8705 Local Government Law II (3) Problems presented by fragmentation of local government units. Current solutions to include government as authorized by Tennessee law. Problems in the financing of local services. Current constitutional issues (e.g., school financing and land use control). Influence of federal programs on local government finance and decision making.

8710 Oil and Gas Law (3) Selected materials on nature of interest, conveyancing, royalties, grants and reservations, leases, and taxation.

8720 Advanced Constitutional Law (3) Select problems or perspectives in constitutional law. Designation is intended to cover numerous approaches which involve use of instructors from other disciplines such as history, political science, economics, sociology. Prereq: 8300 and 8310 or permission of instructor.

8740 Private Corporations I (3) History and nature of the corporation; selection of appropriate form of business enterprise; judicial and legislative regulation; promoters and preincorporation transactions; incorporation procedures; defective incorporation; disregard of the corporate entity; rights and management duties of shareholders, directors, and officers.

8760 Private Corporations II (3) Corporate finance; rights, duties, and liabilities respecting securities; special problems of close corporations; dividends and purchase by corporation of its own shares; fundamental corporate changes (sale of assets, mergers, etc.); shareholders' derivative actions.


8790 Advanced Legal Bibliography and Research Techniques (2) A survey of materials not covered in Research and Writing I. Included will be use of U.S. government documents, preparation of legislative histories for state and federal legislative materials, specialized research tools in areas of taxation, labor law, and international law.

8800 Sales (3) Art. 2 (Sales) and Art. 7 (Documents of Title) of the Uniform Commercial Code.

8810 Security Transactions (3) Brief survey of security and guaranty. Art. 9 (Security Interests in Personal Property) of the Uniform Commercial Code.

8820 Securities Regulation (3) Advanced problems of governmental regulation of issuance of securities.

8830 Social Legislation and Employee Benefits (3) A study of legal problems arising under such programs as workmen's compensation, wage and hour laws, unemployment compensation, public assistance, Social Security, and Medicare.

8840 Taxation (Estate, Gift and Inheritance) (3) Federal Estate and Gift Tax laws. History and development. Relationship of the two taxes. Procedure and review before boards and courts. Preparation of a return based upon hypothetical facts, and presentation of research results on asserted by fragmentation of local government issues. Probate involving the law of several states are assigned.

8850 Seminar in Law and Mental Health (3) Composed of equal number of law and medical students. Assigned readings. Pairs of law and medical students to prepare papers. Jointly taught by professor and psychiatrist.


8865 Taxation (Income) II (3) Corporate reorganization; methods of corporate distributions; sale of corporate business; other income tax problems; partnerships, and other business organizations.

8870 Seminar in Business Planning (3) Selected problems on corporate and tax aspects of business planning and transactions.

8885 Civil Procedure III (4) Post trial motions, appellate record, appeals and relief from judgments, final process, res judicata and estoppel. Emphasis upon Tennessee and Federal practice.

8890 Seminar in Environmental Protection (3) Through team-teaching and input of selected experts, course will focus on specific problems of mitigating in defense of the environment and mobilizing public and private efforts in defense of the environment. Problems of proving environmental impact of selected projects, interpretation and evaluation of scientific data, use of expert witnesses. Attention will also be given to special environmental concerns of the region, e.g., TVA operations, strip mining, forest management, wildlife preserves.

8910 Administrative Law Seminar (3) Indepth study of principles of administrative law not covered in basic courses, as discretion, choice of adjudication of rulemaking to develop administrative policy, consistency in administrative action.

8920 Trade Regulation (4) A study of the common law and statutory regulation of trade. Monopolization and restraint of trade; mergers and acquisitions; price fixing; resale price maintenance; and other problems arising under federal anti-trust laws.

8930 Seminar in Consumer Protection (3) Selected problems in consumer protection.

8935 Law and Medicine Seminar (3) Examination of medical professional's involvement in judicial process, including: (1) medical malpractice and alternatives to fault-based liability; (2) responsibilities for disposition and care of dead bodies and legal principles governing organ transplantation; (3) expert medical proof and testimony; (4) medical-legal aspects of euthanasia; (5) other more specific matters such as legal import of medical procedure's various canons of ethics.


8945 Trial Moot Court (1) Experience and training in trial of law and equity cases. Third-year students will act as counsel in all aspects of trial practice. Knox County Circuit Court Judges serve as judges of Trial Moot Court. Satisfactory-No Credit.

8950 Trial Moot Court II (1) Training in trial of a law suit.

8955 Seminar in Trade Regulation (3) Selected problems of current import, e.g., franchising, conglomerates.

8960 Trusts (4) Trusts: nature, creation, transfer, termination, modification, and administration.

8965 Unfair Trade Practices (3) Business torts and unfair competition and trade practices. Trademark, trade name, and copyright protection. Prereq: Trade Regulation.

8975 Water Law (3) Survey study in water law, including case studies and water law doctrines. Letter grade given to non-law students. (Same as Environmental Engineering 4610 and Water Resources Development 4810.)


8985 Directed Research (1-3) Independent research by a student or students under direct supervision of instructor. Student may take course maximum of once each year in last two years of study.

8990 Land Finance Law (3) Financing devices such as mortgages, deeds of trust and land contracts, problems involved in transfer of interests subject to these devices, and problems incurred in event of default. Consideration also directed to contemporary problems arising in such areas as condominiums, cooperatives, housing subdivisions and shopping centers.

Course Offerings Subject to Change

The necessity of adjustments to accommodate changing conditions may dictate modifications in the course offerings and other features of the program described above. Accordingly, the College of Law reserves the right to make such variation in its program as circumstances may require. Prospective students who are interested in the precise course offerings at a given time or who desire other special information should make inquiry in advance.
College of Liberal Arts

Alvin H. Nielsen, Dean
Charles W. Keenan, Associate Dean
Boyd L. Daniels, Assistant Dean for Student Academic Affairs
Charles O. Jackson, Assistant Dean for Curriculum and Instruction

The arts and sciences encompass the entire range of human knowledge, from the earliest records to the latest laboratory results. All that human beings have observed about themselves, about their societies, and about the natural world around them is of concern to one or another of the arts and sciences.

The curriculum of the College of Liberal Arts reflects this wide-ranging concern with the life of the mind. It emphasizes the breadth of human knowledge, perceived not only in terms of the traditional categories of the humanities and the natural and social sciences but also in broader perspectives which extend across academic fields and reach beyond the boundaries of a college of liberal arts. It also stresses depth of learning, thereby seeking to acquaint the student with the rigors of the intellectual process. Through a study of the liberal arts one thus learns to participate in an intellectual tradition which is independent of particular teachers and which guides one in the choice of subjects for investigation and in the interpretation of those subjects. With time the individual begins to apprehend the great outlines of knowledge, the principles upon which it rests, the scale of its parts, and its lights and shadows.

The central purposes of a liberal education include the encouragement of intellectual tolerance, a dedication to the quest for knowledge as a worthwhile goal in and of itself, and the cultivation of a responsible, creative, individual mind. These qualities should enable one to develop throughout life an ability to reason and to express oneself clearly, an incentive to absorb emerging knowledge, and a competence to confront the uncertainties of human experience. For the student whose interests and talents lead into research, scholarship, and teaching, a liberal education provides an invaluable foundation. For the individual who enters business, industry, the professions, or government service, it furnishes a broadly useful and well-rounded educational background. For all it offers the opportunity to share in a rich intellectual heritage, in the adventures of the mind, and in the life of the educated imagination. A liberally educated person is identified not so much by specific knowledge as by quality of mind and by creative response to the challenges of the times.

At the heart of a liberal education is an appreciation of and a familiarity with a great Triad: language, literature, and the arts; history and society; science and mathematics. These three great well-springs of human thought are sources of the programs of study offered students in the College of Liberal Arts.

Programs of Study
Granting the broad, general goals of a liberal education, students come into the College of Liberal Arts with a wide variety of specific educational and vocational objectives. Recognizing this diversity, the College offers a number of different programs of study leading to the baccalaureate degree, and also several pre-professional curricula which prepare the student for advanced study but do not lead to a degree from this College.

Degrees Offered
(1) BACHELOR OF ARTS

The Bachelor of Arts is the basic liberal arts degree, representing the attainment of a broad knowledge of the arts and sciences as well as a comprehensive understanding of one or more areas of special interest. Four programs leading to this degree are open to the student:

(a) Basic Program—The program appropriate for most B.A. students, it is developed around broad area requirements in the Triad plus intensive study in one or more of the specified departmental or interdepartmental major fields described below.

(b) Individualized Program—Designed for students whose educational goals are best met by a program tailored to their particular needs, it is similar to the Basic Program in broad area requirements but permits the student to develop an individual concentration incorporating work in two or more departments.

(c) College Scholars Program—Intended for a limited number of students who are especially highly qualified and motivated and who have been selected to undertake this honors-level program, the College Scholars Program permits the student maximum freedom to design a curriculum to meet his or her particular interests and goals.

(d) Pre-Professional Program—The Pre-Professional Program is offered for those who wish to participate in one of the cooperative 3-1 curricula in the health sciences (medicine, dentistry, pharmacy, or medical technology). The student proceeds directly to specialized training in his chosen area after the third year of liberal arts study and offers the first year of professional study in lieu of a major concentration in the College in satisfying the requirements for the B.A. degree.

(2) BACHELOR OF FINE ARTS

The Bachelor of Fine Arts degree represents intensive study preparing students for graduate study and professional positions in art. The degree is offered with a major in Studio Art. Recommended course combinations for those who desire to concentrate in Communication Design, Drawing, Painting, Oil and Watercolor, or Printmaking and Sculpture are available in the Art Department office.

(3) BACHELOR OF MUSIC

The program leading to the Bachelor of Music degree prepares students for graduate study and for positions in which a professional degree is required. The degree is offered with a major in Music which has concentrations in Music Theory, Composition, Music History
Advisers in the Liberal Arts Advising Center, in the various major departments, in the University Counseling Center, and elsewhere on campus are available to assist students with their program planning. In the final analysis, however, only the student can determine the program which will best satisfy his or her particular needs.

Requirements

For Degrees

Bachelor of Arts

As has already been stated, the general liberal arts degree is the Bachelor of Arts, and it is the appropriate objective for most students in the College of Liberal Arts. Requirements for this degree and the several curricular programs which lead to it will now be discussed in detail.

GENERAL REQUIREMENTS

Each student seeking a Bachelor of Arts degree must develop a program which includes the following:

1. A minimum of 180 credit hours.
2. At least 60 upper-level courses numbered 2000 or above.
3. Appropriate course work to satisfy the broad requirements of the Triad (Basic Program, Individualized Program, and Pre-Professional Program only).
4. One or more concentrations consisting of at least 36 credit hours in courses numbered 2000 or above, as specified by the major departments or appropriate committees or advisers.

Note: Students who elect to develop two major concentrations may use courses which are suitable for Triad credit and credit in the second concentration to meet simultaneously requirements in both areas. In all other cases, the same course may not satisfy more than one Triad requirement, nor may any course taken to satisfy a Triad requirement also be counted as part of the major. A course which satisfies a Triad requirement may also serve as prerequisite or corequisite for a major, however. Students may not use courses to meet requirements simultaneously in two majors or in a major and minor. A minimum grade of C must be earned in every course counted as part of the major. Students transferring from other institutions must complete at least 12 credit hours in the area of concentration at The University of Tennessee, Knoxville.

I. Basic Program

A. THE TRIAD:

Language, Literature, and the Arts

History and Society

Science and Mathematics

Language, literature, and the arts play a vital role in shaping human experience and perception. They give expression to human thought and feeling and give form and order to a sense of the world. The written and spoken word, the dramatic motion and gestures of theatre, film, and dance, the sensual structures which address the eye and ear in painting and sculpture, architecture and music—all of these help to define what is human.

It is important that every student of liberal arts become acquainted with the modes of experience within his own culture and through exposure to cultures that are foreign, distant, and strange. To know what one is not is essential for knowing what one is. Although there is no formula for determining which disciplines, skills, and enjoyments are of primary or of secondary importance, the written and spoken word has a wider range of reference than any other human skill. A basic competence in reading and writing is thus a minimal condition for knowing how to think about and relate all other activities.

The study of history is an integral part of a liberal education. Because human beings build on their experience, a clear understanding of the present requires an historical perspective. Such perspective may be developed by a number of courses, including the traditional survey of Western Civilization or other broad surveys such as Asian History, Latin American History, History of the United States, and Afro-American History. More specialized courses in the history of particular segments of human experience, e.g., philosophy or religion, may also prove valuable.

A liberal education presupposes not only an awareness of the past but also a familiarity with contemporary social institutions, processes, and practices. From a wide variety of offerings in the social sciences the student may choose courses useful in acquiring that familiarity. Only by such knowledge can people of good will hope to maintain humane values in a world where industrialization, urbanization, and other dimensions of technological change challenge traditional patterns of individual and collective behavior.

Study of science and mathematics develops in the student an inquiring attitude toward the natural environment and his ability to understand scientific explanations of diverse phenomena. These ends may be realized through an understanding of the empirical and the rational in scientific methods of inquiry and an awareness of the limitations of science and technology in solving problems. The student should attain a knowledge of the way in which the development of science and technology has affected beliefs, philosophies, and the development of civilization.

SPECIFIC REQUIREMENTS IN THE TRIAD

(1) Language, Literature, and the Arts

(a) Writing Proficiency

Each student is required to demonstrate his ability to use the English language effectively and coherently, in one of the following four ways:

(i) By completion of English 1510-20 or 1518-28 or 1111-21-31.

(ii) By earning a score of 4 or 5 on the College Board Advanced Placement Test in English; or, with special permission, by earning a score of 3 on that examination and completing one 2000-level course in English at The University of Tennessee, Knoxville, with a grade of B or better.

