to participate in a study abroad program in order to experience the culture and to perfect language skills. To qualify for a Latin American Studies Certificate, the student must complete a minimum of 24 hours of course work including the aforementioned language competency and 18 hours of non-language courses related to Latin American Studies, as listed on the program sheet or recommended by the Latin American Studies coordinator.

The *Native American Studies Certificate* program enables the student to develop an expertise in Native American Studies and is designed to enhance the development of a multicultural orientation for the student. Specialization in Native American Studies contributes to the academic preparation of individuals who plan to work in areas related to American Indian as well as non-Indian communities and programs, such as public administration, business administration, teaching, and social services. The certificate program also provides a basic background for students who plan graduate study or research in Native American topics. To qualify for a Native American Studies Certificate, the student must successfully complete a minimum of 18 credit hours of courses related to Native American Studies, as listed on the program sheet or

recommended by the Native American Studies coordinator.

The *Russian and Eastern European Studies Certificate* is an interdisciplinary program designed for students who would like to explore Russian and Eastern European Studies and allows the student to take courses offered by various departments such as Foreign Languages and Literatures, History, Geography, Political Science, and Economics. Of special note is the emphasis placed on foreign language skills as a means of opening up the texts, sources, and traditions of Russian and Eastern European culture. Students will be required to achieve language mastery equivalent to the first semester sophomore level in Russian. To qualify for a Russian and Eastern European Studies Certificate, the student must complete a minimum of 23 hours of course work including the aforementioned language competency and 18 hours of non-language course work related to Russian and Eastern European Studies, as listed on the program sheet or recommended by the Russian and Eastern European Studies coordinator.

The *Women's Studies Certificate* is an interdisciplinary program designed for students who would like to explore women's issues. Courses focus on the interface of public and private spheres of women's lives and on issues such as gender, theories of inequality, women's language, race and ethnic perspectives on women. Courses are taught in many areas of study including education, English, history, philosophy, political science, psychology, and sociology. A Women's Studies Certificate is helpful in focusing interest for graduate and professional careers. Counseling, social service, journalism, business, political science, and human environmental science are but a few of the career areas where one might benefit from undergraduate work in Women's Studies. To qualify for a Women's Studies Certificate, the student must complete a minimum of 18 hours of course work related to Women's Studies, as listed on the program sheet or recommended by the Women's Studies coordinator.

Geographic Information Systems Certificate. The Geographic Information Systems (GIS) certificate provides a specialized course of study for interested students. The flexible program provides students with a theoretical and applied foundation concerning the rapidly growing field of GIS. The program is open to any student at Oklahoma State University. For more information, contact the GIS Certificate coordinator in the Department of Geography, 225 Scott Hall.

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 Student Services and Professional Education, 325 Willard Hall, 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 minimum semester credit hours required for graduation. If 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-dentistry, and Pre-veterinary Medicine.*

The preprofessional curricula for physicians, dentists, podiatrists, optometrists and veterinarians have the same basic core because they must prepare students for professional schools whose admission requirements are almost identical. These include a strong foundation in math, chemistry, physics, and biology, the disciplines on which major advances in the health field depend. Included also are courses to develop written and spoken communication skills, which are highly important for a good relationship with patients, the public and other professionals.

Beyond this required core, preprofessional students may choose courses and a major as freely as any other students in the College of Arts and Sciences. Most students concentrate on some aspect of biology or chemistry, but other subject areas are not only acceptable but welcomed. Medical schools encourage study in the social sciences and humanities that contributes to the understanding of human beings in their entirety—their history and environment, their attitudes and values, their emotions, motivations, interpersonal relationships and cultural heritage. All of these may affect sickness and health.

Although most students entering a professional school in one of the above fields have a bachelor's degree, it is possible to apply for admission after three years of college work (two years for a few dental and veterinary schools).

OSU permits preprofessional (health-related) students to choose between two alternative bachelor's degree programs: (1) in a specific discipline that requires a minimum of 127 semester credit hours at OSU, or (2) a biomedical sciences 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 available on the Internet and in the Office of Student Academic Services. The OSU premedical and pre-veterinary course requirements are listed in the "College of Veterinary Medicine" and "College of Osteopathic Medicine" sections 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 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 four years) be completed elsewhere in a professional school. The College of Arts and Sciences offers the general education and basic science courses that a student 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 counselor-coordinator of health professions advising for information regarding the specific requirements of particular programs and schools.

Medical Technology: See "Department of Microbiology and Molecular Genetics."

Pre-law Preparation. Law schools have no single preference for a specific undergraduate major. Admission to law school is primarily based on 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; letters of recommendation; work and leadership experiences; and applicant's background and motivation as revealed in an application essay.

Law school admissions officers most frequently recommend that students include in their undergraduate programs courses in economics, literature, languages, psychology, history, government, mathematics, logic, philosophy, accounting and speech. Courses in these areas are especially helpful in developing the verbal and analytical abilities that are particularly critical for success in law school.

Personal assistance in selecting an academic major, planning a solid pre-law curriculum, preparing and registering for the Law School Admissions Test, and applying to law school, is available through the pre-law adviser in the Office of Student Academic Services.

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 all 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, 1483 or 1493, and POLS 1113. *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 with permission of their departments.

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 all degrees. For the B.S., nine additional hours of natural or mathematical sciences are required, as well as three additional hours from the arts and humanities. For the B.A., nine additional hours of arts and humanities 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. The foreign language requirement for the B.A. and B.F.A. in Arts and Sciences may be satisfied by 10 hours of college credit in the same language, or equivalent proficiency (e.g., passing an advanced standing exam or completing a second-year or higher college-level course in the language; etc.). FREN and GRMN 3013, 3023, FREN and SPAN 4113, RUSS 3003, 3053, 3123, 4113, and 4223 do not satisfy this requirement.

The foreign language requirement for the B.S. and B.M. degrees may be met by presenting a high school transcript that demonstrates successful completion of two years of study in a single foreign language. It may also be satisfied by any of the options listed above for the B.A.

The foreign language requirement for the Bachelor of University Studies degree will be determined based on the student's objective, but will be the requirement for either the B.A. or B.S.

Non-Western Requirement (B.A. and B.F.A. only). One three-hour course in Non-Western studies from: A&S 3603 (African or Asian studies); ART 3693, 4603, 4633, 4653, 4663, 4673; ECON 4643; ENGL 3173; FLL 3500, 3503; GEOG 3753, 3763, 3783; HIST 1713, 3013, 3053, 3203, 3403, 3413, 3423, 3433, 3503, 3513, 3523, 3543, 3553, 3980; JAPN 2115, 2123, 2223; MUSI 3583; PHIL 3943; POLS 3053, 3223, 3313; REL 3613, 4113; RUSS 3053.

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 the Office of Arts and Sciences Student Academic Services or at the website of the Office of the Executive Vice President.

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 the Office of Arts and Sciences Student Academic Services or at the website of the Office of the Executive Vice President.

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.

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 48 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 48 semester credit hours in one subject, including both lower-division and upper-division credit, the hours in excess of 48 will be added to the minimum total of 127 hours required by the College for a bachelor's degree.

This "48 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 an Arts and Sciences degree is 120. 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 120 hour minimum. 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 120 (see degree sheet). Hours of "F" or "I," or in repeated courses (unless allowed in course descriptions in the *Catalog*), do not apply. ENGL 0123, MATH 0123, and all athletic participation and leisure activity courses 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 Registrar by the instructor who gave the "I."
2. **Grade-point average.** See individual degree sheets for all grade-point minima: overall, in major prefix courses, and in major requirements.
3. **Validity of credits.**
 - a. No more than two courses in any one subject may be used to satisfy General Education and College requirements in the same breadth area. However, eight hours in biology may substitute for two courses and three one-hour music courses may substitute for one three-hour course.
 - 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

Advertising Club
Alpha Epsilon Delta (premedical honor society)
Alpha Epsilon Rho (broadcasting)
Alpha Kappa Delta (sociology)
American Association of Petroleum Geologists
American Choral Directors Association
American Fisheries Society, Oklahoma Student Chapter
American Medical Student Association
Arnold Air Society
Army Blades
Art History Club
Arts & Sciences Student Council
Association for Computing Machinery
Association for Women in Communication
Astronomy Club
Biochemistry Club
Botanical Society
Creative Writers Association
Delta Nu Alpha, Order of Biochemistry
Dobro Slovo (Slavic languages)
ECO-OSU
Economics Club
English Club
English Graduate Student Association
French Club
Friends of the Forms (philosophy)
Gamma Theta Upsilon (geography)
Geography Club
Geological Society
German Club
History Undergraduate Club
Japanese Club
Kappa Kappa Psi (band honor society)
Kappa Tau Alpha (mass communications)
Math Club
Microbiology Club
Music Business Students Association
Music Educators National Conference
Mu Sigma Rho (statistics honor society)
Omicron Delta Epsilon (economics)
OSU Artisans (art club)
OSU Math Club

OSU National Student Speech-Language-Hearing Association
Paleontology Club
Pershing Rifles (military science) affiliated with ROTC but open to any student on campus
Phi Alpha Delta (prelaw)
Phi Alpha Theta (history honor society)
Phi Lambda Upsilon (chemistry honor society)
Phi Mu Alpha (music)
Pi Mu Epsilon (mathematics honor society)
Pi Sigma Alpha (political science honor society)
Political Science Club
Psi Chi (psychology honor society)
Psychology Club
Psychology Graduate Student Association
Public Relations Student Society of America
Ranger Company (military science)
Russian Club
Scabbard & Blade (military science)
Sigma Alpha Iota (music)
Sigma Delta Chi Society of Professional Journalists (journalism)
Sigma Delta Pi (Spanish honor society)
Sigma Pi Sigma /Society of Physics Students
Sigma Tau Delta (English honor society)
Silver Wings
Society of Physics Students
Society for Technical Communication
Sociology Club
Spanish Club
Speech Communication Organization
Statistics Club
Students in Design
Tau Beta Sigma (band honor society)
Wildlife Society, Student Chapter

American Studies

Director Bruce C. Crauder, Ph.D.