(iii) By passing (normally after completing one quarter of freshman English at The University of Tennessee, Knoxville) a proficiency examination in writing, administered by the Department of
College of Liberal Arts

English in cooperation with the Committee on Writing Standards.

(iv) By completing 4 hours of freshman English for the minimum requirement of 6 hours in courses which require substantial emphasis on writing. The writing emphasis courses are identified by the Committee on Writing Standards; a list of those approved may be obtained in the office of the Department of English or in the Liberal Arts Advising Center.

Note: Students should normally take English in the first quarter of their registration and continue to take English or a writing-emphasis course in each succeeding quarter until this requirement is met.

(b) Literature, Foreign Language, and the Arts

The student may select any one of the following three options to satisfy this requirement:

(i) 8 hours of literature in a foreign language at the 3000-level or above. Prerequisite to this option is intermediate-level competence in the language, demonstrated by diagnostic (non-credit) or proficiency (credit) examination by or completion of the 2000-level sequence in that language.

(ii) Intermediate-level competence in a foreign language, demonstrated by diagnostic (non-credit) or proficiency (credit) examination or by completing 8 credit hours beyond the introductory sequence, (or an approved equivalent) in that language; and 8 hours of literature in English (originally in English or in translation) drawn from the list of courses published by the Committee on Language, Literature, and the Arts, available in the Liberal Arts Advising Center.

(iii) 24 hours in an integrated program in literature, culture, and/or the arts, focusing either on (1) a particular nation or area other than the United States, or (2) a comparative study of literary and artistic modes, genres, or movements. Suggested programs are published by the Committee on Language, Literature, and the Arts and are available in the Liberal Arts Advising Center; students may also propose individual programs to the committee for consideration.

Note: In options (i) and (ii), those who take the diagnostic examination will not receive credit toward graduation but will be exempted from the portion of the requirement satisfied by the examination. Those who take the proficiency examination may earn up to 16 hours of credit toward graduation for previous study of the language, in addition to the credit they earn for course work undertaken in the College. Normally two years of high school language study is regarded as equivalent to one year of college study. Students who have had four years of high school study of the same language should be able to satisfy the requirement for intermediate-level competence in either option by examination and those who have had less than four years of study may be able to satisfy a portion of the requirement in this way, thus reducing the time required to satisfy this requirement. Full credit toward graduation is given for any language study undertaken successfully in the College regardless of the amount of previous study of that language.

Students who have had less than two years of study of the same language in high school are admitted with an entrance deficiency. Satisfactory completion of the final quarter of the first year sequence of college level foreign language study, normally in the freshman year, is necessary to remove this deficiency.

(2) History and Society

Each student must complete 24 hours of course work in this area, including:

(a) One 8-hour sequence from the several survey courses offered by the Department of History or in a comprehensive interdisciplinary sequence having a substantial emphasis on history;

(b) 8 hours in courses with emphasis on man and society which are not primarily historical in nature;

(c) The remaining hours may be taken in either categories (a) or (b).

A list of courses which satisfy this requirement is published by the Committee on History and Society and is available in the Liberal Arts Advising Center.

(3) Science and Mathematics

Each student must complete 24 hours of course work in this area, including:

(i) One of the following two options:

(1) An 8-hour sequence in a biological science; or

(2) An 8-hour sequence in a physical science.

(ii) 16 hours drawn from additional courses in the biological and/or physical sciences or from designated courses in:

(iii) The history, philosophy, or social impact of science;

(iv) Mathematics and logic.

No more than 16 hours may be applied toward this requirement from any one of the above four categories.

A list of courses which satisfy this requirement is published by the Committee on Science and Mathematics and is available in the Liberal Arts Advising Center.

B. THE MAJOR CONCENTRATION

In many ways the most important part of each student's program is the major concentration, for it is in this intensive study of one more or less limited field of knowledge that the individual begins to find his or her niche in the world of intellectual endeavor. The major concentration may be drawn from the offerings of a single department or it may bring together related concerns of two or more departments. In either case the student should work out a program of study which has a definite design and aims at some overall objective. Guidelines are published by each major department or interdepartmental committee to assist the student in ascertaining goals and to provide a framework within which to develop a particular program. Additional assistance in the form of personal counseling is available in the Liberal Arts Advising Center and from designated faculty advisers in each major department or area.

Requirements for the specified majors available to students in the Basic Program vary from a minimum of 36 to a maximum of 56 credit hours in courses numbered 2000 and above, including prerequisites and corequisites (i.e., supporting courses in other departments or areas). Insofar as consistent with the objective of a total program balanced reasonably between broad area requirements in the Triad, the major concentration, and supplementary courses, the student may elect as many courses as he or she wishes in any department or area.

Majors Available

In The Basic Program

Anthropology
Art
Audiology
Biology
Botany
Chemistry
Computer Science
Cultural Studies
Economics
Environmental Studies
French
Geography
Geology
German
Greek
History
Human Services
Italian
Latin
Mathematics
Microbiology
Music
Philosophy
Physics
Political Science
Psychology
Religious Studies
Russian
Spanish
Speech Pathology
Speech & Theatre
Sociology
Zoology

C. SUPPLEMENTARY ELECTIVE COURSES

At least one-fourth of each student's curriculum in the Basic Program will be made up of courses selected according to the individual's interests to supplement and support the work being done in the major concentration and in the Triad. This dimension of the student's experience in the University represents that freedom within which his or her total education may be rounded out and enriched. Elective courses should be chosen with care so that they will truly enhance the student's total program and help in the achievement of well thought-out educational objectives.

Some of the choices which the student might make in selecting his elective courses are:

(1) Additional courses in the major field;

(2) A related minor concentration in another department or area or in another college of the University (24 or more credit hours in courses numbered 2000 or above; see Note below);

(3) A concentration in the arts;

(4) An off-campus quarter.

Only the student's imagination and initiative and his willingness to conceive and develop a totally meaningful academic program limit the choices of supplementary elective courses.

Note: Minors are available in most of the departments and areas in which majors are offered, and also in the following:

Asian Studies
Biochemistry
Comparative Literature
Physical Sciences
Biology
Portuguese
Comparative Studies
Women's Studies

Minors may be developed in other colleges of the University, but they must be approved by petition. Students transferring from other institutions must complete at least 6 of the 24 credit hours required for a minor at The University of Tennessee, Knoxville.
II. Individualized Program

The Basic Program described above will meet the educational needs of most of the students enrolling in the College of Liberal Arts. Some, however, come with particular strengths in their preparation or with special interests which do not coincide with the departmental or interdepartmental majors specified in the Basic Program. For these students the Individualized Program has been established as another means of attaining a closer correlation between student needs and academic program.

Students in the Individualized Program will normally satisfy the broad requirements of the Triad, just as do those in the Basic Program, although some latitude is provided for substitutions approved by the student's adviser and the Dean of the College. The point at which the greatest degree of individualization takes place, however, is in the area of concentration. Although the quantitative aspect of the area of concentration is the same as for the major in the Basic Program (i.e., a minimum of 36 hours in courses numbered above 2000), there is no restriction in principle on the choice of courses of which it is comprised. The student may design his own program of consultation with an adviser, and submit it for consideration to the Committee on the Individualized Program. The proposed course of study must have some clear central purpose, usually implemented through intensive work in two or three departments; an undirected scattering of courses will not be approved. For further information consult the program director, Dr. Harry Jacobson (Ayers Hall).

III. College Scholars Program

A limited number of freshmen, entering transfer students with less than 60 credit hours, and resident students with less than 90 credit hours are invited each year to enter the College Scholars Program. Selection is based on previous academic record, test scores, recommendations, a written essay, and, except for freshmen, an interview. Admission is prospective, and a student has completed two quarters in the program; continuation depends upon the maintenance of a satisfactory record (normally 3.25 or above) and evidence of continued motivation and interest.

The College Scholars Program affords the highest degree of freedom to the student in developing a meaningful curriculum. Each student's program is worked out individually with a special adviser, who together they determine what kinds of course work and/or other learning experiences (e.g., independent study, off-campus involvement, study abroad) will best fulfill the student's objectives and at the same time help him or her achieve the kind of liberal education the College believes is important for every student. Participants in the program will be granted certain privileges in the use of the library and in registration for courses and will also be eligible to submit research or creative writings for inclusion in the projected annual publication of the College Scholars Program.

Each College Scholar will normally enroll in one or more general or departmental honors courses each quarter. In the final two years of the program he or she will elect to work for either General Honors, involving independent study and research on a topic chosen in consultation with the adviser and resulting in an honors thesis or project report, or Departmental Honors, following in this case the honors program prescribed by the particular department. For further information consult the program director, Dr. Harry Jacobson (Ayers Hall).

IV. Preparation For The Health Professions

Pre-Dental
Pre-Dental Hygiene
Pre-Medical
Pre-Medical Record Administration
Pre-Medical Technology
Pre-Nursing
Pre-Pharmacy
Pre-Physical Therapy
Other Health Professions

Pre-health professional programs are available for students who plan a career in one of the health professions. The programs preparing students for the study of medicine, dentistry, pharmacy, and physical therapy—pre-medical technology and pre-pharmacy—are offered for those students who are planning to pursue professional training in health professional areas which lead to an undergraduate degree from UTCHS but not to a degree from UTK.*

NOTE: The UT Center for the Health Sciences is a state-supported institution and by legislative intent is required to admit all qualified Tennesseans prior to considering out-of-state applicants. At the present time there are more qualified Tennessee applicants than there are places available; therefore, out-of-state applications are not being considered. The only exception to this policy is the non-resident applicant who is the son or daughter of an alumni or alumnus of the UT Center for the Health Sciences and who has completed all of the undergraduate work at a college in the University of Tennessee system and is otherwise qualified competitively.

Admission to any program at the UT Center for the Health Sciences or to the Medical Technology Program at the UT Memorial Research Center and Hospital is at the discretion of that program's admissions committee. Admission to the University of Tennessee, Knoxville, and completion of a pre-health professional program in the College of Liberal Arts does not assure admission to any professional training program.

Because the competition for admission to most programs in the health professions is keen, pre-health professional students are encouraged to work towards the completion of a degree program in a major which will enable the individual to adapt to an alternative program in the event admission to the desired program is not achieved. The preparatory courses necessary for professional study can be incorporated into the chosen major program.

Students in a pre-health professional program should consult with a health professions adviser in the Liberal Arts Advising Center (220 Ayres Hall) or the Coordinator of the Health Professions Office (218 Ayres Hall) for more information about the programs outlined below. Bulletins describing the various pre-health professional programs, including a detailed statement of requirements, may be obtained from the Health Professions Office, 218 Ayres Hall.

PRE-DENTAL PROGRAM

The College of Liberal Arts offers both three-year and four-year programs leading to the degree of Bachelor of Arts for students preparing for the study of dentistry. Both programs are based on the curriculum outlined below. In the three-year program the student must complete at least 63 credit hours while enrolled in the College of Liberal Arts, and the B.A. degree is granted upon satisfactory completion of the first year of study at the UT Center for the Health Sciences. In the four-year program the degree is granted upon completion of 180 or more credit hours while enrolled in the College of Liberal Arts, the B.A. degree upon satisfactory completion of the first year of study at the UT Center for the Health Sciences. In the four-year program the student must complete the last 45 hours of credit in residence at the University of Tennessee, Knoxville, before entering the UT Center for the Health Sciences.

Although the B.A. degree is not required for admission to the College of Dentistry at Memphis, most of the students accepted into the study of dentistry have the baccalaureate degree before admission. Therefore, pre-dental students are encouraged to plan to complete all requirements for the B.A. degree before enrolling in the College of Dentistry.

Freshman
Hours Credit
English 1510-20 8
Chemistry 1110-20 8
Mathematics 1550-60 or 1840-50 8
French I (Language, Literature & Civilization) 8
Elective 8

*Students wishing to prepare for professional training at institutions other than The University of Tennessee Center for the Health Sciences should consult the catalogs of those institutions to determine the specific preparation required for admission.

+Or equivalent honors courses.

The College of Dentistry requires a minimum of 10 hours of English in addition to English 1510-20. (Speech 2311 may be substituted for one quarter of literature).
## PRE-DENTAL HYGIENE PROGRAM

An Associate of Science Degree in Dental Hygiene is granted by the UT Center for the Health Sciences upon completion of a program which includes 45 credit hours of prescribed courses in the College of Liberal Arts and six quarters of study at Memphis.

The pre-dental hygiene program may change to a bachelor's degree program in the near future. Therefore, pre-dental hygiene students are encouraged to consult with a health professions adviser in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office concerning the status of the program.

Bulletins describing the pre-dental hygiene program and requirements in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

### PRE-MEDICAL PROGRAM

The College of Liberal Arts offers both three-year and four-year programs leading to the degree of Bachelor of Arts for students preparing for the study of medicine. Both programs are based upon the program outlined below. In the three-year program the student must complete at least 135 credit hours while enrolled in the College of Liberal Arts, and the B.A. degree is granted upon satisfactory completion of the first year of study at the UT Center for the Health Sciences. In the four-year program the degree is granted upon completion of 180 or more credit hours while enrolled in the College, including a major of 36 or more hours in addition to the courses outlined below. The requirement for a major is waived for those taking their fourth year at Memphis. Students in either the three- or four-year program must complete the last 45 hours of credit in residence at the University of Tennessee, Knoxville, before entering the UT Center for the Health Sciences.

Although the B.A. degree is not required for admission to the College of Medicine, most students accepted into the study of medicine have the baccalaureate degree before admission. Therefore, pre-medical students are encouraged to plan to complete all requirements for the degree before enrolling in the College of Medicine.