American studies offers systematic, theoretical and practical exposure to understanding American society and culture through multidisciplinary study. "American society" refers to the geographic region of the United States, from pre-colonial times to the contemporary period. Students gain a thorough understanding of culture—that shared system

of beliefs, behaviors, symbols, and material objects through which Americans give meaning to their lives, while gaining a rich understanding of social and cultural practices and beliefs that may differ from their own. In addition to emphasizing liberal arts education, training in the major develops skill in writing and analysis and helps students recognize connections among complex materials and diverse phenomena. The best preparation for the program is to complete challenging high school courses that emphasize cultural awareness, critical thinking and writing.

Program Curriculum. The American studies major is designed for students interested in bridging perspectives from several disciplines within integrated study. The program combines structure with latitude in course selection. In addition to two required courses in American studies, students gain a foundation in American literature and history. Additional courses are selected in the fine arts and humanities and social sciences to develop a plan of study tailored to meet specific goals and interests. For more information, contact Arts and Sciences Student Services.

Art

Professor and Head Nick Bormann, M.F.A.

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 studio art and art history.

Two degrees are offered in art: Bachelor of Art (B.A.) with options in art history and studio art, that can be combined with teacher certification; 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 illustration, ceramics, jewelry/metalsmithing, sculpture and art history.

Art majors must attain a grade-point average of 2.50 in art courses in order to qualify for licensure and graduation.

Students wishing to major in graphic design must have a minimum overall GPA of 2.5 to enroll in 2000 level graphic design courses. Three 2000 level courses are prerequisite for a portfolio review scheduled for the latter portion of each spring semester. Students wishing to transfer into the graphic design program with earned credit in these courses are subject to the same review and must

submit portfolio materials with application for admission into the program no later than April 15. This portfolio review determines those students qualified to proceed to 3000 level graphic design courses.

Because of a large endowment, the department is able to offer substantial scholarships at all levels, freshman through senior.

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.

Biochemistry and Molecular Biology

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. Major discoveries concerning the biochemistry of genetic material provide the tools of molecular biology that are essential to contemporary life sciences research.

Biochemists and molecular biologists 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 and molecular biologists 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 and molecular biology administered by the Department of Biochemistry and Molecular Biology is available through the College of Agricultural Sciences and Natural Resources. The department also offers a B.S. degree in biochemistry through 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 and molecular biology 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 and Molecular Biology is concerned with its graduate program leading to the M.S. or Ph.D. degree. This graduate program is an integral part of extensive basic research activities in the Oklahoma Agricultural Experiment Station. These research activities provide opportunities for part-time employment of undergraduate majors to improve their professional competence.

Prerequisites. Although the B.S. in chemistry or biochemistry is preferred, students with strong backgrounds in other biological or physical science disciplines are eligible. Individuals not having at least eight semester credit hours in each of organic chemistry and calculus plus analytical and physical chemistry must take appropriate undergraduate courses to make up deficiencies. The results of the three general GRE exams (verbal, quantitative, analytical) are required for entrance. An advanced GRE subject matter exam (biochemistry, chemistry or biology) is also recommended. A cumulative GRE score of 1500 is normally required.

Degree Requirements. A more detailed description of the graduate study program in biochemistry is available from the department upon request. The requirements listed below complement the general graduate requirements described in the "Graduate College" section of the *Catalog*. After the first semester, continuous attendance and participation in the departmental seminar is expected.

The Master of Science Degree. Twenty-four credit hours of formal graduate courses are required, including BIOC 5753, 5824, 5853, and 5930. In addition, a student must present an acceptable research thesis (six hours) and pass a final oral examination covering it and related material. Research advisers are selected at the end of the first semester.

A non-thesis Master of Science degree is also available. It does not require a research thesis, but requires a report and extensive technical training in the laboratory. The non-thesis M.S. is not recommended for students wishing to pursue a Ph.D. program later.

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 during 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.

Botany

Professor and Head Becky Johnson, Ph.D.

Botany is the science concerned with all facets of plant life. Green plants are the constantly renewable source of food, fiber and phytochemicals. It is important that these plants 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, the 160-acre McPherson Preserve, and an herbarium with over 125,000 plant specimens. Faculty members teach and do research in their specialty areas of botany: plant ecology, physiology, taxonomy, anatomy, developmental genetics, algal ecology, and molecular biology.

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 plant cell biology, ecology, physiology, taxonomy, population biology, genetics and development, and biotechnology-related areas such as tissue culture.

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 anatomy, plant pathology or microbiology, plant physiology; genetics and ecology. Chemistry through organic and mathematics through trigonometry 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.

Degree Requirements. A potential graduate student may be required to take one or more advisory examinations cov-

ering 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 botany 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.

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 in Plant Science. The Department of Botany is one of seven departments participating in the multidisciplinary Ph.D. in plant science program. Students in this program have great flexibility in research and course work. The student who chooses botany as a home department has a botany faculty adviser from within the department, and will take BOT 6000 research hours in the department. To receive the Ph.D. in plant science, students must enroll in a total of 90 credit hours beyond the B.S. or 60 credit hours beyond the M.S. No fewer than 36 nor more than 60 hours of BOT 6000 are allowed in the plan of study. Two hours of seminar (BOT 5850) must also be included in the plan of study. Students may choose as a specialization area either cellular and molecular, organismal, or ecological plant science. After a Ph.D. candidate has completed most of the course work, qualifying examinations are scheduled. These exams cover major areas of the student's plan of study; all relevant subdivisions of plant science are included. The examinations are both written and oral.

Chemistry

Professor and Head Neil Purdie, Ph.D.

Chemistry is the science that deals with the composition, structure and inter-

actions of matter of all kinds. Materials obtained from the earth, such as ores, petroleum and natural gas, as well as those from plants and animals, such as food, fibers and antibiotics, are all studied and modified through chemical means. The chemist creates from natural products new and useful substances that add to the enjoyment of life. He or she creates new agents to combat pests that destroy great portions of food supplies and new drugs to fight diseases of many kinds. Chemists lead the fight against pollution of the environment that results from rapid multiplication of population and of use of energy. Chemists are at the forefront of the search for new energy sources and for ways to better use existing sources of energy.

A great curiosity concerning the physical world should be characteristic of one who is considering chemistry as a profession. The student should want to learn more about the changes of materials and to use his or her knowledge for the betterment of life. The student should have an interest in physics and mathematics, since those subjects' principles are basic to the study of chemistry.

Chemists are employed by most large companies in this country, especially those that produce foods, medicines, fuels and materials. These chemists work in the areas of research, sales and quality control. Many chemists become teachers in public schools or colleges. State and federal agencies employ chemists for research and analysis. Generally an M.S. or Ph.D. degree is desirable for those interested in research or college teaching.

The Department of Chemistry offers two bachelor's degrees: (1) a B.S. degree that is accredited by the American Chemical Society; and (2) a B.S. degree that requires less specialization.

The chemical laboratories are modern and well-equipped with instruments for determination of properties of chemicals and studies of reactions. Individual laboratory work is encouraged.

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 admission officer. Acceptance by a permanent adviser is not a prerequisite to admission to the program.

Degree Requirements. A more detailed description of the graduate 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, inorganic, organic or physical chemistry. A major in biological chemistry is offered by the Department of Biochemistry. The student must pass a qualifying examination in the student's field of specialization.

An acceptable dissertation must be presented which contains a substantial original contribution to the field of chemistry. The student must pass a final oral examination covering the dissertation 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.

The course requirements are determined by an advisory committee which is appointed for each student.

Communication Sciences and Disorders

Associate Professor and Head Arthur L. Pentz, Jr., Ph.D.

The Department of Communication Sciences and Disorders 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 emphasizes the study of the development and functioning of the individual who presents normal speech, language and hearing. It also stresses academic course work and clinical observation experiences in the nature, symptoms and treatment of those with various kinds of communication disorders. Acceptance into the undergraduate program is considered on a grade-point average for 36 or more hours attempted.

The master's program is designed to provide students with intensive course work in the various communication disorders and a wide variety of challenging clinical activities. These include off-campus clinical practica which serve as an excellent transition from on-campus practicum to an actual professional position after graduation. Students who graduate from this program are prepared to take positions in public schools, hospitals, community speech and hearing centers, private practices and other related settings, or pursue additional graduate education at the Ph.D. level. All graduates meet the academic and practicum requirements for the Certificate of Clinical Competence in Speech-Language Pathology from the American Speech-Language-Hearing Association. In addition, most students elect to earn the state teaching certificate. The program is nationally accredited in speech-language pathology by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.

Graduate Programs

Prerequisites. Other than the general requirements of the Graduate College, no other prerequisites are required for application to the graduate program. The amount of course work taken at the undergraduate level in communication

sciences and disorders and related areas will determine the amount of time required for the degree. Students holding undergraduate degrees in other fields are encouraged to apply for admission. Undergraduate prerequisites will add approximately 37 credit hours to the program.

Admission Requirements. Applicants should have a minimum 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. Interviews are conducted prior to admission. Students with a baccalaureate degree are required to be admitted to a graduate degree program to take course work in this department. Admission is competitive and varies according to the number of places available in the program. Application deadlines can be obtained from the department.

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 60 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. The International Student Services Office is available on campus to assist international students.

Financial Aid. All students are eligible to apply for graduate assistantships and fee waiver scholarships. Graduate assistantships qualify out-of-state students and international students for in-state tuition.

Program Requirements. The program leading to the Master of Arts provides a thorough exposure to the nature and causes of communication disorders and to clinical procedures. Clinical training occurs in the OSU Speech-Language-Hearing Clinic and in off-campus facilities including clinics, schools, adult day care and residential programs, and in acute care and rehabilitation hospitals. Research and independent study opportunities are also available.

The degree consists of a minimum of 28-30 semester credit hours in courses that examine the nature, causes, assessment, and treatment of communication disorders and related areas, and a minimum of nine semester credit hours in clinical practicum courses. All students enroll in a core curriculum of 29 hours including practicum. To complete degree requirements, students may then choose from several courses that provide additional study in particular clinical areas.

Examinations. Students may complete a master's thesis or pass a comprehensive examination and complete a portfolio.