<table>
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<tr>
<th>Sophomore</th>
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<tbody>
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<td>Biology 1210-20-30 or Zoology 1118-28-38</td>
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<td></td>
</tr>
<tr>
<td>Chemistry 3211-21-31 &amp; 3219-29-39</td>
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<tr>
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<td>Trial II</td>
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<tr>
<td>Total</td>
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<td>(Total 135)</td>
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### PRE-MEDICAL TECHNOLOGY PROGRAMS

The College of Liberal Arts offers two programs leading to the study of medical technology:

1. The **Science-Medical Technology Curriculum** leading to a Bachelor of Arts degree within a major in medical technology from UTK.
2. The **Pre-Medical Technology Program** leading to a degree of Bachelor of Science in medical technology from UTCHS at Memphis.

### Science-Medical Technology Curriculum

The Science-Medical Technology Curriculum is a three-year program, consisting of a minimum of 135 credit hours in the College of Liberal Arts. Students who complete this curriculum satisfactorily may apply for admission to the course of study in medical technology at The University of Tennessee Medical Research Center and Hospital in Knoxville. Successful completion of this course, which results in the granting of 50 credit hours, makes the student eligible for a Bachelor of Arts degree with a major in medical technology from UTK. In addition, a Certificate of Laboratory Training will be awarded by the UT Memorial Research Center and Hospital. Students will then be eligible for examination by the Board of Registry of the American Society of Clinical Pathologists in order to be certified as registered medical technologists.

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
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<td>Trial II</td>
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### PRE-MEDICAL RECORD ADMINISTRATION PROGRAM

Admission to the medical record administration program at the UT Center for the Health Sciences, leading to a Bachelor of Science degree from UTCHS at Memphis, requires completion of 135 hours of prescribed courses. Classes are admitted in September; applications must be filed by April 15. The selection process usually includes interviews with members of the faculty.

Students interested in the pre-medical record administration program are encouraged to consult with a health professions adviser in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office for more information. Bulletins describing the medical records administration requirements and program in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

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### Notes:

- Or equivalent honors courses
- Or equivalent general education courses
- Or equivalent courses in other fields of study
- Or equivalent credit from other sources
- Or equivalent credit from previous courses

### Freshman

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### Senior

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The two-year program prepares students to be admitted to the College of Pharmacy upon completion of 90 hours of a prescribed course of study in the College of Liberal Arts. Further information may be obtained from the Health Professions Office, 218 Ayres Hall.

The three-year and four-year programs, which lead to a Bachelor of Arts degree from the University of Tennessee, Knoxville, as well as to the professional degree in pharmacy from the UT Center for the Health Sciences, are based upon the program outlined below. In the three-year program, the student must complete at least 135 credit hours while enrolled in the College of Liberal Arts, and the B.A. degree is granted upon satisfactory completion of the first year of study at Memphis. In the four-year program the degree is granted upon completion of 180 or more credit hours while enrolled in the College, including a major of 36 or more hours in addition to the courses outlined below. The requirement for a major is waived for those taking their fourth year at Memphis. Students in either the three- or four-year program must complete the last 45 hours of credit in residence at the University of Tennessee, Knoxville, before enrolling in the College of Pharmacy.

**Freshman**
- English 1510-20 ........................................ 8
- Chemistry 1110-20-30 .................................. 8
- Mathematics 1550-60 or 1840-50 ....................... 8
- Psychology 2500 ........................................ 4
- Triad I (Language, Literature & the Arts) ............ 8
- Triad II (History & Society) ................................ 4
- Elective .................................................. 4

**Sophomore**
- Biology 1210-20-30 or Zoology 1118-28-38 ......... 12
- Chemistry 3211-21-31 & 3219-29-39 .................. 12
- Speech 2311 .............................................. 4
- Triad I .................................................... 8
- Triad II ................................................... 8
- Elective .................................................. 4

**Junior**
- Accounting 2110 ....................................... 3
- Physics 2210-20-30 ..................................... 12
- Triad I .................................................... 8
- Triad II ................................................... 8
- Electives ................................................ 8

**Senior**
- Completion of major program and B.A. requirements ........................................ 45

Completion of one year at the UT Center for the Health Sciences

Bulletins describing the three pre-pharmacy programs in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

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**Pre-Medical Technology Program**
Students planning to seek admission to the medical technology course of study at the UT Center for the Health Sciences in Memphis must complete 135 credit hours of prescribed courses while enrolled in the College of Liberal Arts. The program at Memphis is 12 months in length and leads to the degree of Bachelor of Science in Medical Technology from UTCHS. Classes are admitted in January and July and application must be made one year in advance.

Students interested in the medical technology program of study at UTCHS are encouraged to consult with a health professions adviser in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office for the specific requirements for admission.

Bulletins describing both pre-medical technology programs and requirements in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

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**Pre-Physical Therapy Program**
Admission to the physical therapy program at the UT Center for the Health Sciences, leading to the degree of Bachelor of Science in Physical Therapy from UTCHS, requires completion of 135 hours of prescribed courses while enrolled in the College of Liberal Arts. The program in Memphis is 15 months in length.

Students interested in the pre-physical therapy program are encouraged to consult with a health professions adviser in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office for more information. Bulletins describing the physical therapy program in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

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**Other Health Professions**
- Cytotechnology
- Health Information Technology
- Optometry
- Radiologic Technology
- Veterinary Medicine

A library of materials about career opportunities in the health professions, including most allied health areas, has been developed and is located in the Health Professions Office, 218 Ayres Hall. Academic advisers are available to assist students in planning their programs in order to meet the requirements for admission to other programs.

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**Bachelor of Fine Arts**
The Bachelor of Fine Arts degree represents intensive study preparing the student for graduate programs and careers relating to art. A minimum of 180 credit hours are required for graduation. Although there are no specific concentrations within the major, guidelines for the following recommended programs are available in the departmental office: (1) communication design, (2) drawing, (3) painting, (4) oil, (5) watercolor, (6) printmaking, and (7) sculpture. The Bachelor of Fine Arts degree and its major will be recorded as follows:

Bachelor of Fine Arts
Major: Studio Art

Core Curriculum:
The core program is required of all B.F.A. candidates. It is designed to give a broad art background, in both studio and art history, at the earliest possible time. This background, during the freshman and sophomore years, gives a foundation upon which the student may build, and an opportunity to become acquainted with the various artistic disciplines. This gives each student the understanding to better plan his or her own program during the remaining two years. Unless otherwise stated, the core program is nonsequential, but should be completed by the end of the first two years. Core courses are as follows:

Art History: Art 2715 ................................. 4
A minimum of 13 hours
other art history courses ............................ 13
STUDIO HONORS COURSES

Courses are designed for the exceptional student. Honors courses may be taken in any of the areas of studio instruction, and admittance is based on the following criteria:

A. Grade-point average of 3.2 in studio art courses
B. Portfolio of class and/or outside work
C. Recommendation of the studio faculty, and/or approval of the instructor

Continued participation is subject to periodic review by the faculty. Students qualified for honors courses will enroll in course numbers which most closely parallel their present level, i.e., sophomores in 2008, juniors in 3008, seniors in 4008. Each course number may be repeated for a maximum of 24 hours credit.

Bachelor of Music

The Department of Music offers the degree of Bachelor of Music with concentrations in Music Theory, Composition, Music History and Literature, Piano Literature, and Applied Music (voice—class organ—organ—woodwind, brass and percussion instruments—multiple woodwind instruments). The study is designed to prepare students for graduate study or for positions in music for which a professional degree is required.

Students who plan to work for this degree are assigned an adviser in the Department of Music at the time they enter the program. Continuation in the program at the 3000 level requires the achievement of an average of 2.5 or better on all music courses taken. The minimum requirement for the degree is 180 credit hours, including the specified courses outlined below.

Note: In addition to the concentrations offered in the Bachelor of Music curriculum, a major in music with a concentration in either Music History and Literature or Applied Music is available in the Bachelor of Arts curriculum.

MUSIC THEORY

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MUSIC HISTORY AND LITERATURE

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<tr>
<td>Senior Recital</td>
<td>0</td>
</tr>
<tr>
<td>Music History/Literature (3000-level and above)</td>
<td>3</td>
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<tr>
<td>Music Electives</td>
<td>6</td>
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<tr>
<td>Music 2000</td>
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<td><strong>TOTAL</strong>: 180 hours</td>
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<td><strong>VOICE</strong></td>
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<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td>English 1510-20</td>
<td>8</td>
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<tr>
<td>Music 1111-21-31</td>
<td>9</td>
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<tr>
<td>Music 1113-23-33</td>
<td>3</td>
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<tr>
<td>Music 1340</td>
<td>3</td>
</tr>
<tr>
<td>Principal Applied Study</td>
<td>12</td>
</tr>
<tr>
<td>Music 1010-20-30</td>
<td>3</td>
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<tr>
<td>Music 2000</td>
<td>0</td>
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<tr>
<td><strong>Sophomore</strong></td>
<td></td>
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<tr>
<td>Music 2111-21-31</td>
<td>9</td>
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<tr>
<td>Music 2113-23-33</td>
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<tr>
<td>Music 2310-20-30</td>
<td>9</td>
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<tr>
<td>Principal Applied Study</td>
<td>12</td>
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<tr>
<td>Music 1040-50-60</td>
<td>3</td>
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<tr>
<td>Ensemble</td>
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</tr>
<tr>
<td>Theatre 2121</td>
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<tr>
<td>Liberal Arts Elective</td>
<td>4</td>
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<tr>
<td>Music 2000</td>
<td>0</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>Music 2340</td>
<td>3</td>
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<tr>
<td>Music 3113-3123</td>
<td>6</td>
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<td>Principal Applied Study</td>
<td>12</td>
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<tr>
<td>Junior Recital</td>
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<tr>
<td>Foreign Language (French, Italian or German)</td>
<td>8</td>
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<tr>
<td>Theatre 2121</td>
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<td>Electives</td>
<td>9</td>
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<tr>
<td>Music 2000</td>
<td>0</td>
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<tr>
<td><strong>Senior</strong></td>
<td></td>
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<tr>
<td>Music 3012-22-32</td>
<td>6</td>
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<tr>
<td>Music 4012-22-32</td>
<td>3</td>
</tr>
<tr>
<td>Principal Applied Study</td>
<td>12</td>
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<tr>
<td>Senior Recital</td>
<td>0</td>
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<tr>
<td>Foreign Language (French, Italian or German)</td>
<td>8</td>
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<tr>
<td>Electives</td>
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<td>Music 2000</td>
<td>0</td>
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<tr>
<td><strong>TOTAL</strong>: 180 hours</td>
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College of Liberal Arts

Senior
Music Education 4430 .................................................. 3
Principal Applied Study ................................................. 12
Ensemble ........................................................................... 3
Senior Recital .................................................................... 0
Music Electives ................................................................. 6
Liberal Arts Electives ........................................................... 9
Electives ............................................................................. 8
Music 200 ........................................................................... 0

TOTAL: 180 hours

WOODWIND, BRASS, AND PERCUSSION INSTRUMENTS

Freshman
English 1510-20 ............................................................... 6
Music 1111-21-31 .............................................................. 9
Music 1113-23-33 ............................................................... 3
Music 1340 ........................................................................ 3
Principal Applied Study ..................................................... 12
Music 1010-20-30 .............................................................. 3
Liberal Arts Electives ........................................................... 4
Music 200 ........................................................................... 0

Sophomore
Music 2111-21-31 .............................................................. 9
Music 2113-23-33 ............................................................... 3
Music 2310-20-30 .............................................................. 3
Principal Applied Study ..................................................... 12
Music 1040-50-60 .............................................................. 3
Liberal Arts Electives ........................................................... 4
Music 200 ........................................................................... 0

Junior
Music 2340 ........................................................................ 3
Music 3112 ........................................................................ 3
Music 3113-23 ................................................................... 6
Applied Area Literature .................................................... 4
Principal Applied Study ..................................................... 6
Collateral Applied Study .................................................... 6
Ensemble ............................................................................ 3
Senior Recital ..................................................................... 0
Music Electives ................................................................. 6
Liberal Arts Electives ........................................................... 8
Electives ............................................................................. 12
Music 200 ........................................................................... 0

TOTAL: 180 hours

NOTE: The curricula in Strings; Woodwinds, Brass, and Percussion; Multiple Woodwinds; and Voice allow 12 hours of ensemble credit to apply toward Electives. This is in addition to the hours in Ensemble listed in the tabular resumes.

Bachelor of Science in Chemistry

Students who desire to major in chemistry may select either the curriculum leading to the degree of Bachelor of Arts or that leading to the degree of Bachelor of Science in Chemistry. This latter program is approved by the American Chemical Society and is designed to train students to go directly into positions in the chemical industry or to enter graduate study leading to positions in research and college teaching.

A minimum average of C must be made on all chemistry courses applied toward the Bachelor of Science in Chemistry degree.

COOPERATIVE PROGRAM IN CHEMISTRY

A cooperative program is available to students in the B.S. in Chemistry curriculum. After the freshman year the student alternates a quarter in school with a quarter in a job in a chemical industry. The program normally requires five years and involves a total of seven work quarters and twelve school quarters. Students are required to have at least a 2.5 average to enter and remain in the program. Some opportunity exists for students to enter the program later than the end of the freshman year. Students interested should make application to the head of the department at least one quarter in advance of the beginning of the first work period. Further information will be supplied on request.