Computer Science

**Regents Service 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 and computer networks. 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 offers the full range of degree programs—B.S., M.S. and Ph.D. The B.S. and M.S. programs are available in both Stillwater and Tulsa.

Most B.S. and M.S. graduates obtain positions in industry. Approximately half of the Ph.D. graduates take university teaching and research positions and half are employed in industry.

The Department of Computer Science has a Sun Microsystems Enterprise 3000 as its primary computing resource. There is a lab for graduate students with color X-terminals available. There is also a special projects room for graduate students.

Computers can be accessed through the Computing and Information Services Network. There are a number of personal computer labs located in various buildings on campus. Some of the residence halls have personal computer labs available. All of these labs have access to personal computer application software and all mainframe computers on campus, as well as Internet access. Both

University and department computers can be accessed 24 hours a day.

Graduate Programs

The department offers degree programs leading to the Master of Science degree, and to the Doctor of Philosophy degree. These programs are designed to prepare an individual to pursue a career in either an academic or an industrial setting. In addition to taking a prescribed set of core courses, a student must take sufficient courses in one specialized area. In addition to course work, a student must complete a thesis for an M.S. degree. A student must complete a dissertation in addition to course work 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 and a comprehensive course work examination. There is no foreign language requirement for the M.S.

For the 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. Ph.D. students must pass (at an appropriate level) written preliminary examinations in areas of specialization. In general, both academic and industrial positions exist for each Ph.D. graduate.

The candidate's baccalaureate degree need not be in computer science in order to enter the M.S. program. Students with degrees in other areas may be admitted provisionally and required to take specified prerequisite courses.

Economics and Legal Studies in Business

**Professor and Head Keith D. Willett,
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 an international economic relations option is offered. An economics degree 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 through the College of Business Administration 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 with superior academic records whose preparation has been broad and thorough. They need not have majored in economics as undergraduates but must be well grounded in economic fundamentals. A good background in one or more such fields as history, philosophy, mathematics, statistics, political science, English, sociology, accounting, finance, psychology, or management is particularly helpful to the graduate student in economics. An applicant whose prior preparation is deficient in some respect, may, if otherwise qualified, be admitted to the program but will be required to remove the deficiency, increasing somewhat the time needed to complete work for the degree.

Each graduate student is guided in the preparation of a program of study by a graduate studies committee. At the master's level there are two options. One option provides the student with a well-rounded program that avoids premature specialization in some particular area of economics. The candidate for the master's degree is required to show competence in basic economic theory and statistical methods, together with an understanding of the fundamental institutional operations of the United States economy. The second option is in applied economics which stresses communication skills, quantitative analysis and course work from other disciplines related to their career objectives.

Each program contains enough electives to permit considerable choice among areas of emphasis. A research report or thesis is required of all students who take only the M.S. degree. Those accepted for the Ph.D. program have the option of applying for and receiving the M.S. degree without the research report upon successful completion of the Ph.D. qualifying examination and the filing of an approved Ph.D. thesis topic with the Graduate College. A foreign language is not required.

The Doctor of Philosophy Degree. Admission to the doctoral program in economics is granted to college graduates who have satisfactorily completed at least one year of graduate work in eco-

nomics 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 one field of specialization. (The theory core is not considered a field of specialization.) Competence must be demonstrated in second and third fields of specialization, either through course work or by passing a qualifying examination in each 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.

English

Associate Professor and Head Carol L. Moder, 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.

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, creative writing, film, technical writing, linguistics, teaching English as a second language, and composition and rhetoric. The number of students in any English class rarely exceeds 30; and in a writing class, including freshman-level classes, the enrollment limits range from 18-25. The maximum number of students in a graduate-level class is 10.

An undergraduate English major has five options: a traditional English major, secondary education teaching certification, creative writing, film, 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 study fiction writing, poetry writing, and scriptwriting with practicing, published writers. 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. Other students find 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 ability to think critically.

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 choose to complement their first major with a second major or minor in English.

The Department of English actively participates in the University Honors Program. Students who qualify for Honors are eligible to enroll in restricted courses and to write a Senior Honors Thesis. The department offers Honors courses at all levels, including an Honors seminar on a different topic each year.

A Bachelor of Arts in English requires 42 hours of lower- and upper-division English courses. An English minor requires 18 hours of English, at least nine of which must be upper-division. (These hours do not include Freshman Composition.)

Graduate Programs

The Department of English offers programs leading to the Master of Arts and the Doctor of Philosophy. Masters students may choose among three programs: Master of Arts in English; Master of Arts in technical writing; and Master of Arts in teaching English as a second language (TESL). In consultation with their advisory committees, both masters and doctoral students have considerable flexibility in designing a degree that meets their own interests and professional goals. Students may take courses in creative writing, film, technical writing, composition and rhetoric, TESL, linguistics, literary theory, and all periods of British and American literature. The diversity of choices and the flexibility of the program prepare students to meet the demands of a changing academic marketplace.

Admission Requirements. Students seeking admission to the graduate program in English must be accepted by the Graduate College and by the departmental admission committee. In addition to the application and transcripts required by the Graduate College, students must submit to the Department of English graduate coordinator a statement of purpose; letters of recommendation; and a writing sample *or* the Graduate Record Examination general and subject area scores. Non-native speakers of English must submit scores for both the Test of Written English (TWE) and the TOEFL. For fall admission the early decision deadline is February 15; the final deadline is April 1. The deadline for spring admission is October 15. Prerequisites are listed under each degree below.

Teaching Opportunities. Depending on their levels of experience and areas of emphasis, graduate teaching assistants may tutor in the Writing Center or teach their own sections of freshman composition, composition for international students, technical writing, creative writing, or literature. All teaching assistants are required to take an appropriate pedagogy course during their first year of teaching.

The Master of Arts Degree. The M.A. in English allows students to develop expertise in a variety of areas: British and American literature, creative writing, literary theory and criticism, film, composition and rhetoric, technical writing, linguistics, and TESL. In consultation with their advisory committees, students devise an individualized curriculum that reflects their own intellectual interests and prepares them to enter a doctoral program or to teach at the college level. The degree programs in TESL and technical writing prepare teachers for the

bilingual classroom and technical writers for industry.

Prerequisites include a baccalaureate degree with an English major, or at least 24 hours in English (excluding freshman composition). Successful applicants usually have a minimum grade-point average of 3.00 on a 4.00 scale, particularly in English courses.

The M.A. in English consists of 30 credit hours, including six hours of thesis. In addition to these hours, students must demonstrate reading knowledge of a foreign language, pass the M.A. qualifying examination, and pass an oral defense of the thesis. The thesis is a work of original research prepared with the guidance of the student's advisory committee. Creative writing students may present as their theses original works in poetry, drama (including screenplays), or prose fiction. The programs in technical writing and TESL have separate degree requirements described below.

Technical Writing. The M.A. in English program in technical writing consists of 30 credit hours (with thesis) or 33 credit hours (without thesis). In addition to these hours, students must fulfill the foreign language requirement and pass the M.A. qualifying examination in technical writing. Prerequisites are the same as those above.

TESL. The M.A. in English program in teaching English as a second language is designed to provide students with the skills necessary to teach English to non-native speakers in a variety of situations, e.g., teaching English as a foreign language in an overseas school, college or university; teaching English as a second language to international students studying in intensive English programs in the U.S.; or teaching English to bilingual and bicultural students in American public school systems and adult education programs.

Prerequisites are the same as those above except that the major may be either in English or in a field related to second language acquisition or teaching. In addition, applicants to the TESL program must have six hours in a foreign language with a grade of "B" or better, or must complete this requirement prior to taking the qualifying examination.

The TESL program consists of 30 credit hours (thesis option) or 34 credit hours (nonthesis option). In addition to these hours, students must pass the M.A. qualifying examinations in TESL.

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. Although the completion of TESL does not confer public school

teaching certification, the TESL course work, when combined with selected courses from the College of Education, can lead to the student's obtaining an endorsement in TESL and/or bilingual education to *already-certified teachers*. (For more information, contact the Office of Professional Education in the College of Education and the State Department of Education in Oklahoma City.)

The Doctor of Philosophy Degree. The Department of English grants one doctoral degree, the Ph.D. in English. Students may, however, emphasize in their courses, their exams, and their dissertations a variety of areas: all periods of British and American literature, Native American literature and language, creative writing, literary theory and criticism, film, technical writing, composition and rhetoric, linguistics, and TESL. They may also choose an interdisciplinary emphasis. In consultation with their advisory committees, students devise an individualized curriculum that reflects their own intellectual interests and professional goals.

Prerequisites include a master's degree in English or a field related to the student's area of emphasis. Successful applicants usually have a minimum grade-point average of 3.50 on a 4.00 scale in their master's degrees. All Ph.D. students are admitted provisionally and must take the first-year examination during their first two semesters of enrollment.

The Ph.D. degree consists of 60 credit hours beyond the master's degree. Fifteen to 20 of these hours are devoted to the dissertation. In addition to these hours, students must take a first-year examination; demonstrate reading knowledge of two foreign languages or mastery of one language; pass the Ph.D. qualifying examination in two areas; and pass an oral defense of the dissertation. The dissertation is a work of original research prepared under the direction of the dissertation committee. Creative Writing students may present as their dissertations original works in poetry, drama (including screenplays), or prose fiction.

Additional information and requirements may be found in the *English Graduate Guidelines*, which may be consulted at the Internet site (<http://english.okstate.edu>).

Foreign Languages and Literatures

Professor and Head Perry J. Gethner, 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. First and second-semester Spanish are offered in intensive form in the summer session. Students with previous foreign language experience may take placement tests to find the course best suited for their level of 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, Central Asian, Latin American, Russian and Eastern European Studies and Ancient and Medieval Studies, are available.

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 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.

In addition to the standard courses in language, literature and civilization for individual languages, the department offers literature-in-translation courses for general education, and courses in German for reading knowledge and Russian for reading knowledge.

Geography

Professor and Head Dale Lightfoot, Ph.D.

Geography is a diverse discipline concerned with the surface of the earth and its immediate atmosphere. Geographers study the similarities, the differences and interactions among phenomena in this region. Geographers are interested in the economic, social, political and environmental qualities of places, and in how these attributes interact.

Geographers attempt to understand human behavior by answering such questions as: Where do people work? Where do they play? Where do they live? Why do people make these locational choices? What are the consequences of these decisions and behavior?

Because the physical environment is important in many explanations of spatial behavior and spatial patterns, geographers have traditionally concerned themselves with relationships between humans and their environment. What impact do people have on the land? What impact does the land have on people? How do people perceive their environment? How does this perception influence their activities?

Finally, geographers examine spatial patterns and behaviors in specific regional contexts. These analyses occur at many levels—world-wide, national and local. These kinds of studies lead to suggestions for change and improvement—the application of geography to contemporary rural, urban and regional problems. Thus many aspects of urban, regional and national planning are geographic in nature.

No academic discipline has broader interests than does geography, and the Department of Geography allows students the flexibility to pursue studies that lead to a wide range of educational goals and careers. Students with interests in environment, planning, real estate, economic development, international affairs, travel, remote sensing, geographic information systems, area studies, management or education are among those who 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, geo-

graphic information systems and cartography—tools which facilitate geographic inquiry and 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 manages a simulations laboratory, the Center for Applications of Remote Sensing, a computer mapping facility, spatial database facility, field mapping equipment such as global positioning system receivers, an interactive weather analysis system with satellite data feed, and an ARC-INFO equipped geographic information system laboratory. Three national journals are edited and published by faculty members in the department, the *Journal of Cultural Geography*, *Sport Place*, and the *Journal of Central Asian Studies*.

The department specializes in two areas: cultural and historical geography and resource management/GIS. 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 option in applied resource management is available within the B.S. degree. An advanced program leading to the Master of Science degree is also available. The department also sponsors students in the interdisciplinary M.S. and Ph.D. programs in environmental science.

Certificate in Geographic Information Systems (GIS). The certificate in GIS provides students with broad exposure to principles and applications of GIS. A student who has earned the certificate is well-versed in general GIS theory and has knowledge and/or practical exposure to the following: (1) hardware and software used in GIS, (2) planning and construction of spatial and nonspatial databases, (3) GIS analyses (performed on data related to the student's area of interest), and (4) representation of data in both mapped and tabular form. Requirements for the certificate are designed to parallel skills needed by GIS professionals. Through elective courses, students focus on one of several areas of specialization. Admission into the certificate program is open to anyone enrolled as an undergraduate student, graduate student or special student at OSU. To receive a certificate in GIS, a student must complete 21 hours of course work

in GIS and related topics and hold a bachelor's or more advanced degree from OSU or an accredited college. Students may work toward the certificate while completing their bachelor's or graduate degree.

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 distributions, 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 various 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, and cartography. If a student lacks these prerequisite skills, an additional course in each of these subjects is required.

Two basic plans of study exist for the master's degree. One plan requires a minimum of 30 credit hours including a thesis, the other is a 36-credit-hour non-thesis option. Plans of study can be developed to accommodate many interests. Major faculty interests include resource management, cultural and historical geography, urban and transportation geography, regional analysis and development, and cultural ecology.

School of Geology

Professor and Head Ibrahim Cemen, Ph.D.

Earth is the residence of the human race. It is essential to develop a better understanding of the composition, internal and external processes, that affect the Earth. Earth is an outdoor laboratory filled with opportunities to observe Earth processes in action. By applying

knowledge of forces that shape the Earth, geoscientists seek to reconstruct the past and anticipate the future. Geoscientists provide information to society for solving problems and establishing policy for resource management, environmental protection, and public health, safety and welfare.

Geology is concerned with the processes, the history, and the characteristics of the rocks and sediments that shape the Earth. Human activities, predominantly on or near the surface, have utilized rocks and rock products, 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 (hydrogeology), geomorphology (study of surface processes), structural geology, and paleontology (study of fossils), have developed.

The School of Geology offers traditional academic program services, awards B.S. and M.S. degrees in geology and conducts various outreach programs. Geology majors are provided a quality education designed to develop leadership skills and enhance employment opportunities. The School of Geology has embraced two areas with great potential for growth: sedimentary/petroleum geology and hydrogeology/environmental geology. In both areas, the school has already established a sound infrastructure—appropriate faculty appointments, laboratory and computer upgrades, and a sound record of productivity. Geology undergraduates are eligible for one of at least 10 departmental scholarships available, based on academic achievement and need. Teaching assistantships, research assistantships, and fellowships are available for qualifying geology graduate students.

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, government 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 in a college or uni-

versity 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: two classes in chemistry, two classes in physics, and one biology course. 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 sedimentary/petroleum geology, hydrogeology/environmental geology, paleontology, and structural geology.

Thesis Option—This option is recommended for students planning to continue graduate studies at the doctoral level. 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.

Nonthesis Option—This option is recommended for students who do not plan to continue graduate studies. Each candidate must complete at least 33 semester credit hours of work beyond the prerequisites and three semester hours for the creative component.

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
William S. Bryans, 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 role of time in human

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 programs and in the Women's 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 a field in a related discipline for one field in history. 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 to 1714
 Latin America
 Middle East
 Russia and East Europe
 United States to 1877
 United States since 1877
 Women's history

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 two hours of report (HIST 5000). With the approval of the student's advisory committee, as many as 9 of these hours may be taken in related disciplines.

Plan III—Students must complete a minimum of 36 hours of graduate courses in three fields, at least one in United States history and one in non-United States history. (See "Fields of Study" listed under Plan I.) The 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. 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:
 - Early America to 1787
 - Nineteenth-century United States, 1787-1877
 - Modern United States, 1877-present
 - United States economic
 - United States military
 - United States social and intellectual
 - United States South
 - United States West
3. Two fields from the following:
 - Ancient Mediterranean world
 - Medieval Europe
 - Early modern Europe to 1789
 - Europe since 1789
 - East Asia
 - England to 1714
 - Latin America
 - Middle East
 - Russia and East Europe
 - Women's history

With the consent of the advisory committee, a student may substitute for one of these fields a pertinent field outside history. At least 9 hours of graduate course work in a field outside history would normally be expected.

Students specializing in non-United States history must offer for examination:

- Three fields from the following:
 - Ancient Mediterranean world
 - Medieval Europe
 - Early modern Europe to 1789
 - Europe since 1789
 - East Asia
 - England to 1714
 - Latin America
 - Russia and East Europe
 - Middle East Women's history
- Any field in United States history.
- 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 9 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
Paul Smeyak, Ph.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:

- To provide thorough, broadly-based professional education for the mass-media professions.
- To encourage liberal and cultural background in the arts, literature, languages, and social, biological and physical sciences.
- To promote scholarly research and professional performance.
- To provide media leadership and assistance in extension and public service through high school and college educators and professional communication associations.
- To emphasize high standards of ethics and responsibility in mass communication.

Accreditation

The undergraduate programs of study

in the School of Journalism and Broadcasting are accredited by the Accrediting Council on Education in Journalism and Mass Communication.

Admission to the Undergraduate Program

Any student who elects to major in one of the four journalism options (advertising, broadcast, news-editorial or public relations) should meet with the SJB academic adviser as soon as possible. Admission into the School requires completion of 30 hours with a minimum graduation retention GPA of 2.50. Enrollment in all JB courses except JB 1143, JB 2003 and JB 4253 requires admission into the School and a passing score on the SJB language proficiency exam. The ability to type a minimum of 30 words a minute and either a computer course or computer literacy are also required for enrollment in all writing courses beginning with JB 2003.

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 the 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 that 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 also designed for students who wish to write, sell and produce commercial messages, and to move into management or ownership positions on radio and television stations.

The program is affiliated with the American Association of Advertising Agencies, the Advertising Federation of America and the Point of Purchase Advertising Institute.

News-Editorial

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.

The news-editorial 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.

Students may combine other areas of interest and journalism to prepare for specialized work in technical writing and editing.

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 3263, 3313, 4313, and 4423 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 work in a variety of organizational situations including businesses, public relations agencies and non-profit groups of all types. The work involves a wide variety of activities from planning public relations campaigns and special events to preparing various kinds of communication such as brochures, newsletters, news releases, speeches and annual reports. The purpose of public relations work is to help develop mutual understanding between an organization and the audiences who are important to the success of the organization.

The public relations program of study is designed to provide students with the ability to: (1) write and communicate well,

(2) recognize the public relations implications of real situations and the needs of organizations, (3) understand the public relations process and how to apply it, and (4) understand the characteristics of the mass media and their importance in public relations.

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.

Broadcast Journalism

The hands-on broadcast journalism curriculum prepares students for careers in such performance-based fields as broadcast news and sports reporting and anchoring, while also providing extensive training in such behind-the-scenes jobs as videography, writing, editing and news production, or in advertising sales and station management positions. Optional course work in the broadcast sequence also acquaints students with the basics of executive-level careers in radio and television programming, station promotion, advertising sales and management.

Students learn the basics of audio, video and computer-mediated production on state-of-the-art equipment and are challenged to put those skills to use by participating in the daily operation of cable radio station KXZY and various video productions. Internships at broadcast and cable outlets in the region also provide students with on-the-job experience and a valuable opportunity to work with seasoned media professionals.

The broadcast program is affiliated with the National Association of FM Broadcasters, Radio Advertising Bureau, Oklahoma Association of Broadcasters, Oklahoma Broadcast Education Association, National Association of Broadcasters, 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. The Graduate Record Exam (GRE) is required. 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 before they take graduate courses.

Basic emphasis is on media management, 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

Professor and Head Benny Evans, 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, do research and teach at universities, 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 el-

elementary courses by passing advanced standing examinations. All majors take courses in differential equations, and linear and modern algebra and modern analysis. The remainder of the field of concentration is determined by the student's interests and future plans. Students are encouraged to acquire proficiency in computer programming and to take substantial work in related fields in which they have a special interest.

Undergraduate degree options are available to prepare students for: (1) employment in industry; (2) secondary school mathematics teaching; and, (3) graduate study in mathematics. Students choosing secondary school teaching complete all requirements for state licensure as part of this program.

Many of the more challenging positions in mathematics require study beyond a bachelor's degree. For example, university teaching requires a Ph.D., while 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.