MUSIC ELECTIVES

Principal Applied Study ..................................................... 6
Collateral Applied Study .................................................... 6
Music 1040-50-60 .............................................................. 3
Music 1113-23 ................................................................... 6
Applied Area Literature .................................................... 4
Principal Applied Study ..................................................... 6
Collateral Applied Study .................................................... 6
Ensemble ............................................................................ 3
Junior Recital ..................................................................... 0
Liberal Arts Electives ........................................................... 6
Electives ............................................................................. 6
Music 200 ........................................................................... 0

Senior
Music Education 4430 ..................................................... 3
Principal Applied Study ..................................................... 6
Collateral Applied Study .................................................... 6
Ensemble ............................................................................ 3
Senior Recital ..................................................................... 0
Music Electives ................................................................. 6
Liberal Arts Electives ........................................................... 8
Electives ............................................................................. 12
Music 200 ........................................................................... 0

Junior
Music 2340 ........................................................................ 3
Music 3112 ........................................................................ 3
Music 3113-23 ................................................................... 6
Applied Area Literature .................................................... 4
Principal Applied Study ..................................................... 6
Collateral Applied Study .................................................... 6
Ensemble ............................................................................ 3
Senior Recital ..................................................................... 0
Music Electives ................................................................. 6
Liberal Arts Electives ........................................................... 8
Electives ............................................................................. 12
Music 200 ........................................................................... 0

Senior
Music Education 4430 ..................................................... 3
Principal Applied Study ..................................................... 6
Collateral Applied Study .................................................... 6
Ensemble ............................................................................ 3
Senior Recital ..................................................................... 0
Music Electives ................................................................. 6
Liberal Arts Electives ........................................................... 8
Electives ............................................................................. 12
Music 200 ........................................................................... 0

TOTAL: 180 hours

MUSIC ELECTIVES

Multiple Woodwind Instruments

Freshman
English 1510-20 ............................................................... 8
Music 1111-21-31 .............................................................. 9
Music 1113-23-33 ............................................................... 3
Music 1340 ........................................................................ 3
Principal Applied Study ..................................................... 6
Music 1010-30 ................................................................... 3
Liberal Arts Electives ........................................................... 4
Music 200 ........................................................................... 0

Sophomore
Music 2111-21-31 .............................................................. 9
Music 2113-23-33 ............................................................... 3
Music 2310-20-30 .............................................................. 3
Principal Applied Study ..................................................... 12
Music 1040-60 ................................................................. 12
Liberal Arts Electives ........................................................... 6
Music 200 ........................................................................... 0

TOTAL: 180 hours

Mathematics 1840-50-60 or 1848-58-58 ......................................... 12
Language, Literature, Art Triad ............................................ 8
Writing Proficiency ............................................................ 8
Language, Literature, Art Triad ............................................ 8
History and Society Triad ................................................... 8

Sophomore
Chemistry 3211-21-31 ....................................................... 9
Physics 2510, 2310-20 ....................................................... 11
*Language, Literature, Art Triad ............................................ 8
History and Society Triad ................................................... 8

Junior
Chemistry 2140-49 ............................................................ 4
Chemistry 3410-20-30 ......................................................... 9
Chemistry 3429-39 ............................................................. 2
Chemistry 4210-20, 4219-29 ............................................... 8
Computer Science 3150 ..................................................... 3
*Language, Literature, Art Triad ............................................ 8
History and Society Triad ................................................... 8

Senior
Chemistry 4110 ................................................................. 3
Chemistry 4119 ................................................................. 1
Chemistry 4610-20 or 4610-30, one quarter of 4710-20-30 ....... 4
Chemistry 4420 ................................................................... 3
*Chemistry Electives .............................................................. 6
*Electives ............................................................................. 27

TOTAL: 185 hours

*Foreign language option is recommended in the order German, Russian, or French 1810-20.
*German 2530-40 or 2510-20 or Russian 2510-20 or French 2510-20 are recommended.
*To be chosen from the following: Chemistry 4430, 4550, 4640, 4710-20-30; Biochemistry 4110-20, 4230.
*At least 9 hours of these electives must be in a science other than chemistry; the rest may be in any area. Of the 9 hours of science other than chemistry, the following courses are recommended: Physics 3710-20-30, 4210-20-30-40, 4110-20-30; Mathematics 4610-20-30, 4540, 4560-60; Computer Science 4410-20-30; Geology 4610; Met. Engr. 4510-20, Botany 3300; Botany 3310.

Preparation For Other Professions

Law

Students who plan to study law should consult the statement regarding admission to the College of Law (page 149) and discuss their programs with advisors in the Liberal Arts Advising Center.

Library Science

Certain courses in the Graduate School of Library and Information Science are open to students in the College of Liberal Arts interested in beginning positions in a library or in preparation for future graduate study in professional librarianship. For further information, see page 42 or consult the Director of the Graduate School of Library and Information Science.
Public Administration

Students who wish to prepare for an administrative career in the public service are advised to take the following courses above those needed to satisfy the triad requirements. This special curriculum leads to a Bachelor of Arts degree with a major in Political Science augmented by extensive supportive work in Economics, Accounting and Finance.

Freshman
1Political Science 2510-20, 2530 (choose 8 hours) ........................................... 8
2Economics 2110-20-30 ...................................................................................... 6

Sophomore
3Economics 2110-20-30 ...................................................................................... 9

Junior
4Political Science 3565-66 ................................................................................... 8
5Political Science 3545-46 or 3801-02-23-04 ......................................................... 8
6Economics 3340 .................................................................................................. 3
7Accounting 2110-2120, 2210 ............................................................................. 3
8Senior
9Political Science 4610-20 ................................................................................... 6
10Political Science 4410-20 ................................................................................... 6
11Economics 3410 ................................................................................................ 3
12Accounting 3510 .............................................................................................. 3
13Finance 4530-60 ............................................................................................... 6

Detailed information regarding the curriculum in public administration may be obtained in the office of the Department of Political Science.

Social Work

Students who wish to prepare for graduate professional training in social work will find a brief description of the program of the School of Social Work on page . Detailed information about courses and curricula, as well as requirements for admission, will be found in the catalog of the School of Social Work.

Teaching

Students in the College of Liberal Arts who wish to be certified for secondary school teaching must satisfy state certification requirements as well as all degree requirements of the College of Liberal Arts, and must be recommended for certification by the College of Education. The College of Education is approved by the National Council for Accreditation of Teacher Education (NCATE); recommendation for certification by the College therefore in effect certifies the student in thirty states. Application for admission to the Teacher Education Program should be made during the second or third quarter of the sophomore year in the office of the Dean of the College of Education, 212 Claxton Education Building. Criteria for admission are: (1) a 2.2 cumulative grade-point average; (2) satisfactory ratings in speech and hearing as determined by tests administered by the Speech and Hearing Center; (3) recommendation of the student's adviser.

One quarter during the senior year must be reserved for student teaching (Education C&I 4710-20). Application for student teaching must be filed not later than December 31 of the year preceding the academic year in which the student teaching will be undertaken. Those planning to teach during the 1976-77 academic year must apply by December 31, 1975.

Cursu for students seeking teacher certification should include the following:
1) English 1510-20 or 1518-28
2) 16 hours representing at least 3 fields, including:
   (a) 4 hours of 2000-level English
   (b) 12 hours of the student's choice from anthropology, art, English literature, Library and Information Science 3510-20-30, foreign language (beyond the elementary level), history (upper division), music, philosophy, or religious studies
3) Language, Literature, and the Arts: 0-24 hours, the number of hours and course of courses depending upon the options selected and the choices made in (2) above
4) History and Society:
   (a) One of the 8-hour historical sequences in category (a) of the triad list
   (b) Psychology 2500 or 2518
   (c) 4 hours from anthropology, economics, geography, human services, political science or sociology courses on the triad list
   (d) 0-8 additional hours of the student's choice from courses on the triad list, the number of hours depending upon choices made in (2) above
5) Science and Mathematics:
   (a) One of the 8-hour natural science sequences in category 1 or 2 of the triad list
   (b) 4 additional hours of natural science courses in categories 1 and 2
   (c) 4 hours of mathematics courses in category 4
   (d) 8 additional hours of the student's choice from courses on the triad list
   (e) Speech 2341
6) 7 hours in health and physical education, including at least 3 hours of school health, public health, nutrition and 2 hours of physical education
7) Professional Education courses:
   (a) Education C&I 3010-20-30
   (b) Educational Psychology 3810
   (c) 6 hours of appropriate methods courses
   (d) Education C&I 3521-22-23
   (e) Education C&I 4710-20 (student teaching)
   (f) 6 hours of electives from the College of Education
9) Additional courses necessary to complete Liberal Arts major(s)
10) Additional courses required for certification in teaching subject area(s) (Consult Certification Clerk, 212 Claxton Education Building)
11) Electives to reach total of 180 hours, including at least 60 upper division hours, required for graduation

NOTE: The same course may be applied both to certification requirements and to triad or major requirements of the College of Liberal Arts.

Theology

Students planning to study theology should follow one of the Bachelor of Arts curricula. Any liberal arts major is acceptable for admission to most theological schools; strong preparation in literature, philosophy, history, religious studies, and social science is desirable. Students may wish to consult with faculty members in the Department of Religious Studies in planning their programs.

General Information

Admission to the College

For information regarding admission to the College of Liberal Arts, see page 17.

Course Load

The average course load in the College for any quarter is 14-16 credit hours. The University defines full-time undergraduate students as those who register for a minimum of 12 hours. The maximum number of hours which may be taken by Liberal Arts students is 17, exclusive of elective work in ensemble music and Physical Education. Exceptions to this rule will require approval by the Assistant Dean for Student Academic Affairs (218 Ayres Hall). The 17 credit limit was one of three means chosen to implement a 1972 decision by the College faculty to reduce the average number of courses carried by students. A second means has been to introduce four-credit courses into the curriculum on a broader scale than ever before. Using such courses the credits achieved by students each quarter would remain substantially the same as in quarters prior to this innovation but would be generated with fewer courses. A final means has been to decrease the total number of hours required for the degree. The goal of the load reduction is to provide an opportunity for a deeper, more thorough learning experience in the courses which are taken.

Lower Division — Upper Division

Courses numbered at the 1000 and 2000 levels are considered Lower Division and are normally taken by students in the freshman and sophomore years. Courses numbered 3000 and above are Upper Division and are designed for students at the junior and senior level.

Off-Campus Study

Recognizing that learning is not restricted to formal classroom situations, the College provides for students to earn credit toward graduation for approved off-campus study. Such study may be undertaken only with prior approval of the faculty member and the department concerned. It may include certain kinds of work experiences, community involvement, working in political campaigns, etc. Credit per quarter will vary from 1-16 hours. Up to 24 hours of credit earned in this way may be applied toward a degree in the College of Liberal Arts, although individual departments may limit the number of hours which may be applied toward a specific major.
Independent Study

Certain educational goals may best be met through independent study done by an individual under the direction of a faculty member. Students who wish to do such independent work should obtain the approval of the faculty members and the departments concerned prior to their study. Credit per quarter will vary from 1-16 hours. Up to 24 hours of credit earned in this way may be applied toward a degree in the College of Liberal Arts, although individual departments may limit the number of hours which may be applied toward a specific major.

Study Abroad and Foreign Study Courses

Several opportunities for study abroad are available to students in the College of Liberal Arts. One avenue is through group programs arranged and supervised by departments of the College on a full-quarter or summer-term basis. A second is through group programs conducted abroad by other academic institutions to which UTK students may wish to apply for credit. Assistance in identification and registration in such programs may be obtained through the Overseas Study Information Service located in the University's Division of International Education. A third opportunity is through individualized programs undertaken by the foreign student number 4101. The nature of this work as well as its credit for it should be negotiated by students prior to departure with the appropriate Liberal Arts departments. Credit will be awarded only after completion of all approved undergraduate requirements and may vary from 1-16 hours in any one department. Up to 24 hours of such credit, exclusive of that earned in group programs offered by departments, could apply toward a degree in the College. Departments may, in any of the above forms, however, limit the hours of credit which can be applied toward a given major.

Liberal Arts Advising Center

Academic advising for students of the College is offered through the Liberal Arts Advising Center, 220 Ayres Hall, as well as through the several major departments. The Advising Center is staffed on a regularly scheduled basis by members of the College faculty. Each of whom has been trained for this specialized work. Students in their first quarter of residence are assigned to the Advising Center, where they may relate themselves to a particular adviser of their choice or consult the person on duty at the time they need assistance. Most students continue in this relationship to the Advising Center until they have determined their major, normally by the beginning of the junior year, at which time they may be transferred for advising to a faculty member in the major department.

Student Academic Affairs Office

Academic assistance for students is also provided through the Student Academic Affairs Office, 218 Ayres Hall. This office serves primarily those students not assigned to the Liberal Arts Advising Center, helping them meet a variety of academic needs relating to the development of their academic programs, satisfying graduation requirements, etc. For those who are planning careers in the health sciences it provides a liaison with the Medical Units at Memphis. Each quarter the Student Academic Affairs Office issues the Liberal Arts Quarterly Bulletin in order to keep students informed about changes in the College curriculum as well as matters relating to registration, courses, and requirements.

Office of Black Studies

The Office of Black Studies, 1629 Melrose Avenue, cooperates with the various departments and colleges of the University with respect to the development of curricular changes and innovations which incorporate the Black experience into academic and extracurricular programs of the institutions, supplies information on financial assistance for Black students, and serves as the focal point for the coordination and development of an improved and expanded Black Studies Program at the University.

Bureau of Public Administration

The University has established in the College of Liberal Arts a Bureau of Public Administration, for the purpose of promoting sound governmental administration through research, publication, and consultation. Offices and staff are maintained in both Knoxville and Nashville. The Head of the Department of Political Science serves as Director of the Bureau of Public Administration.