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 programs in the Master of Science degree, 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. Each student must pass a comprehensive exam on the basic graduate courses of his or her program.

The Doctor of Philosophy Degree. Admission to the Ph.D. program is granted only to students with superior records in their previous graduate or undergraduate study. A minimum of 90 semester credit

hours of graduate credit beyond the bachelor's degree is required for the Ph.D. degree. This may include a maximum of 24 hours credit for the thesis. Each student has an individual doctoral committee which advises the student in the formulation of an approved plan of study for the degree. Candidates for the Ph.D. in mathematics must demonstrate, by examination, a reading knowledge of one foreign language, usually French, German or Russian.

The most important requirement for the Ph.D. degree is the preparation of an acceptable thesis. This thesis must demonstrate the candidate's ability to do independent, original work in mathematics, or mathematics education.

The Doctor of Education Degree. The department supervises an Ed.D. program that is run in conjunction with the School of Educational Studies. Course requirements are similar to those for the Ph.D., except that 12 credit hours are required in educational theory. No language exam is required. An expository thesis can be accepted.

Microbiology and Molecular Genetics

Professor and Head Moses N. Vijayakumar, Ph.D.

Microbiology

Microbiology is the study of bacteria, viruses and fungi and their many relationships to humans, animals and plants. Microbiologists apply their knowledge to public health and sanitation; food production and preservation, industrial fermentations which produce chemicals, drugs, antibiotics, alcoholic beverages and various food products; prevention and cure of diseases in plants, animals and humans; biodegradation of toxic chemicals and other materials present in the environment; insect pathology; and other activities which seek to control microbes, to enhance their useful activities and prevent those which are harmful. Microbiology is the basis for the exciting and expanding new field of biotechnology which endeavors to utilize living organisms to solve important problems in medicine, agriculture, and environmental science.

Microbes live in a great variety of environments and carrying out many of the processes found in higher organisms.

They are thus interesting in their own right as model systems for the study of reactions which occur in higher organisms. As subjects for research in biochemical and molecular genetics, microbes have contributed most to the current knowledge of genetics at the molecular level (microbial systems are in the forefront of genetic engineering).

Opportunities for employment exist at all scholarly levels, in many local, state and national government agencies and in varied industries. The record for employment of microbiologists has been excellent for many years and with the increased interest in biotechnology, job prospects look even brighter for the future.

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.

Cell and Molecular Biology

Cell and molecular biology is the study of how cellular components interact to promote life processes. It includes the study of how DNA and RNA are synthesized, how genes are expressed to allow differentiation of a single-celled egg into a complex multicellular organism. Cell and molecular biologists study protein synthesis, cell ultrastructure, organelle structure and function, enzymology, and the collection of concepts and procedures commonly known as "biotechnology" or "genetic engineering."

With the advent of modern molecular biology, studies of the fundamental processes of living cells have taken dramatic strides. The cell and molecular biology major at Oklahoma State University has been designed to allow students to acquire training in a multidisciplinary atmosphere that prepares them for employment in the rapidly growing field of biotechnology. Students following this

avenue of study will be well prepared to continue toward the M.S. or Ph.D. degrees at this or other institutions or to find employment directly upon graduation.

Opportunities for employment exist at all scholarly levels, in many local, state and national government agencies and in varied industries. The record for employment of cell biologists has been excellent for many years and with the increased interest in biotechnology, employment opportunities look even brighter for the future.

These fields require a solid knowledge of other sciences and students should take high school courses in mathematics, biology, chemistry and physics. Students should have broad interests in how living cells work and have aptitudes for biology and chemistry.

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 in microbiology or cell and molecular biology. Students may elect either microbiology or cell and molecular biology within the M.S. and Ph.D. program.

Prerequisites. Applicants for admission must have received the baccalaureate degree from an accredited college and must have completed a minimum of 30 semester credit hours in biological and physical sciences. The Aptitude Test portion of the Graduate Record Examination is required of all applicants. An applicant will not be accepted unless at least one member of the departmental graduate faculty agrees to act as the applicant's adviser at the M.S. level. A majority of the departmental graduate faculty must approve an applicant at the Ph.D. level.

The Master of Science Degree. In addition to the general requirements for the degree, the following departmental requirements must be met in attaining 30 credit hours with thesis. The plan of study must include six credit hours in MICR 5000 and one credit hour in MICR 5160.

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 of a student entering the program with a bachelor's degree must include 30 credit hours in courses other than MICR 5000 and MICR 6000. Those entering with a master's degree must include 15 hours in courses other than MICR 6000 which were not included in the master's study plan. Three hours of MICR 5160 must be included.

Candidates for the Ph.D. degree must pass both a written and an oral qualifying examination. The final examination covering the dissertation research is given promptly after the candidate has given a public seminar on his or her research work.

Medical Technology

The program in medical technology is designed to give the student the broad general education and the highly technical skills that are required for a successful career in this important medical science. The minimum requirement for the B.S. degree in medical technology is three years of university work and one year of clinical laboratory education (internship) in an approved school of medical technology.

Clinical Laboratory Education. For the B.S. degree and certification, the students will, after three years of university work, complete one year of clinical laboratory education (internship) in a school of medical technology accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and currently affiliated with Oklahoma State University. Schools of medical technology at the following hospitals are currently affiliated:

Comanche County Memorial Hospital,
Lawton, Okla.

Muskogee General Hospital, Muskogee,
Okla.

St. Anthony's Hospital, Oklahoma City,
Okla.

St. Francis Hospital, Tulsa, Okla.

St. Mary's Hospital, Enid, Okla.

Valley View Hospital, Ada, Okla.

Students entering their twelve months of internship must enroll in Medical Technology Clinical Laboratory (MTCL) courses for 12 credit hours during the equivalent fall and spring semesters and for six hours during the equivalent summer session, as follows: Fall—MTCL 4117, 4125; Spring—MTCL 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 intern-

ship 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 3.00 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 60 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.

Departments of Military Studies

Coordinator John M. Dobson, 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 \$250.00-\$400.00 per month subsistence allowance. Additionally, OSU will provide \$2,000 each year for up to four years for selected scholarship winners. Applications for four-year scholarships may be obtained through local high school principals or advisers and the ROTC departments. Information concerning three-year scholarships may be obtained by direct contact with the ROTC departments located on campus in Thatcher Hall.

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 those 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 Lt Col Gary D. Jones, M.S.**

The basic four-year Air Force ROTC program consists of one classroom hour and one leadership laboratory period per week during the freshman and sophomore years. Basic courses give students a thorough background in United States Air Force (USAF) structure and history, as well as drill and ceremony, military customs and courtesies, and wear of the uniform. Non-scholarship cadets enrolling in the freshman- and sophomore-level courses incur no military obligation.

During the spring of the sophomore year, students compete for selection into the Professional Officer Course (POC); those selected will attend either a four- or five-week field training encampment during the summer between the sophomore and junior years. For students getting a late start into the Air Force ROTC program, there are both two- and three-year programs that can lead to POC entrance and eventual commissioning.

Following completion of field training, students spend at least three semesters as POC cadets; academic courses consist of three classroom hours and one leadership laboratory per week, for three hours of credit per semester. 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. In addition, students are given the opportunity to gain practical leadership experience by holding various positions of responsibility in the Cadet Wing. POC cadets not on three- or four-year scholarships are eligible for partial scholarships of \$1725.00 per semester, in addition to \$250.00-\$400.00 per month subsistence allowance, if they maintain at least a 2.00 semester GPA.

All students have the opportunity to participate in various cadet wing-sponsored extracurricular activities during the year. These include visits to active Air Force installations to gain first-hand knowledge of the duties of junior Air Force officers; cadets are often taken on incentive flights in USAF aircraft. Cadets are also given the option to apply for numerous summer programs. These include expanded base visits, and even survival training, free-fall parachuting, and glider training programs in conjunction with the U.S. Air Force Academy.

Students who successfully complete the POC program are commissioned as second lieutenants in the United States Air Force, with a four-year obligation. Those who are selected for pilot or navigator training incur a 10 and six-year commitment.

Military Science

**Professor of Military Science and
Head LTC Charles J. Dorsey, M.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 Corps 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 3,800 second lieutenants each year across the nation.

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 skills, problem solving, 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 five-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: military history, computer literacy, and communication skills.

Students interested in the Department of Military Science are encouraged to visit with departmental faculty members at any time for further information concerning departmental course offerings and class sequence. A number of two- and three-year scholarships are available through the department. Prior enrollment in military science is not a prerequisite for departmental scholarship application.

Music

**Professor and Head
William L. Ballenger, M.A.**

The music program at OSU serves students who plan careers in the field of music as well as those who desire to

participate in any element of a comprehensive music program. Professional instruction prepares students for careers in performance, teaching, or the music industry. The OSU undergraduate degrees are also excellent preparation for graduate school and for church positions.

The student planning to major in music at the university level should consider his or her background carefully. It should include a strong interest in music during high school years and a talent for performance in vocal or instrumental music. Individual lessons, fundamental theory knowledge, and basic piano ability will also be helpful.

The music major may choose from the following degrees: (1) Bachelor of Music (B.M.) in performance, (2) B.M. in instrumental/vocal music education, (3) B.M. with elective studies in business, and (4) Bachelor of Arts (B.A.) in music. In addition, the Bachelor of University Studies allows the student to combine an interest in music with 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 Music is accredited by the National Association of Schools of Music (NASM). Students wishing to major in music should contact the Department of Music to arrange for an entrance audition and interview.

Graduate Programs

The Department of Music offers a Master of Music in pedagogy and performance. Consult the "Master's Degree Programs" section of the "Graduate College" in the *Catalog* for general regulations and requirements relating to admission.

The Master of Music in pedagogy and performance combines the salient elements of music performance and the pedagogy of music. Its intent is to adapt to the changing complexion of today's musical world by melding the areas of pedagogy and performance into a single, functional degree.

There are two tracks of study available to students enrolled in the Master of Music in pedagogy and performance. The conducting track facilitates the development of rehearsal techniques, an understanding of the pedagogical issues surrounding ensemble building, and the shaping of conducting skills. The applied music track is designed for students who wish to hone their performing and pedagogical skills on a specific instrument.

Students accepted to the Master of Music in pedagogy and performance program are required to take a placement examination in music theory and history prior to their first semester of enrollment. Prior to graduation, all students must pass a final oral examination.

The following classes are required for students enrolled in the conducting track: MUSI 5004, 5113, 5512, 5522, 5712, 5722, 5733, 5742, 5750, 5973. An additional six hours of elective credit must be earned toward this 32-credit degree.

The following classes are required for students enrolled in the applied music track: MUSI 4890, 5004, 5113, 5490, 5733, 5750, 5842, 5973. An additional four hours of elective credit must be earned toward this 32-credit degree.

Admission Requirements. To participate in the pedagogy and performance program, a student must first make application to the Graduate College. Prospective students must have earned a Bachelor of Music from an NASM accredited institution, or the equivalent. Students interested in the conducting track must audition on campus, or submit a videotape of their conducting, and fill out the department of music application for admission. Students interested in the applied music track must audition on campus, or submit an audiotape of a recent performance (minimum of 20 minutes of music), and fill out the Department of Music application for admission.

Financial Assistance. The Department of Music offers a myriad of assistantships with areas of specialization including music appreciation, class piano, instrumental techniques, accompanying, and music technology. Additional scholarships may be awarded through the Department of Music.

Philosophy

Associate Professor and Head Doren A. Recker, Ph.D.

Philosophy is an intellectual activity to be practiced and a subject matter to be studied. As an activity, philosophy seeks to analyze, evaluate, and often reformu-

late the ideas, principles and arguments by which experience is understood and explained and by which action is directed and justified. Every area of experience or behavior—aesthetic, political, religious, scientific or moral—is considered by philosophy. The writings produced by great philosophers are worthy of study as models of thought and as artifacts of historical influence and cultural significance. In this latter role philosophy is related to the development of every academic discipline.

Courses offered in philosophy fall into three general groups: broad introductory courses that cover a variety of topics, historical courses that proceed chronologically through a sequence of thinkers, and special topic or field courses. Some offerings combine the latter two characteristics. Few undergraduate courses are intended primarily for majors. The B.A. program in philosophy has been approved for offering at OSU-Tulsa.

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. The program in the major accommodates students of three sorts. The "general" track is designed for students who wish to explore philosophy as a general path to the refinement of their thinking, writing and speaking, and a deepening appreciation of the most fundamental and guiding ideas and values of civilization. It is a very flexible program, requiring two lower-division introductory courses, two upper-division historical survey courses and 19 hours of additional unspecified philosophy courses numbered 3000 or above. The "preprofessional" track is designed for students who wish to ground their professional interests (such as law, medicine, business, public service, the ministry), on a philosophic basis. Though requirements are technically the same for these students as ones on a general track, they are assigned a second adviser who helps to coordinate curricular and other activities for the best career preparation possible. The "graduate preparation" track is designed for students who are interested in pursuing graduate studies in philosophy. It requires an additional six hours of upper-division philosophy and mandates more specific courses than either of the other tracks. Students may shift from track to track at any time in their matriculation without prejudice.

A minor or a second major in philosophy will complement any other area of study. A philosophy minor requires 18 hours of unspecified philosophy courses, 12 of which must be numbered 3000 or above.

Graduate Programs

The Department of Philosophy offers a Master of Arts degree in philosophy. Consult the "Master's Degree Programs" section of the "Graduate College" in the *Catalog* for general regulations and requirements relating to admission.

The Master of Arts degree in philosophy offers a broad-based curriculum designed to serve the interests of three kinds of students:

1. *Teaching Emphasis*: for the student who wishes to pursue his or her study of philosophy and prepare for a career teaching philosophy at a community college or small four-year institution;
2. *Professional Emphasis*: for the student who wishes to pursue his or her study of philosophy as a supplement to preparation in a wide variety of professions including business, law, government, the health professions, the ministry, or counseling;
3. *Ph.D. Emphasis*: for the student who wishes to pursue his or her study of philosophy as a preparation for Ph.D. studies in philosophy at another institution.

Students interested in the *teaching emphasis* have the opportunity to intern at a community college, take collateral courses in second areas of teaching interest, and incorporate course work in pedagogy in the College of Education at OSU. They will typically complete their M.A. requirements under the "Courses Option" (see below).

Students interested in the *professional emphasis* have the opportunity to choose from a wide variety of courses that support their career plans (biomedical ethics, business ethics, philosophy of law, philosophy of religion, and cognate courses in other disciplines). They will typically complete their M.A. requirements under the "Reports Option" (see below).

Students interested in the *Ph.D. emphasis* have the opportunity to enhance their understanding of the history of philosophy, logic, and metaphysics and epistemology. They will typically complete their M.A. requirements under the "Thesis Option" (see below).

Students in all of these programs are able to compete for teaching assistantships and may teach either Critical Thinking or Introductory Moral/Social Problems courses.

The Master of Arts degree in philosophy may be earned through any of three options: (1) Courses Option (usually 12 three-credit-hour courses); (2) Reports Option (usually 10 three-credit-hour courses and a two-credit-hour report); and (3) Thesis Option (usually three-

credit-hour courses and a six-credit-hour thesis). The Courses Option requires 36 hours, the Reports Option requires 32 hours and the Thesis Option requires 30 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 (PHIL 3113 and 3213 or equivalents) and a course in logic (PHIL 4303 or equivalent). Students without these prerequisites, but otherwise admissible, may be granted "qualified" or "provisional" status until the prerequisites are satisfied.

All candidates for the Master of Arts in philosophy degree are required to pass a six-hour written examination on selected major Western philosophical works. This exam must be passed before a student will be allowed to begin work on either a thesis or the report and normally will be taken about two-thirds of the way through the required course work for the degree. Each student is supervised by a three-person advisory committee appointed for, and in consultation with, the student. This committee arranges and administers the written examination, and is responsible for determining the student's plan of study, thesis, report topics, and any other special requirements that may need to be fulfilled.

Master of Arts in Philosophy, Courses Option:

Thirty-six hours of course work in classes and seminars approved by the student's advisory committee and/or the graduate adviser.

Master of Arts in Philosophy, Reports Option:

1. Thirty hours of course work in classes and seminars approved by the student's advisory committee and/or the graduate adviser.
2. Two hours of PHIL 5910, in which two research papers are prepared. These papers typically will have their origin in graduate seminars taken as part of the plan of study, or in classes related to the professional field the student wishes to enter.
3. An oral examination and defense of these reports required in a formal presentation to the departmental faculty and additional invited persons with interest or expertise in the topics.

Master of Arts in Philosophy, Thesis Option:

1. Twenty-four hours of course work in classes and seminars approved by the student's advisory committee and/or the graduate adviser.

2. Six hours of PHIL 5000, in which a well-reasoned, substantial piece of research on a narrowly defined topic is written as a thesis.
3. An oral examination and defense of the thesis before the departmental faculty and additional invited persons with interests or expertise in the topic.

A student may also, in accordance with the policies of the Graduate College, select a graduate minor in connection with any of the three programs, thus permitting a concentration of work in broad areas such as social thought, cognitive science, or religion. Interdisciplinary work is encouraged for students pursuing the Professional Emphasis and the Teaching Emphasis.

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. 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*.

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 are 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 John W. Mintmire, Ph.D.

In today's technological society, professionals in many diverse fields need to possess critical skills of observation and quantitative evaluation. Increasingly, persons trained in physics can be found

in career positions in finance, medicine, business and many other fields where analytical skills are now a necessity for competitive survival. The program in physics at OSU is aimed at developing these skills in both experimental and theoretical settings. Curriculum plans are available for degrees in fundamental physics, or in applied programs that combine physics with biology, business, computer science, engineering, mathematics, premedicine, and others.

During the first two years, the physics program provides a basic quantitative and intuitive understanding of the physical world, from the classical ideas of Newton and Maxwell to the modern quantum and relativistic world of Schrodinger and Einstein. At the same time mathematical and computational skills are developed in application to physical problems. Having developed these skills, a student is ready for several options depending upon his or her interests. The student may pursue more advanced courses in experimental and theoretical areas leading to a B.S. degree in physics and graduate studies in physics or a related field. The applied physics B.S. degree allows a student to build an interdisciplinary program by substituting certain upper-division physics courses with upper-division courses in one specific field. For example, this can lead to an engineering specialization. Double majors with engineering are also possible as is a physics minor. The requirements for the minor can be obtained from the department. 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.

Graduate Programs

Prerequisites. Thirty semester hours of physics beyond the elementary course work, and mathematics courses through advanced calculus and differential equations are required.

The Master of Science Degree. Students can choose between a thesis or non-thesis option. The thesis option requires the successful completion of 30 semester credit hours beyond the B.S. and the submission of an acceptable thesis (six credit hours of PHYS 5000) based on original and independent research, on a topic chosen in consultation with the student's adviser. The student must successfully defend the thesis in an oral examination. In addition, nine semester credit hours of electives must be completed in physics, mathematics or an allied field. The non-thesis option requires 32 semester credit hours beyond the B.S. degree, including a one

credit hour seminar program, and two credit hours of library research (PHYS 5000) on a topic chosen in consultation with the student's adviser. The completed written report must be orally presented to the student's advisory committee. Fourteen hours of electives are allowed within this program, including up to nine credit hours of senior level courses, depending upon the student's background. For both options, the required courses are PHYS 5113, 5313, 5413, 5453 and 5613. The electives must be chosen in consultation with the student's advisory committee. For example, an advanced course in mathematics along with Solid State I and II may be reasonable choices for someone with a materials specialization. For others, more courses in electrical engineering may be preferable.

Also available is an M.S. program in photonics, with a specialization in physics, offered through the interdisciplinary M.S. in natural and applied sciences major, in association with the departments of chemistry and electrical engineering. Students may pursue one of three options, all of which require 24 credit hours of course work with at least one course taken outside the student's specialization. Beyond this, the first option (30 credit hours) requires an additional six hours of research and a successful defense of a thesis. The second option (32 credit hours) requires an additional six hours of course work and a two-credit-hour report. The third option (36 credit hours) requires 12 additional credit hours of course work with a creative component. For the second and third options at least two courses must be outside the field of specialization and a successful oral presentation of the report or creative component may be required.