Psychological Clinic

The Psychological Clinic is an outpatient psychodiagnostic and treatment center established by the University within the Department of Psychology. It provides advanced graduate training for students in clinical psychology and also serves as a training facility for graduate students in the School of Social Work. Referrals for treatment come from many sources, including self-referrals and referrals by relatives and friends and by various social and mental health agencies. Treatment services are available to anyone regardless of place of residence, sex, age, race, or citizenship.

University Theatres

The Department of Speech and Theatre offers a full schedule of dramatic presentations in three different theatres. The Clarence Brown Theatre has outstanding facilities for prosenium and open staging and for film productions, and, in a separate Studio Theatre, for laboratory productions. Carousel Theatre is designed for arena staging, and can be converted for open-air performances in the summer. Hunter Hills Theatre, located in the foothills of the Great Smoky Mountains near Gatlinburg, is an outdoor theatre in which performances are offered during the summer months.

Instructional Facilities

The College of Liberal Arts carries out its varied teaching and research activities in more than two dozen principal buildings in two areas of the campus, as well as in a number of converted residences which provide office, studio, or clinical space. The older of the two clusters of buildings is on "the Hill," and includes Ayres Hall (psychology and mathematics), South College (psychology), Hepler (biological sciences), Physics (physics and astronomy), Geology-Geography (geology and geography), and Dabney and Buehler (chemistry). West of "the Hill" is a recently built group of buildings for the humanities, social sciences, and fine arts: McClung Tower and the Humanities-Social Sciences classroom building (classics, English, foreign languages, history, human services, philosophy, political science, religious studies, sociology, and speech and theatre), the Music Building (music), and the Hearing and Speech Center (audiology and speech pathology). In this area also are the McClung Museum and the Clarence Brown and Carousel Theatres, as well as the Undergraduate Library. Anthropology is housed in South Stadium, and art utilizes several small buildings for its studios.

College Offices

The College Administrative Office is in 226 Ayres Hall and houses the office of the Dean/Associate Dean as well as the office of Curriculum and Special Programs. The Student Academic Affairs Office is in 218 Ayres Hall, The Liberal Arts Advising Center is in 220 Ayres Hall.

Departments of Instruction

Numbers in parentheses following the course titles indicate quarter hours credit offered.

American Studies

See Cultural Studies.

Anthropology (122)

Professors: W. M. Bass (Head), Ph.D. Pennsylvania; A. K. Guth, Ph.D. Michigan; P. W. Parmalee, Ph.D. Texas A & M.

Associate Professors: C. H. Faulkner, Ph.D. Indiana; L. Harrison, Ph.D. Syracuse; R. L. Jantz, Ph.D. Kansas; H. M. Lindquist, Ph.D. Kansas; N. F. Reid, Ph.D. Vienna.

Assistant Professors: F. H. Smith, Ph.D. Michigan; P. M. Thomas, Jr., Ph.D. Tulane.

Research Associate Professor: M. C. R. McCollough, Ph.D. Pennsylvania.

Research Assistant Professor: G. F. Schroedl, Ph.D. Washington State.

UNDERGRADUATE

A major in anthropology consists of 39 hours, including the 2510, 2520 and 2530 introductory courses. Of the remaining 27 hours, majors are required to take a minimum of six hours of 3000-level or above courses in each of these subfields: Physical Anthropology, Archaeology, and Cultural Anthropology.

A minor in anthropology consists of 27 hours including the 2510, 2520, 2530 introductory courses.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under
the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

2510 Human Origins (4) Non-technical survey of man's primate background, fossil primates, fossil man, and living races of mankind.

2520 Prehistoric Archaeology (4) Survey of prehistoric culture with specific emphasis on method and theory in archaeology; prehistory of western Europe and Africa; and archaeology in Americas.

2530 Human Culture (4) Introduction to ethnology: Survey of nature of culture and society and similarities and differences in man's material culture, social, economic, and political organizations, his ideology, art, and language.

2540 Genetics and Society (3) (Same as Botany 3070.)

3410 Principles of Cultural Anthropology (3) Basic concepts and objectives in study of culture. Range of cultural phenomena and approaches to its study.

3420 Religion of Primitive Peoples (3) Religions of nonliterate peoples. Place of religion in their social and cultural systems.

3450 Community Studies in Complex Culture (3) Revolution, comparative urban and village communities and methodologies used in community studies. 2530 recommended.

3490 African Religions (4) (Same as Religious Studies 3490.)

3510 Peoples and Cultures of Mainland Asia (3) Ethnographic survey of indigenous cultures of mainland Asia. Cultural diversity and human ecology in a real perspective.

3520 Peoples and Cultures of South America (3) Ethnographic survey of aboriginal cultures of South America.

3530 Peoples and Cultures of Africa (3) Ethnographic survey of aboriginal cultures of sub-Saharan Africa. Cultural diversity and human ecology in a real perspective.

3540 North American Indians (3) Ethnographic survey of cultures of Arctic, Pacific, Plains, and Eastern areas. Emphasis on cultural differences of peoples occupying these areas during pre-colonial period. Prereq: 2530 or permission of instructor.

3555 Cherokee Ethno History (3) Survey of socio-political aspects of internal affairs and external relationships from first European contact to present. Emphasis on 18th and 19th centuries.

3560 Peoples and Cultures of Oceania (3) Survey of nonliterate societies and cultures in Indonesia, Australia, Micronesia, Melanesia, and Polynesia. Migrations and settlement. Prereq: 2530 or permission of instructor.

3580 Peoples and Cultures of Mesoamerica (3) Ethnographic survey of aboriginal peoples and post-conquest changes in Indian cultures. Emphasis on analysis of small rural communities using modern village studies as source material.

3610 Archaeology of United States and Canada (3) Survey of prehistoric peoples north of Mexico from initial occupation to European contact. Prereq: 2530 or permission of instructor.

3620 European Prehistory I (3) Cultural development of Northern, Central, and Mesoamerican, Neolithic and Neolithic periods.

3630 European Prehistory II (3) Cultural development of Europe following Mesolithic, Neolithic, through Iron Age. Prereq: 2520 or permission of instructor.

3640 Ancient Civilization of Mesoamerica (3) Introduction to archaeology of areas of advanced Indian culture in Mexico and Central America beginning with earliest cultures and proceeding to contact with Europeans. Prereq: 2520 or permission of instructor.

3710 European Folk Culture (3) Traditional aspects of life as expressed in technology, beliefs, art, and folklore, under changing historical and socio-economic conditions.

3800 Language and Culture (3) Relationship between linguistic categories and patterns of culture. Knowledge of linguistics not required.

3811 Introduction to Museology (3) (Same as Art 3811.)

3900 Human Osteology (4) Intensive examination of the human skeleton. Prereq: 2510 or permission of instructor. 3 hrs and 1 lab.

3920 Principles of Physical Anthropology (3) Survey of materials and methods in physical anthropology.

3930 The Biology of Races of Man (3) Processes of racial differentiation; criteria of significant differences among existing stocks; influence of biology and culture in the study and study of racial and racial differences concerning blood groups, race mixture, constitution growth and nutrition. Prereq: 2510 or permission of instructor.

3950 Human Identification (3) Introduction to techniques of identification of human skeletal material in Forensic Medicine.

4101 Foreign Study (1-16) See page 162.

4102 Off Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4200 Contemporary North American Indians (3) Survey of Indian cultures from initial Euro-American contact to present; emphasis on culture change, U.S. Government Indian policy, reservation life. Prereq: 2530, 3540 or permission of instructor.

4210 Ethnographic Research Techniques (3) Methods of collecting, ordering, and utilizing data. Prereq: Permission of instructor.

4240 Applied Cultural Anthropology (3) Applications of anthropological theory, methods and findings in programs of community and national development, public health, international aid, and military assistance. Examination of roles of anthropologists in conflict resolution, ethics in intervention schemes, and of organization of planned change in applied programs. Intensive analysis of selected case studies.

4250 Medical Anthropology: Lecture (3) Survey of medical anthropology and its emphasis on Western and non-Western cultures of health, disease, treatment, death, and related concepts. Focus on analyses and descriptions of anthropological fieldwork.

4259 Medical Anthropology: Laboratory (3) Fieldwork in medical anthropology. Emphasis on cultural aspects of health, disease, and death in industrial societies and folk medicine systems which co-exist with Western, technical medicine. Coreq or prereq: 4250.

4300 Readings in Anthropology (1-9) Intensive reading, problem oriented. For anthropology majors with senior standing. Others by permission of instructor. May be repeated to a maximum of 9 credit hrs.

4300 Field Work in Archaeology (3-9) Practicum work surveying, excavating, processing, and analyzing of data; intensive reading. Prereq: 2510-20, 30-30, and 3540 or permission of instructor. May be repeated to a maximum of 9 credit hrs.

4300 Field Work in Cultural Anthropology (3-9) Practicum devoted to fieldwork methods, ethnographic fieldwork reporting, survey and interview techniques, and devising and carrying out one project of fieldwork. Prereq: 2510-20-30 and permission of instructor. Strongly recommended: 4210. May be repeated to a maximum of 9 credit hrs.

4360 Field Work in Physical Anthropology (3-9) Practicum in collection and analysis of human biological data. May include either skeletal or living populations. Prereq: 2510-20-30, and permission of instructor. May be repeated to a maximum of 9 credit hrs.

4410 Non-Western Education: Anthropological Approaches (3) Analysis of problems resulting from application of Western models of education in developing societies and in aboriginal communities within industrialized societies (e.g. American Indians).

4420 Dynamics of Culture (3) Culture change: innovation, diffusion and acculturation; cultural continuity and stability. Prereq: 2530 or permission of instructor.

4430 Personality and Culture (3) Analysis of relation between individual, society and culture. Application of psychological techniques in cross-cultural studies. Cultural differences and their influence on group behavior. Prereq: 2530 or permission of instructor.

4440 Urban Anthropology (3) Survey of theoretical and methodological issues anthropologists encounter researching cross cultural urban settlements. Focus is on anthropological perspective and urban problems and planning. Prereq: 3450 or permission of instructor.


4490 Cross-Cultural Survey of Sex Roles and Behavior (3) Examination of sex roles and sex behavior from cross-cultural and diachronic viewpoints. Draws disparate and scattered studies together and attempts to arrive at conclusions on questions as how sex roles are learned, the parameters of acceptable sexual behavior and degrees of tolerance for sexual deviation in various cultures.

4500 Peoples of China I: Chinese Society Before 1839 (3) Anthropological survey of Chinese society and culture during pre-Shang, dynastic, and early Western contact periods. Prereq: 2530 or permission of instructor. Recommended: 3510 or an East Asian course.

4510 Peoples of China II: Chinese Society After 1839 (3) Anthropological survey of Chinese society and culture in the period of Western contact, rejection of the West, and development of modern, communist Chinese society and culture. Prereq: 2530, 3540 or permission of instructor. Recommended: 4500 or an East Asian course.

4550 Indians of the Southeastern United States (3) Survey of Southeastern Indian cultures; emphasis on aboriginal adjustment to environment; lifeways of Southeastern Amerindian groups prior to Euro-American contact. Prereq: 2530, 3540 or permission of instructor.

4560 Cherokee Ethnology (3) Intensive survey of ideology and material aspects of Cherokee culture existing at time of first European contact.

4570 Peoples of Southeast Asia (3) Survey of representative ethnic groups and indigenous cultures of mainland and island Southeast Asia. Problems of contemporary culture changes. Prereq: 2530, permission of instructor, or an East Asian course.

4580 Asians in the Americas Since 1800: Anthropological Specifiers, Major Historical factors, and motivations in Asian immigration to North, Central and South America. Assimilation patterns and enclaves are major topics. Major focus is on United States.

4590 Peoples of Japan (3) Analysis of cultural diversity and unity of peoples of Japan. Prereq: 2530 or permission of instructor. Recommended: 3510 or an East Asian course.
4800 Method and Theory in American Archaeology (3) Historical development of New World archaeology with emphasis on theory and field techniques. Prereq: 2520 or permission of instructor.

4810 African Prehistory (3) Survey of cultural history in Africa, south of the Sahara, from earliest evidence of human activity to time of European contact. Prereq: 2520 or permission of instructor.

4840 Zoarchaeology (3) Basic osteological studies of vertebrate classes; emphasis on aboriginal man's utilization of native animals in his subsistence and culture. Identification, analysis, and interpretation of archaeologically derived molluscan and vertebrate remains.

4850 Archaeology of Southeastern United States (3) Intensive study of prehistoric American Indian. Special emphasis on Tennessee prehistory. Prereq: 3610 or permission of instructor.

4740 Southern Appalachian Folk Culture (4) Research-oriented course dealing with wide range of traditional culture in Southern Appalachia: settlement patterns, folk housing, economy, clothing, belief, speech, art, song, dance, and oral traditions and customs. Prereq: permission of instructor. May be repeated for credit.

4870 Cherokee Language (3) Linguistic survey of structure of the Cherokee language.

4930 Physical Growth and Constitution (3) Comparative growth patterns throughout the life cycle of man, skeletal and dental maturation; sex differences in growth; human constitutional types. Prereq: 2510 or permission of instructor. Biology 2110 strongly recommended.

4950 Primate Studies (3) Survey of field and laboratory investigations of comparative anatomy and non-human primate behavior. Prereq: 2510 or permission of instructor.

4960 Primate Paleontology (3) Survey of fossil primate forms; origin and evolution of major primate lineages, emphasizing the earliest Hominid and related forms. Prereq: 2510. Recommended: Zoology 4380.

4970 Human Paleontology (3) Survey of major human fossil forms and interpretation of human phylogeny. Emphasis on Pleistocene and more recent Hominid forms and factors which shaped them into modern man. Prereq: 2510. Recommended: 4980 and Zoology 4380.