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 allowed to form a Ph.D. advisory committee.

The following physics courses are required: PHYS 5213, 5313, 5413, 5453, 5613, 6313. Four additional PHYS prefix courses at the 5000 or 6000 level, including at least one course not in the student's specialization, must be completed. Additional courses reflecting the candidate's specialization may be re-

quired 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.

A detailed Plan of Study reflecting these requirements, electives and transfer courses should be filed with the Graduate College by the student after consultation with the Ph.D. advisory committee soon after passing the comprehensive exam. The advisory committee then administers the qualifying exam, the successful completion of which admits the student to Ph.D. candidacy.

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

Associate Professor and Head David L. Nixon, Ph.D.

Political science is, on the one hand, an ancient discipline with roots in Plato and Aristotle, and on the other, it is one of the most recent of the social sciences with roots in the early twentieth century. Political scientists study political institutions, the political behavior of individuals and groups, the formulation of public policy, the relations among states, and also enduring moral issues, such as what is justice and how leaders should be chosen. Political science by its very nature blends normative and empirical issues. Questions about democracy, participation, justice and representation have both empirical and evaluative components. It attempts to understand who participates in the political process and, when they do not, what it means for a democratic society. There is fundamental rethinking of the relations between the executive branch and the legislature, the distribution of power between the national and state governments, and the policy and budget priorities of the American people. It is a fascinating period in American political history and a major in political science offers the student a front

row seat in the analysis of these changes.

The principal fields of study in political science are political theory, public law, comparative politics, international relations, public administration, and American political behavior. Students may pursue the Bachelor of Arts (45 hours of political science and related course work in addition to General Education and college requirements), or the Bachelor of Science degree (45 hours of political science and related course work in addition to General Education and college requirements) in political science with a concentration in any of the fields of study. Either degree option requires a minimum of 24 hours of political science courses numbered 3000 or above. Additional courses numbered 3000 or above from related areas of economics, English, foreign languages and literature, geography, history, philosophy, psychology, religion or sociology are necessary to reach the required hours of the degree option. The minimum GPA is 2.50 with a minimum grade of "C" in all upper-division political science and related upper-division course work. Additional flexibility in the degree program is offered through internships and opportunities to work with professors in developing independent study courses in areas where the department may not offer regular course work. Students may also pursue political science as a second degree or as a minor to complement other areas of study. The minor in political science requires 15 hours of course work numbered 3000 or above, and must include three fields of political science. At least three of the hours must be taken in a field other than American politics, public law, and public administration. The required GPA is 2.50.

The political science major prepares the student for a wide range of careers, including administration of national, state and local government agencies; preparation for admission to law school; teaching at the secondary level; urban and regional planning; political journalism; the conduct and analysis of foreign policy; and preparation for graduate study in political science. At a more general level, political science has great career versatility for students. While the major does focus on the subject matter of government and politics, it also develops students' critical analysis, effective written and oral communications, leadership and judgment. Such skills, along with a substantive knowledge of government and politics that are central to all aspects of activity, prepare students for a wide range of options throughout their professional lives.

Graduate Programs

The Department of Political Science offers a Master of Arts degree in political science and a Master of Science degree in fire and emergency management administration (FEMA).

Candidates for the Master of Arts degree in political science may choose from two plan options. Plan A is a traditional political science option that permits specialization in two areas of political science offered by the department. Students may choose from the following six areas: American politics, comparative politics, international relations, public administration, public policy, and women and politics. The plan is designed to prepare professional political scientists for careers in research and teaching, as well as government and public service. Plan B is for students interested in public administration. The objective of this plan is to prepare students for careers in administrative and policy positions in local, state or national government.

Candidates who have significant professional experience in emergency services or have an undergraduate degree in an emergency service discipline may opt for the Master of Science in fire and emergency management administration. The M.S. in FEMA is a specialized degree designed to provide an educational foundation for those who are currently serving or aspire to serve as managers or administrators in the fire service or emergency management.

Admission Requirements. Any student having a bachelor's degree with an overall 3.00 grade-point average (on a 4.00 scale) is admitted as a student in full standing. Those with less than an overall 3.00 grade-point average are considered for admission on a probationary basis. The Graduate Record Exam (GRE) is not required. As a prerequisite course, all Plan A and Plan B graduate students must have completed an undergraduate statistics class, or must be willing to take such a class during their first semester as a graduate student.

Additional Admission Requirements for the M.S. in FEMA degree. In addition to the general requirements outlined above, candidates for the Master of Science degree in fire and emergency management administration must meet one of the following requirements:

1. Have significant practical experience in a fire or emergency service organization;
2. Have a bachelor's degree in fire or emergency related discipline such as fire protection technology, fire management administration, fire science, emergency management administration.

3. Successfully complete a plan of study to include a minimum of 18 hours of undergraduate study in fire protection and an emergency service internship.

A complete application for admission to the master's program must include:

1. A completed Graduate College application submitted with a non-refundable application fee.
2. An official copy of undergraduate transcript(s).
3. Two letters of recommendation with at least one from an employer or faculty member familiar with the applicant's academic abilities.
4. TOEFL results for students for whom English is a second language. Students must have a score above 549 to be considered for admission.
5. A brief letter indicating interests and other information the applicant considers relevant.

Degree Requirements for the M.A. in Political Science. In addition to the general requirements of the Graduate College, requirements for the Master of Arts degree in political science are listed below.

Plan A: Government, Politics and Policy.

1. A minimum of 33 credit hours in political science or closely related courses, including three hours of quantitative methods. A minimum of 18 hours of political science graduate seminars (seminars numbered 5000 or above); either a six-hour thesis or a three-hour creative research paper; and additional graduate level courses in political science to complete the 33-hour requirement. The student must successfully defend the thesis or creative component orally before the faculty committee.
2. Satisfactory completion of comprehensive exams in the last semester of the student's program in two of the following areas: American politics, comparative politics, international politics, public administration, public policy, or women and politics.
3. Minimum 3.00 grade-point average, with only one grade of "C" allowed.

Plan B: Public Administration and Public Policy.

1. A minimum of 36 credit hours in political science or closely related courses; either a six-hour thesis or a three-hour creative research paper; and the following required courses: Seminar in Quantitative Methods, Seminar in Public Program Evaluation, Seminar in Public Management, Seminar in Public Policy Analysis, Seminar in Public Organizations, and Seminar in Public Personnel Administration.

2. An optional three-to-six-credit hour internship.
3. Satisfactory completion of a comprehensive exam in the last semester of the student's program.
4. Twelve to 15 hours for an area specialization tailored to the needs of the student, that can include courses taken outside the department.
5. Minimum 3.00 grade-point average, with only one grade of "C" allowed.

Degree Requirements for the M.S. in Fire and Emergency Management Administration.

In addition to the general requirements of the Graduate College, requirements for the Master of Science degree in fire and emergency management administration are listed below.

1. A minimum of 39 credit hours in political science or closely related courses; completion of a three-hour practicum that represents the student's creative component; and the following required courses: Readings in Public Administration, Seminar in Public Organizations, Seminar in Public Program Evaluation, Seminar in Public Budgeting and Finance, Seminar in Public Management, Seminar in Public Personnel Administration, Seminar in Public Policy Analysis, Seminar in Quantitative Methods, and Seminar in Fire and Emergency Management.
2. An optional three-credit hour internship, required for pre-service students.
3. Satisfactory completion of an assessment center.
4. Nine hours of electives to complete degree requirements.
5. Minimum 3.00 grade-point average, with only one grade of "C" allowed.

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
Maureen A. Sullivan, 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 ma-

terial can be directly related to a variety of vocational opportunities.

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 licensure or certification to teach psychology in the schools, it is possible to earn a teaching certificate or license 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*.)

The department also offers courses in speech communication to enhance the student's ability to effectively communicate in the interpersonal, small group, organizational and public contexts. Both conceptual knowledge and practical application are stressed to prepare students to begin careers in business and industry, or to enter graduate or professional schools.

Graduate Programs

Employment in the professional field of psychology requires a graduate degree. Psychologists with advanced degrees have exclusive claim to some professional positions.

The Department of Psychology offers two programs of study leading to the degree of Doctor of Philosophy, one in clinical psychology and one in lifespan development psychology. Students applying for the doctoral degree should have the following prerequisites: introductory psychology, quantitative psychology, experimental psychology, history and systems. Abnormal psychology is recommended for students applying to the clinical program.

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 two semesters of quantitative psychology along with other course credits totaling 30 credit hours.
2. Complete a thesis project, supervised and reviewed by appropriate faculty members.

Following the completion of requirements, the student may be admitted to doctoral status in clinical psychology or experimental psychology.

Religious Studies

Professor Bruce C. Crauder, 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 promote a particular view. Emphasis is 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 and professional programs.

Sociology

Professor and Head Charles Edgley,
Ph.D.

Sociology is the scientific study of human society and social behavior. Sociologists study a broad array of social phenomena ranging from the dynamics of social interaction to the composition and workings of entire societies.

The diversity of the faculty is reflected in the many different types of courses offered. Topics include criminology and corrections; environment and population; law and society; organizations, industry and work; social psychology; race, ethnicity and gender; and, urban sociology. Many undergraduate majors take advantage of the applied research option by selecting supervised work-related internships.

The department also offers courses in anthropology providing students with a basic introduction to concepts and principles of physical anthropology, archeology and cultural anthropology. Regular course offerings include an emphasis on

North American Indian cultures and archaeology. Other courses deal with anthropological methods and theory.

The Department of Sociology offers B.A. and B.S. degrees in general sociology and applied sociology. The general sociology degree provides students the opportunity to obtain a strong liberal arts degree with a maximum number of electives, and provides a good base for pursuing a professional or graduate degree in sociology and in several other fields of study. The applied options focus on social and criminal justice, environmental issues, social gerontology and social and community services and provide practical experience for work in a variety of settings.