GRADUATE
Master's Program

The general requirements for the Master's degree are given in the Graduate Catalog. 5000 Thesis
5010 Graduate Research (1-9)
5100 Seminar in Cultural Anthropology (3, 3, 3)
5140 Seminar in Zoarchaeology (3)
5149 Laboratory Studies of the Vertebrate Skeleton (3)
5160 Seminar in Archaeology (3-6)
5340 Fieldwork in Archaeology (3-9)
5400 History of Anthropological Theory (3)
5440 Peasant Societies (3)
5450 Comparative Social Organization (3)
5510 Seminar in Ethnology of Western North America (3)
5600 Theory in Archaeology (3)
5610 Problems in North American Archaeology (3)
5620 Problems in Old World Archaeology (3)
5630 The Maya (3)
5660 Seminar in Prehistoric Lithic Technology (3)
5700 Theory in Folk Culture Studies (3)
5710 Problems in Folk Culture Studies (3)
5910 Measurement of Man (3)
5920 Advanced Physical Anthropology (3)

5930 The Human Skeleton in Forensic Medicine (3)
5940 Skeletal Biology of Early Human Population (3)
5950 Paleopathology (4)
5960 Dermatoglyphics (3)
6410-20-30 Seminar in Cultural Anthropology (3, 3, 3)
6480 Seminar in Social Structure (3)
6970 Seminar in Human Paleontology (3)

Arabic
See Romance Languages.

Archaeology-Greek And Roman
See Classics.

Art (140)

Professors:

Associate Professors:
P. R. Livingston, M.F.A. Wisconsin; F. H. Martinson, Ph.D. Chicago; B. G. McKeever, M.F.A. Tulane; C. C. Sublett.

Assistant Professors:

Instructors:
W. L. Calman, M.F.A. Tyler School Temple University; L. R. Soloway, M.F.A. Iowa; T. J. Riesen, M.F.A. Nebraska.

Art has two aspects: history of art and practice of art. Knowledge of the practice of art is required of history majors; knowledge of art history is required of studio majors.

The department reserves the right of acquisition of student studio work.

UNDERGRADUATE

Major: Art History—Consists of 36 hours in Art History courses numbered above 2000. Courses numbered above 2000 in the following areas may be included also in the 36 hours: Greek and Roman art and archaeology, aesthetics, history and theory of architecture (School of Architecture), and up to eight hours in studio courses in the Department of Art. Undergraduate work in Art History is enhanced by a knowledge of at least one foreign language. Graduate work normally requires a reading knowledge of at least two foreign languages.

Major: Art (Concentration in Studio) - Art 1115-25-35 and Art 2715, and eight additional hours of art history are prerequisite to a major of 36 hours of courses numbered 2000 and above, including a minimum of 21 hours in upper division courses.

Minor: none offered.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for the various majors or minors in Art in the 1972-73, or earlier general catalog.

For information regarding the Bachelor of Fine Arts degree, see page 157.

1115-25-35 Studio Fundamentals (4, 4, 4) 1115—Drawing and the illusion of space; 1125—Surface composition and color; 1135—Real space and volume. For art, architecture, related arts and art education majors. Others with permission of instructor only.

1815-25 World Art (4, 4) A survey; 1815—pre-history to 1400; 1825—1400 to present.

2008 Honors: Art (4) Intensified study for the exceptional student. May be repeated for a maximum of 24 credit hrs.

2105 Introduction to Drawing (4) Prereq: 1115.

2115 Drawing II (4) Prereq: 2105. May be repeated for a maximum of 8 credit hrs.

2116-17 Intermediate Design (4, 4) 2116—Motion picture as primary tool of research; 2117—Color theory and application. Prereq: 2117. 1115-25-35.

2205 Introduction to Painting (4) Oil, acrylic and watercolor. Prereq: 1115-25-35 for art majors.

2215 Painting II (4) Oil and acrylic. Prereq: 2205. May be repeated for a maximum of 8 credit hrs.

2315 Watercolor II (4) Prereq: 2205. May be repeated for a maximum of 8 credit hrs.

2405 Introduction to Sculpture (4) Prereq: 1115-25-35 for art majors.

2415 Sculpture II (4) Prereq: 2405. May be repeated for a maximum of 8 credit hrs.


2515-25 Graphic Design (4, 4) 2515—Lettering and layout; 2525—Production. Prereq: 2505 for 2515; 2515 for 2525.

2516 Advertising Design (4) Fundamentals of lettering and layout for newspaper, magazine, television, and outdoor advertising. Non-art majors only.
2545-55-65 Photo-Graphica (4, 4, 4) Introduction to art of Photography.

2605 Introduction to Printmaking (4) Relief, Intaglio, serigraphy. Prereq: 1115-25-35 for art majors.

2615 Intaglio II (4) May be repeated for a maximum of 8 credit hrs.

2616 Lithography II (4) May be repeated for a maximum of 8 credit hrs.

2617 Serigraphy (4) May be repeated for a maximum of 8 credit hrs.

2715 Survey of Contemporary Art (4) 1945 to present.

2725 Black Art (4) Black artists in society. Emphasis on contemporary art forms.


3008 Honors: Intermediate Art (4) Intensified study for the exceptional student. May be repeated for a maximum of 24 credit hours.

3115 Drawing III (4) May be repeated for a maximum of 12 hours. Prereq: 8 hours of 2115.


3215 Painting III (4) May be repeated for a maximum of 12 hours. Prereq: permission of instructor.

3315 Watercolor III (4) May be repeated for a maximum of 12 hours credit. Prereq: permission of instructor.

3415 Sculpture III (4) May be repeated for a maximum of 12 hours.

3515 Visual Communications I (4) Graphic design: theory and techniques of problems solving for printed material. Prereq: 2525.

3516 Typographic Art (4) Principles of graphic design, theory and technique of typographic design. May be repeated for a maximum of 12 hours.

3517 Airbrush (4) Techniques and creative applications. May be repeated once for credit.

3525 Visual Communications II (4) Advanced pictorial perception, concepts, methods, and techniques for designer. Prereq: 3525.


3615 Intaglio III (4) May be repeated for a maximum of 12 hours.

3616 Lithography III (4) May be repeated for a maximum of 12 hours.

3617 Serigraphy III (4) May be repeated for a maximum of 12 hours.

3705 Northern European Painting: 1350-1600 (4) Painting and printmaking of the Low countries, France, Germany, and England. Includes international style manuscripts, Van Eyck, Bosch, Dürer, Holbein, and Bruegel.

3715 Early Italian Renaissance Art: 1300-1500 (4) Painting, sculpture, and architecture. Includes Giotto, Masaccio, Donatello, Brunelleschi, Alberti, Botticelli, and Leonardo.

3716 Late Italian Renaissance Art: 1500-1600 (4) Painting, sculpture, and architecture. Includes Leonardo, Raphael, Michelangelo, Bramante, Titian, and the Manierists.

3725 History of Baroque and Rococo Art I (4) Art and architecture of Italy, Spain, Portugal, and Latin America in Seventeenth and Eighteenth centuries. Emphasis on Caravaggio, Bernini, Borromini, El Greco, Valasquez, Zurburán, and Montesinos, urban development of Rome, and artistic relations between Iberia and Latin America.


3735 History of Nineteenth Century Painting in Europe and America (4)

3736 History of Twentieth Century Painting in Europe and America (4)

3745 History of Modern Architecture in Europe and America (4)

3746 History of Modern Sculpture in Europe and America (4)

3755-56-57 Studies in Art History (4, 4, 4) Concentration in selected areas. Prereq: 12 hours of art history or permission of instructor.

3765 History of American Art (4) Art from the Colonial Period to present day.

3775-76-77 History of Art in Asia (4) Art of Indian Asia and the Far East. 3775-Indian Asia; 3776-China; 3777-Japan.

3811 Introduction to Museology (3) Concepts, practices and historical development of museums of art, archaeology, anthropology and science. (Same as Anthropology 3811).

3945 Cinematography (4) Familiarization with photographic processes and basic production techniques, artistic potential of film, aesthetic problems and challenges of the medium. May be repeated for a maximum of 12 hours.

4008 Honors: Advanced Art (4) Intensified study for the exceptional student. May be repeated for a maximum of 24 credit hrs.

4015 Individual Problems (4) May be repeated for a maximum of 12 hours credit. Prereq: permission of instructor.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4115 Drawing IV (4) May be repeated for a maximum of 12 hours. Prereq: 12 hours of 3115.

4215 Painting IV (4) May be repeated for a maximum of 12 hours. Prereq: permission of instructor.

4315 Watercolor IV (4) May be repeated for a maximum of 12 hours. Prereq: permission of instructor.

4415 Sculpture IV (4) May be repeated for a maximum of 12 hours.


4545 Visual Communications Seminar (2) Political, social, economic, and moral problems of contemporary designer. Prereq: 4515.

4615 Intaglio IV (4) May be repeated for a maximum of 12 hours.

4616 Lithography IV (4) May be repeated for a maximum of 12 hours.

4617 Serigraphy IV (4) May be repeated for a maximum of 12 hours.

4855-56-57 Reading and Research in Art History (2, 2, 2) Individual problems. Prereq: 16 hours of Art History, junior or senior standing, and permission of instructor.

4875-76-77 Studies in Oriental Art History (4, 4, 4) Concentration in selected areas.

GRADUATE

There are two advanced degrees available in this department: Master of Arts and Master of Fine Arts. In addition to meeting requirements of the Graduate School, applicant must have an undergraduate major in art or outstanding proficiency. Examples of his work will be requested. For additional information regarding these programs, write to the head of the department.

5011-21-31 Exhibition in Lieu of Thesis (3, 3, 3)

5110-20-30 Drawing and Composition (3, 3, 3)

5140 Drawing and Composition (3, 3, 3)

5210-20-30-40-50-60 Oil Painting (3, 3, 3, 3, 3, 3)

5310-20 Watercolor Painting (3, 3, 3)

5340-50-60 Watercolor (3, 3, 3)

5410-20-30-40-50-60 Sculpture (3, 3, 3, 3, 3, 3)

5510-20-30-40-50-60 Communication Design (3, 3, 3, 3, 3, 3)

5610-20-30 Intaglio (3, 3, 3)

5611-21-31 Lithography (3, 3, 3)

5612-22-32 Serigraphy (3, 3, 3)

5770 Seminar in Art History (3)

5855-56-57 Reading and Research in Art History (2, 2, 2)

5900 Seminar in Art Criticism (3)

Asian Studies

See Cultural Studies.

Astronomy

See Physics and Astronomy.

Audiology And Speech Pathology

(160)

Professors:

H. L. Luper (Head), Ph.D. Ohio State; S. Adler, Ph.D. Ohio State; C. W. Asp, Ph.D. Ohio State; D. M. Lipson, Ph.D. Washington; H. A. Peterson, Ph.D. Illinois; B. Silverstein, Ph.D. Purdue.

Associate Professors:

P. J. Carney, Ph.D. Iowa; I. V. Nabelek, Ph.D. Czech Technical, Prague.

Assistant Professors:


Instructors:


UNDERGRADUATE

General Information. One of mankind's most significant developments has been the acquisition of organized systems of communication. Basic to most human language systems has been dyadic oral-aural communication. The Department of Audiology and Speech Pathology offers course work in the scientific study of oral-aural communication with special attention to variations considered normal or different. Many of the courses offered in the department cover information that should be valuable to students planning to enter any social service discipline. Suggested electives for non-departmental majors include: 3040, 3060, 3200, 4610, 4710, 4730 and 4750.
Majors: The two majors (Audiology and Speech Pathology) allow the student to select among 3 or more concentrations. Note carefully the distinction in requirements for each of the concentrations within each major. Students should consult with a departmental advisor concerning recommended electives. All concentrations within the department are pre-professional; that is, they are preparatory to graduate work and to professional certification in some aspects of communicative disorders. The Master's Degree is required for most professional certificates and employment positions. Students desiring school certification in speech and hearing or education of the deaf should consult the Department of Special Education and Rehabilitation for specific requirements.

A major in Audiology may be met by completing the requirements for either of the following two concentrations:

A. Concentration in Clinical Audiology. Consists of Audiology and Speech Pathology 3040, 3060, 4710, 4720, 4740, 4930, 4450 plus not less than 15 or more than 35 credit hours from the following: 3050, 3200, 3310, 4040, 4060, 4420, 4470, 4370, 4730, 4930, 4940; Psychology 2500, 2520.

B. Concentration in Auditory Rehabilitation. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 3310, 4040, 4060, 4450, 4610, 4710, 4720, 4730, 4740, 4930, 4940.

A major in Speech Pathology may be met by completing one of the following concentrations:

A. Concentration in Clinical Speech Pathology. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 4650, 4710; Psychology 2500, 2520; Anthropology 2530, 3410, Sociology 3220, 3330, and CDFR 4810.

B. Concentration in Cultural Language Differences. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 4650, 4710; Psychology 2500, 2520; Anthropology 2530, 3410, Sociology 3220, 3330, and CDFR 4810.

C. Concentration in Pediatric Language Disorders. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 4040, 4060, 4610, 4710, 4720, 4740, and 4940; Special Education 4110, 4120, 4310, and 4610.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in Audiology or Speech Pathology in the 1972-73 or earlier general catalog.

3040 Introduction to Speech Pathology (3) Nature, etiology, and incidence of speech and language disorders.

3050 Phonetics (3) Recognition and production of sounds of spoken English, with analysis of their formation.

3080 Speech Science I (3) Nature of speech science: basic outline of communication; acoustic characteristic of speech; speech perception. Prereq: 3040 or permission of instructor.

3070 Psychology of Speech (3) Psychological factors in speech and language behavior.

3200 Speech and Language Development (3) Speech and language development in the normal child and implications of this process on diagnosis of speech and language problems. Prereq: Psychology 3550 or Education 2430.