Graduate Programs

The Department of Sociology offers the Master of Science and Doctor of Philosophy degrees. Programs are designed to prepare students for appointments to the faculties of colleges and universities, to work in private industry and in social service agencies, and for research positions in business and in government. The department offers concentrations in environmental sociology, social inequality, complex organizations, deviance and criminology, and social psychology. The department also offers a Master of Science degree with special emphasis in corrections.

The department offers employment to a limited number of graduate students as teaching assistants or as research assistants. These teaching and research experiences constitute an invaluable part of the student's professional preparation.

Admission Requirements. Students seeking admission to graduate programs in sociology must be accepted by the Graduate College and the departmental graduate committee prior to official admittance. A combination of several criteria are used to evaluate an applicant's suitability for full admission to either of the programs. These include grade-point average, Graduate Record Examination scores, and letters of recommendation. Conditional or probationary admittance is considered under specified circumstances. Details on admission criteria are provided in the departmental *Graduate Student Manual* that can be obtained by contacting the Department of Sociology or the director of graduate programs.

Degree Requirements. The M.S. in sociology requires a minimum of 30 hours of course work. For students pursuing a specialty area in corrections, a minimum of 33 hours is required. For students pursuing the Ph.D., a minimum of 90 semester credit hours beyond the

baccalaureate, or 60 hours beyond the master's degree, is required. Each student is required to take nine hours of sociological theory, six hours of research methods, and nine hours of statistics. Detailed information on each program is available by writing to the department and requesting a *Graduate Student Manual*.

Statistics

Professor and Head
William D. Warde, Ph.D.

Statistics is the science of learning from data. It is concerned with the development of theory and with the application of that theory to the collection, analysis and interpretation of quantitative information.

Because statistics is important in many scholarly disciplines, a degree in statistics provides the opportunity to enter not only the statistics profession but also many other fields which make extensive use of statistics. The areas of application include agriculture, the biological sciences, engineering, the physical sciences, the social sciences, education, business and home economics, among others. Statistics also promises to be important in emerging endeavors such as pollution and environmental research, energy utilization and health-care administration.

Those who pursue the study of statistics should be interested in scientific inquiry and should have a good mathematical background. In addition it is desirable that they have a genuine interest in some other subject which uses statistics.

Careers in government, industry and education, involving the disciplines previously mentioned, are open to the statistics graduate. In government and industry a statistician usually serves as a researcher or as a consultant to research scientists and decision-makers. In education, of course, the teaching function is added to those of research and consultation. In almost all careers, the statistician uses the computer.

The Statistical Laboratory operates within the department to provide statistical consulting to researchers—both faculty and student—across the campus.

The Department of Statistics offers the B.S. and M.S. degrees to those interested in applications of statistics, and the Ph.D. degree to those who wish to make original contributions to the theory of statistics.

Graduate Programs

Admission Requirements. It is necessary to have an undergraduate degree, not necessarily in statistics or mathematics, to begin a program of study toward the master's degree in statistics. In some instances, it may be advantageous to have an undergraduate degree in another field. However, the student should have acquired a good mathematical background as an undergraduate. This should be equivalent to the required mathematics courses in the bachelor's program (MATH 2145, 2155, 2233, 3013, 4013). Students admitted to the program with deficiencies will be required to remedy such deficiencies.

The Master of Science Degree. The Master of Science degree in statistics may be completed by following one of the three plans listed in the "Graduate College" section of the *Catalog*. Normally, the all-course work plan will be initiated at the suggestion of the faculty. Each student will be required to attain an introductory knowledge of some field of application outside of statistics, mathematics and computer science. This requirement may be satisfied by having taken a three-hour graduate course in an approved field of statistical application. Each student is required to have completed CS 2113 or to have demonstrated competence in a procedure-oriented language such as FORTRAN.

The Doctor of Philosophy Degree. The Ph.D. requires the completion of 90 hours beyond the B.S. degree. A maximum of 30 of these credit hours may be earned by research for the dissertation. Each student will be required to attain an introductory knowledge of some field of application which may be satisfied by taking two three-hour graduate courses outside the fields of statistics, mathematics and computing. Each student is required to have completed CS 2113 or to have demonstrated competence in a procedure-oriented language such as FORTRAN.

Theatre

Professor and Head Bruce Brockman,
M.F.A.

The Department of Theatre offers the B.A. and B.F.A. degrees. Both degree options share a core of broad-based course work and practical experiences in all areas of the art form. Both tracks emphasize professional training within the context of a rich liberal arts education.

The Bachelor of Arts degree is a generalist degree, designed to provide a broad background in practical and theoretical areas while allowing students to develop a limited emphasis area. Students interested in several areas of performance and production elect this degree.

The Bachelor of Fine Arts degree is a preprofessional degree and is only open to students through audition or portfolio review at the end of the sophomore year. Each B.F.A. class is kept small to ensure appropriate individual instruction. Options in acting and design/technology are available.

Course work for both degrees is augmented by an active production program in two well-equipped theater spaces. The regular production schedule consists of four major productions each year and two to four fully mounted studio productions that are directed, designed, and performed by students. Students also have the opportunity to study with a variety of guest artists and scholars during each academic year.

In addition to professional careers, this major can lead to careers in arts management, teaching, law, counseling, or any career area where self-awareness, problem solving, group collaboration and effective personal communication are essential.

Graduate Programs

The department offers work leading to the Master of Arts degree. 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; or (2) 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 assistantships are available to qualified students. Information and application forms may be obtained from the department head or graduate coordinator.

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

Zoology

Professor and Head
James H. Shaw, 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 graduate school, as well as 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 also serves as preparation for graduate school or a medically-related professional school. The bachelor's degree in physiology requires participation in undergraduate seminars and course work in general biology, genetics, gross and microscopic anatomy, mammalian and cellular physiology, mathematics, physics, and chemistry.

The wildlife and fisheries ecology undergraduate program involves comprehensive study in the conservation of renewable natural resources, with an emphasis on the optimum balance between wild animal populations and habitat requirements. Courses in the wildlife and fisheries program fulfill the requirements for many other applied and professional careers in wildlife ecology, including preparation for graduate programs. Undergraduates majoring in wildlife and fisheries ecology may choose a degree emphasis from communications, fisheries, management/research or wildlife 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 excellent preparation for graduate study.

The B.S. degree curriculum in zoology is designed to provide a background in biology with specialization in that area of zoology in which the student wishes to focus. 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 graduate school, and 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 (1) wildlife and fisheries ecology and conservation, (2) aquatic and terrestrial toxicology, and (3) ecology, evolution and behavior. Specializations of faculty include animal behavior, behavioral ecology, cellular physiology, cytogenetics, developmental biology, ecology, ecotoxicology, evolution, fisheries biology, herpetology, ichthyology, limnology, mammalogy, membrane physiology, molecular systematics, parasitology, physiological ecology, reproductive endocrinology, teratology, and wildlife nutrition. The department includes the Ecotoxicology and Water Quality Research Laboratory and the Cooperative Fish and Wildlife Research Unit.

Teaching and research assistantships and out-of-state tuition waivers are available to qualified students. Information and application forms may be obtained from the departmental office.

Prerequisites. Applicants must have completed a baccalaureate degree including 40 semester hours in biology and related areas and have completed the Graduate Record Examination.

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 a relevant research technique such as statistics, mathematics, or computer science. Students must prepare research proposals and complete either a thesis or a report. For the thesis option, 30 credit hours are required; for the report option, 32 credit hours. The plan of study must include at least two credit hours in a graduate seminar.

The Doctor of Philosophy Degree. In addition to the general Graduate College requirements, students are required to show competence in either a reading knowledge of a foreign language or relevant research technique such as statistics, mathematics, or computer science. This requirement is in addition to the competence demonstrated for the M.S. degree. The plan of study must include 60 credit hours and at least four credit hours in a graduate seminar. A student must pass written and oral examinations, prepare a research proposal, and complete a dissertation based on original research worthy of publication.

Financial Aid. The department employs more than 30 graduate teaching assistants, and faculty members award re-

search assistantships based on ongoing grants and contracts. Out-of-state students receiving either award are assessed in-state tuition. Students completing packets available from the Office of Scholarships and Financial Aid are eligible to compete for in-state tuition waivers. The application deadline is February 15.

Research Facilities

Oklahoma State University owns and operates the 19,364 acre Lake Carl Blackwell area, including a 3,380 acre lake and the Cross Timbers Experimental Range. All are available for field studies. The department maintains laboratories in wildlife nutrition, flow cytometry, wildlife immunology, fish, invertebrate and wildlife toxicology, genetic toxicology, geographic information systems and remote sensing, and water quality. Specialized equipment within the department includes atomic absorption spectrophotometer, ultraviolet and visible spectrophotometer, spectrofluorometer, ion chromatograph, high pressure liquid and gas chromatographs, liquid scintillation counter, ultracentrifuge, ion specific electrodes, freeze dryer, tissue culture facilities, bright field and epifluorescent microscopes, workstation and PC computer lab, photo microscopy, and many other items. The University Library contains more than 2 million volumes and has computerized literature search systems.

Cooperative Fish and Wildlife Research Unit. The Oklahoma Cooperative Fish and Wildlife Research Unit has been affiliated with the department since 1948. Research is conducted on a wide variety of fisheries and wildlife topics in cooperation with the Oklahoma Department of Wildlife Conservation, U.S. Geological Survey's Biological Resources Division, and others. The Unit is designed to provide these cooperators with useful information on resource management issues. Students receiving support from the Unit enter one of the departmental graduate programs.

Ecotoxicology and Water Quality Research Laboratory. The Ecotoxicology and Water Quality Research Laboratory (EWQRL), affiliated with the Department of Zoology, provides a unique combination of research and service in environmental quality problems related to water and soil toxicology. It serves researchers at OSU and other universities, individual citizens, industries, municipalities, state and federal government agencies, and has achieved national recognition. Specifically, the EWQRL conducts freshwater aquatic toxicity tests to meet NPDES

biomonitoring compliance for industries and municipalities, customized bioassays in water and soil to meet research needs, field assessments of contaminated sites, and chemical analyses of water, soil sediment and tissue samples. Students in zoology, environmental sciences, and civil engineering have the opportunity to conduct research through the EWQRL.