3310 Articulation Disorders (3) Etiology, diagnosis, and treatment of articulatory defects. Prereq: 3040 and 3050. (Same as Special Education 3310.)

4040 Appraisal of Speech and Language Disorders (3) Diagnostic procedures for children and adults with speech and language problems. Concurrent enrollment in 4049 required for majors. (Same as Special Education 4040.)

4049 Lab in Appraisal of Speech and Language Disorders (1) Observation and practice with diagnostic tests. Concurrent enrollment in 4040 required. (Same as Special Education 4049.)

4060 Speech Science II (3) Anatomy and physiology of speech production; clinical applications of speech science research. 2 lectures and 1 2-hour lab per week.

4101 Foreign Study (1-16) See page 162.

4102 Off Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4190 Speech Development of the Hearing Impaired (3) Prereq: 3050 (Same as Special Education 4190.)

4200 Practicum in Speech Development of the Hearing Impaired (3) (Same as Special Education 4200.)

4210 Language Development of the Hearing Impaired I (3) (Same as Special Education 4210.)

4220 Language Development of the Hearing Impaired II (3) (Same as Special Education 4220.)

4250 Introduction to the Education and Psychology of the Deaf (3) (Same as Special Education 4250.)

4310 Stuttering (3) Nature and treatment of stuttering. Review of various theories of stuttering, and their impact. Review of psychotherapy and counseling procedures. (Same as Special Education 4310.)

4320 Clinical Practice in Speech Pathology I (1-6) Prereq: 3040, 3050, 3310, 4040, and permission of instructor. Satisfactory-No Credit. (Same as Special Education 4320.)

4330 Clinical Practice in Speech Pathology II (1-6) Prereq: 3040, 3050, 3310, 4040, and permission of instructor. Satisfactory-No Credit. (Same as Special Education 4330.)

4340 Clinical Practice in Speech Pathology I (1-6) Prereq: 3040, 3050, 3310, 4040, and permission of instructor. May be repeated for credit. Satisfactory- No Credit. (Same as Special Education 4340.)

4400 Voice Disorders (3) Etiology, diagnosis, and treatment of organic and functional voice disorders. Prereq: Speech Pathology 3040 and 3060. (Same as Special Education 4400.)

4450 Clinical Practice in Audiology (1-6) Prereq: 4720, 4930, or 4940. Satisfactory-No Credit. (Same as Special Education 4450.)

4460 Clinical Practice in Audiology (1-6) Prereq: 4720, 4930, or 4940. Satisfactory-No Credit. (Same as Special Education 4460.)

4470 Clinical Practice in Audiology (1-6) Prereq: 4720, 4930, or 4940. May be repeated for credit. Satisfactory-No Credit. (Same as Special Education 4470.)

4520 Speech Pathology (3) Independent study of special problems in speech pathology. Prereq: permission of instructor.

4550 Problems in Speech Pathology (3) Prereq: permission of instructor.

4560 Problems in Audiology (1-6) May be repeated to maximum of 6 hrs credit. Prereq: permission of instructor.


4650 Speech and Language of the Culturally Different Child (3) Discussion of speech and language differences of children of various minority groups, of different ethnic and class membership and from different geographic regions; their causes, and their effects upon educational programs.

4710 Introduction to Audiology (3) Fundamental aspects of hearing, including physics of sound, anatomy and physiology of ear, etiology and rehabilitation of hearing loss and psychological ramifications of sensory loss. (Same as Special Education 4710.)

4719 Audiometry Laboratory. Prereq: Permission of instructor. Undergraduate credit only. (Same as Special Education 4719.)

4720 Audiometry (3) Assessment of auditory function by pure tone and speech audiometric procedures. (Same as Special Education 4720.)

4730 Medical Audiology (3) Survey of medical aspects of audiology pertaining to pathologies encountered in medical environments, with emphasis on specific etiologies. Prereq: 4710.


4750 Noise in the Environment (3) Discussion of extent to which noise problem exists, introduction to methods of noise measurement, basic techniques in sound and vibration abatement, acoustical factors, and physiological concomitants in noise stimulation. Knowledge of acoustics is advisable.

4930 Aural Rehabilitation: Speechreading and Auditory Training (4) Speechreading as a receptive language process and development of maximum use of residual hearing in acoustically handicapped. (Same as Special Education 4930.)

4939 Laboratory in Aural Rehabilitation (1) Same as Special Education 4939.

4940 Advanced Aural Rehabilitation (3) Prereq: 4930 or permission of instructor. (Same as Special Education 4940.)

GRADUATE

5000 Thesis

5040 Advanced Clinical Practice in Audiology I-6

5050 Practicum in Aural Habilitation and Rehabilitation I-6

5060 Anatomy and Physiology of Speech 3

5070 Anatomy and Physiology of Hearing 3

5071 Physiological Acoustics 3

5100 Comparative Anatomy of Peripheral Auditory Structures 3

5110 Introduction to Research in Speech and Hearing 3

5119 Instrumentation in Speech and Hearing Science 3

5200 Seminar on Stuttering 3

5201 Aphasia 3

5320-55-60 Advanced Clinical Practice in Speech Disorders I-6, 1-6, 1-5

5350-60-70 Advanced Clinical Practice in Speech Diagnosis I-6, 1-6, 1-5

5380 Cerebral Palsy 3

5390 Cleft Palate 3

5440 Hearing Aid Evaluation 3

5450 Sound Measurement and Analysis in Hearing Conservation 3

5460 Differential Diagnosis of Auditory Disorders 3

5470 Impedance Measurement in Audiology 3

5500 Seminar in Audiology 3, 3, 3, 3

5503 Seminar in Advanced Audiological Procedures 3
4119 Cellular and Comparative Biochemistry Laboratory (2) Basic biochemical procedures of general application in biochemistry and molecular biology. Prereq: 1 quarter of analytical chemistry. Prereq. or coreq: 4110.

4210-20 Introduction to Physical Biochemistry (3, 3) 4210—Introduction to Thermodynamics, phase stability and phase change, chemical potential, osmotic pressure; activity and the Debye-Hückel model; electrochemical membrane, permeability, ionic mobility; 4220—Elements of statistical mechanics, diffusion, collision theory, chemical kinetics and transition state theory, higher order kinetics; specialized kinetics of enzymatic processes; some bio-polymer considerations. Prereq: Math 1810-20-30; Chemistry 3211-21-31, and an introductory course in biochemistry, microbiology, and zoology. Prerequisites to this concentration are: Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28; Chemistry 1110-20-30. Corequisites are: Math 1840-50; a year sequence in Physics (except 1410-20-30); and Chemistry 2140-49.

B. Concentration in Organismal and Systems Biology. Consists of Biology 2110-20-30, Chemistry 3211-21-31, 3219-29-39, and 18 hours from approved upper division courses in Biochemistry, Botany, Microbiology, and Zoology. Prerequisites to this emphasis are: Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28; Chemistry 1110-20-30; Corequisites are: Math 1840-50 or 1540-50-60 (Math 1840-50 is recommended choice); a year sequence in Physics (except 1410-20-30) or Geology 1510-20.

Notes: Students majoring in Biology are advised to exercise care in fulfilling the Science and Mathematics triad requirements. Math 1840-50 and Chemistry 1110-20-30 or equivalent (20 hours altogether) must be completed by Biology majors. Students majoring in Biology are advised to consider completion of a Physical Science minor (page 193).

Minor: Consists of Biology 2110-20-30 and 12 hours of upper division courses chosen from the list below. Biochemistry 4110-20, 4119-29; Botany, any 3000- or 4000-level courses; Microbiology, any 3000- or 4000-level courses; Zoology, any 3000- or 4000-level courses except 3010-20-30. (In meeting the upper division minimum requirement, not more than 10 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited.) Prerequisites to the minor are: Introductory Biology courses (Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28); Chemistry 1110-20-30. Note: Certain upper division courses require organic chemistry or other prerequisites - consult the catalog description in each case.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major in the 1972-73 or earlier general catalog.

*Equivalent courses.
allowed for minor credit. Prerequisites to this minor are Botany 1110-20, 1140 or 1118-28 or Biology 1210-20-30*. Corequisites are 4 hours of upper division courses in a related biological science (Zoology, Microbiology, Biochemistry, Agricultural Biology, Forestry or Plant and Soil Science).

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous curriculum find the following requirements for a major or minor in the 1972-73 or earlier general catalog.

1110-20 Fundamentals of Botany (4, 4) Nature and development of plants, including processes, structure, life histories, inheritance, ecology and importance to man. Enrollment in sequence is desirable. Two 1-hour discussions and approximately 3 hours audio-visual laboratory per week. Students may not receive credit for both Botany 1110-20 and Biology 1210-20-30.

1118-28 Honors: Fundamentals of Botany (6, 6) Honors course designed for superior students in beginning botany. Open to freshmen with a score of 27 or better on national section of American College Testing Program, and sophomores who have cumulative grade point average of 3.25 or 3.5 in the sciences or who are approved through an interview with member of faculty. Students receiving C or D in 1118 must transfer to 1110. Three 2-hr lecture-lab-discussion periods. Must be taken in sequence.

1140 Selected Topics in General Botany (4) Areas will include plant growth, population genetics, environmental interactions and impact of human activities on biological resources. Lectures, laboratory, field trips and individual projects. Two hours lecture-discussion and 4 hours laboratory per week. Occasional field trips. Prereq: Botany 1110-20 or Biology 1210-20-30.

3010-20 Plants in Evolution (4, 4) Monera to angiosperms; emphasis on evolutionary relationships, morphology and development. Not for botany graduate credit. Prereq: 6 hrs in biological sciences.

3020 Field Botany (4) Study of plants in natural environments including plant identification, collection, preservation and basic ecological concepts. Prereq: 6 hrs in biological sciences. Not for botany graduate credit.

3050 Socio-Economic Impact of Plants (3) Significance of plants in origin and development of human cultures; evolution of cultivated plants, and role of plants in present civilizations. Occasional field trips. Not for botany graduate credit.

3070 Genetics and Society (3) An introduction to genetics, anthropology and evolution with emphasis on their implication for human society. (Same as Anthropology 3070.)

3090 Biology and Human Affairs (3) Basic biological principles involved in deterioration and preservation of an environment in which man and his cultures may survive. Not for botany graduate credit. (Same as Zoology 3090.)

3120 Introductory Plant Pathology (4) Same as Agricultural Biology 3120.

3120 Introductory Plant Physiology (4) Organism physiology of plants; water relations, mineral nutrition, morphogenesis, elements of metabolic processes, effects of age, light, natural rhythms, and temperature and other environmental factors. Lecture and lab. Not for botany graduate credit. Prereq: One year general chemistry and one year of a biological science.

4000 Tutorial in Botany (2) Individual, independent study under guidance of selected staff. By appointment only. May be repeated with permission of Department.


Chemistry (235)

Professors: D. A. Shirley (Head), Ph.D. Iowa State, N. S. Bowman, Ph.D. Princeton; C. A. Buchler (Emeritus), Ph.D. Ohio State, W. E. Bull, Ph.D. Illinois, C. J. Collins, Ph.D. Northwestern; J. A. Dean, Ph.D. Michigan; J. F. Eastham, Ph.D. California (Berkeley); J. R. Fisher, Ph.D. Minnesota; C. W. Keenan (Associate Dean), Ph.D. Texas; D. C. Kleinfeilter, Ph.D. Princeton; M. H. Litzke, Ph.D. Wisconsin; R. Livingston, Ph.D. Cincinnati; G. Mamantov, Ph.D. Louisiana State; A. D. Melvan (Emeritus), Ph.D. Penn State; G. D. O'Kelley, Ph.D. California (Berkeley); G. K. Schweitzer, Ph.D. Illinois; G. P. Smith, Ph.D. Virginia; A. H. Smith, Ph.D. Harvard; W. T. Smith (Emeritus), Ph.D. Ohio State; W. A. Van Hook, Ph.D. Johns Hopkins; T. F. Williams, Ph.D. London (Emeritus); J. H. Wood (Emeritus), Ph.D. North Carolina State.

Associate Professors: J. E. Bloom, Ph.D. Manchester (England); J. C. Chambers, Ph.D. Kansas; C. A. Lane, Ph.D. California (Berkeley); W. J. Larsen, Ph.D. Purdue; R. M. Levenson, Ph.D. Purdue; J. E. Larson, Ph.D. California (Berkeley); E. L. Wehby, Ph.D. Purdue.

Assistant Professors: J. L. Adlard, Ph.D. Drexel; R. G. Gaudron, Ph.D. Stanford; F. A. Grimm, Ph.D. Cornell; G. W. Kabalka, Ph.D. Purdue; J. F. Kinstle, Ph.D. Akron; L. J. Magid, Ph.D. Tennessee; R. M. Pagen, Ph.D. Wisconsin; F. M. Schell, Ph.D. Indiana; C. Woods, III, Ph.D. N. Carolina State.

There are two alternative routes for the student to take in designing his program for a B.A. degree in Chemistry.

Concentration A is designed to prepare the student for a career as a professional chemist or for entrance into graduate school in such fields as Chemistry, Biochemistry, Geochmistry, etc. This program has similarities to that leading to the degree of Bachelor of Science in Chemistry, (page 160), but with more opportunity for selection of electives outside the department and more breadth in science. Unlike the Bachelor of Science in Chemistry degree, the B.A. degree using Concentration A is not approved by the Committee on Professional Training of the American Chemical Society.

Concentration A consists of Chemistry 1110-20, 2000-50, 2840-50, 2940, 3120. The concentration consists of Chemistry 2140, 2145, 3211-21-31 or 3511-21-31 (latter recommended), 3219-39 or 3219, 3529-39 (latter recommended), 3420-30-20, 3429 plus at least 10 hours of additional upper division work in Chemistry. (Up to six hours of Biochemistry 4000-level and above or Geology 4610 may be applied to the ten hour requirement). While not required, Math 2860 is highly recommended as an elective for majors in this concentration.

Concentration B is designed for students who have career objectives in fields other than Chemistry, but in fields where Chemistry has direct applications, such as medicine, dentistry, pharmacy, law, business and engineering. This concentration, supplemented by appropriate courses from other areas, is suitable for students planning careers in these areas. Concentration B is specifically designed to provide more active hours which may be selected in fields which are related to Chemistry. Concentration B is not

appropriate for students intending to become professional chemists.

The prerequisites consist of Chemistry 1110-20-30, Mathematics 1540-50-60 or 1840-50-60 and any one of the following natural science options: (a) Physics 2210-20-30 or 2510, 2310-20-20, (b) Geology 1510-20-20, (c) Biology 1210-20-20, (d) Biology 2110-20 and Microbiology 3000, 3008, (e) Botany 1110-20. The concentration consists of Chemistry 2140, 2149, 3211-21-31 or 3511-21-31 (latter recommended), 3219-39-39 or 3219, 3529-39 (latter recommended), 4920-30, 4920 plus at least 10 hours of additional upper division work in Chemistry. (Up to six hours of Biochemistry 4000-level and above or Geology 4610 may be applied to the ten hour requirement).

A minor in chemistry shall consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences:

Chemistry 3211-3221-3231, 3219-3229 (or 3529-3239) or (3539) (12 hours) or Chemistry 3410-3420-3430 (9 hours) or Chemistry 4910-4920-4930 (9 hours).

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalogs.

For information regarding the Bachelor of Science in Chemistry degree and the cooperative program in chemistry, see page 160.

Freshman Sequences. The sequence which meets all requirements of a year of general chemistry is 1110-20-30. The 1510 and 1610 series have more limited applications. The 1510 series emphasizes organic and biochemistry and may be used as a prerequisite for 2230 and 3810. The 1610 series is for non-science majors.

It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds that he will complete the 1510 series after having completed 1510 or 1610 may obtain permission to substitute either 1510 or 1610 for 1110 provided he has approval of the Chemistry Department and has a minimum grade of 1110. However, no quarter of the 1510 or 1610 sequences may be substituted for 1120. Credit may be received for only one of the courses 1110, 1510 or 1610; and only one of 1520 or 1620.

In any chemistry course above the freshman level which has Chemistry 1110-20-30 as a prerequisite, 1510-20-30 may be used as a prerequisite with approval of the Chemistry Department.

Chemistry 1118-28-38 is an honors course designed for the superior student who has already made considerable progress in science. Placement is based on placement test scores and the high school chemistry grade. A grade of A or B in 1128 also gives credit for 1138 with the same grade. A student receiving a grade below B in 1118 will complete the year's work by taking 1120-30. A student receiving a grade of C or D in 1128 must take 1130 to get the full 12 hours credit.

Beginning students who have had high school chemistry and who have had additional experience (e.g., summer institute study, special research projects, home laboratory) are invited to apply during the summer of the head of the department for permission to take a proficiency examination in one or more quarters. If the examination is made on the examination, credit will be allowed for the quarter (or course) for which the exam was taken.

UNDERGRADUATE

1110-20-30 General Chemistry (4, 4, 4) General course with theoretical and descriptive chemistry and physical chemistry, 1110—Modern atomic theory, chemical bonding, stoichiometry and quantitative treatment of gas laws, 1112—Quantitative aspects of solution chemistry, kinetics, chemical equilibria, and thermodynamics.

1130—Descriptive chemistry of nonmetallic and metallic elements, electro-chemistry and introduction to organic and biochemistry. Must be taken in sequence. 3 hrs and 1 lab.

1118 Honors: General Chemistry (4) (See explanation above) 3 hrs and 1 lab.

1128-38 Honors: General Chemistry (4, 4) (See explanation above) 3 hrs and 1 lab.

1410 Chemistry for Nurses (4) Inorganic, organic, and biochemistry. 5 hrs and 1 lab.

1420 Chemistry for Nurses (4) 5 hrs.


2149 Analytical Chemistry (1) Experiments on topics discussed in 2140. Coreq or coreq: 2140. 1 lab.

2230 Elements of Organic Chemistry (4) Brief treatment of organic chemistry with emphasis on compounds of biological interest. Prerequisite: one year of general chemistry. Not open to chemistry majors or minors.

3000 Searching the Chemical Literature (2) Use of abstract journals, reference, compendia, books, chemical journals and other sources of chemical informations. 2 hrs. Open to upper division chemistry majors.

3211-21-31 Organic Chemistry (3, 3, 3) Compounds of carbon and their reactions, reaction mechanisms, spectroscopic and other physical properties. Must be taken in sequence. Prerequisite: 3211-21-31. Corresponding laboratory (3219-29-29) is coreq for students not having credit for the laboratory.

3219-29-39 Organic Chemistry Laboratory (1, 1, 1) Experiments on topics discussed in 3211-21-31. Corresponding lecture (3211-21-31) is coreq for students not having credit for the lecture.

3425-39 Physical Chemistry Laboratory (1, 1) Gases, liquids, chemical equilibria, solutions, phase diagram, reaction kinetics and electrochemistry. The corresponding courses (3420 and 3430) are corequisites. 1 lab.

3511-21-31 Principles of Organic Chemistry (3, 3, 3) Structure and reactivity of aliphatic and aromatic compounds emphasizing reactions of synthetic utility. Use of spectroscopic and physical techniques to elucidate reaction mechanisms. Recommended for chemistry majors and students planning careers in physical or biological sciences. Must be taken in sequence. Prerequisite: Chemistry 2319-29 or 3219, 3529-39 is a corequisite; latter is recommended.

3529-39 Organic Chemistry Laboratory (1, 1) Principles of organic chemistry in 3521-31. Students are to 3229-39 except designed for students who have need for operating knowledge of various spectroscopic techniques. Corresponding lecture (3521-31 or 3221-31) is a corequisite for students not having credit for the lecture.

3810 Radioactivity and Its Applications (3) Radioactive materials in tracer and therapeutic applications. Radioactive decay, detection apparatus and techniques, tracer procedures and safety precautions in agriculture, biology, medicine, nutrition, etc. Not for credit by chemistry or physics majors or minors. Prerequisite: Math 1130 or equivalent, 1 yr Gen. Chemistry.

4110 Physical Chemistry (3) Theoretical aspects of chemical kinetics. Quantum mechanics of atomic and molecular systems. Molecular symmetry, crystal structure and solid state. Statistical thermodynamics. Prerequisite: Chemistry 3430. Corequisite: Chemistry 4119.

4119 Physical Chemistry Laboratory (1) Solutions, phase equilibria, reaction kinetics and spectroscopy. The corresponding course 4110 is corequisite.

4160-70 Intermediate Physical Chemistry (3, 3) Designed for entering graduate students who have had one year of physical chemistry. 4160--The three laws of thermodynamics, phase equilibria and solutions. 4170--Gas laws, kinetic theory, chemical kinetics, molecular spectroscopy, and introduction to chemical statistics.

4210 Advanced Analytical Chemistry (3) Chemical separations including chromatography, ion exchange and solvent extraction; spectro-photometric techniques. Prerequisite: 2140-48.

4219 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4210. Corequisite: 4210.

4220 Advanced Analytical Chemistry (3) Electroanalytical methods of analyses (including polarimetry, coulometry, polarography, and voltammetry); magnetic resonance methods; mass spectrometry; the use and applications of atomic absorption and fluorescence techniques. Prerequisite: 3140-49; 3420 or 4920 recommended.

4229 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4220. Corequisite: 4220.

4420 Physical Inorganic Chemistry (3) Theoretical concepts leading to an understanding of chemical systems; quantum theory of the atom; principles of molecular structure and elementary nuclear chemistry. Prerequisite: 3410-20-30, 4110.

4430 Intermediate Inorganic Chemistry (3) Application of theoretical concepts to inorganic elements, their chemical states, and their reactions. Prerequisite: 4420.

4510 Organometallic Qualitative Analysis (3) Identification of pure organic compounds and mixtures. Prerequisites: 3221-29-31, 3219-29-39 or 3219, 3529-39, 3 labs. (Not open to students who have completed 4610.)


4610-20 Advanced Chemical Experimentation (2, 2) Laboratory course in application of modern experimental techniques to solution of chemical problems. Synthesis and characterization of organic and inorganic compounds with emphasis on independent study using advanced techniques. Prerequisites: 3231-39 or 3231-3539, 3430-39, 4220. Students who receive credit for 4610 may not also receive credit for 4510.

4640 Electronics for Chemists (4) Electronics in design and construction of chemical instrumentation. 2 hrs and 2 labs. Prerequisite: Physics 2310.

4710-20-30 Research in Chemistry (2, 2, 2) Open to senior majors with permission of department head. Written report must be submitted to research director at termination of project.

4910-20-30 Biophysical Chemistry (3, 3, 3) Photosynthetic principles with applications to biological systems. Must be taken in sequence. Not open to students having 3410-20-30, 4910--Gas laws; first and second laws of thermodynamics; equilibrium; 4920--Solution chemistry; electrochemistry; athermodynamics; nuclear chemistry; 4930--Elementary quantum chemistry; optical and magnetic spectroscopy; light scattering; macromolecular properties. Prerequisite: 4210-30-20, Math 1540-50 or equivalent. Corequisites: Chemistry 4520, 4529.

4929-39 Biophysical Chemistry Laboratory (1, 1) Experiments on topics discussed in 4910-20-30. Must be taken in sequence. Not open to students having 3410-20-30-39 sequence. 4920 is coreq or prerequisite for 4929. 4930 is coreq or prerequisite for 4939. 1 lab.

GRADUATE

Students majoring in chemistry for the Master's or Doctor's degree are required to present as a prerequisite one year each of general, analytical, organic, and physical chemistry with a satisfactory record. Students lacking any of these prerequisites may be admitted with appropriate deficiencies which must be removed without graduate credit.

For students minoring in chemistry, the prerequisite is two years of chemistry including quantitative analysis.

The Master's Program

Master's degree requirements are found in the Graduate School Catalog.

The Doctoral Program

Doctor's degree requirements are found in the Graduate School Catalog. The department offers specialization in eight areas for the Ph.D. degree: analytical, environmental, inorganic, organic, physical, theoretical, chemical physics and polymer science.

5000 Thesis

5110-20-30-35 Advanced Organic Chemistry (3, 3, 3) 5129 Advanced Organic Chemistry Laboratory (3) 5140 Introductory Polymer Chemistry (3) 5150 Kinetics of Polymerization (3) 5180 Organic Chemistry of Polymers (3) 5170 Physical Chemistry of Polymers (3) 5240 Electronics for Chemists (4) 5250-60-70 Advanced Analytical Chemistry (3, 3, 3) 5259-69-79 Advanced Analytical Chemistry Laboratory (1, 1, 1) 5280-90 Clinical Chemistry (3, 2) 5299 Clinical Chemistry Laboratory (1) 5310-20-30 Research in Chemistry (3, 3, 3) 5340-50-80 Quantum Chemistry (3, 3, 3) 5410-20-30 Advanced Physical Chemistry (3, 3, 3) 5440 Experimental Methods of Infrared and Raman Spectroscopy (3) 5450 Statistical Thermodynamics (3) 5460 Radiation Chemistry (3) 5480 Molecular Spectroscopy Laboratory (3) 5511 Survey of Inorganic Chemistry (3) 5521 Survey of Analytical Chemistry (3) 5531 Survey of Organic Chemistry (3) 5710-20-30 Theoretical Inorganic Chemistry (3, 3, 3) 5740 Advanced Inorganic Chemistry Laboratory (3) 5810 Nuclear Chemistry (3) 5911-21-31 Chemistry Seminar (1, 1, 1) 6000 Doctoral Research and Dissertation 6110 Stereochemistry (3) 6111 Selected Topics in Organic Chemistry (3) 6120 Carbohydrates (3) 6140 Heterocyclic Compounds (3) 6150 Theoretical Organic Chemistry (3) 6180 Physical Organic Chemistry (3) 6180 Alkaloids (3) 6190 Organic Compounds of Sulfur, Silicon and Metals (3) 6210 Topics in Analytical Chemistry (3) 6211 Selected Topics in Analytical Chemistry (3) 6311 Selected Topics in Polymer Chemistry (3) 6411 Selected Topics in Physical and Theoretical Chemistry (3) 6420 Nuclear Magnetic Resonance (3) 6430 Photochemistry (3) 6450 Electrochemistry (3) 6480 Catalytic Chemistry (3) 6480 Statistical Thermodynamics (3) 6510 Thermodynamics of Solutions (3) 6520 Magnetic Resonance (3) 6710 Crystal Chemistry (3) 6711 Selected Topics in Inorganic Chemistry (3) 6730 Topics in Quantum Chemistry (3) 6790 Molten Salt Chemistry (3) 6810 Vibrational Problems in Molecular Spectra (3) 6820 Molecular Vibration-Rotation Theory (3) 6811 Selected Topics in Nuclear Chemistry (3)

Classics (257)


Greek and Roman Civilization

See Cultural Studies.

Greek

UNDERGRADUATE

A major in Greek consists of 39 hours of language courses numbered above 2000 but including Classics 4220. Nine hours from the
following general courses may be substituted for language courses at the discretion of the department: Classics 3210-20, 3310-20, 4010. 4110 may be taken for a maximum of 6 hours.

The Greek minor consists of 24 hours in language courses numbered above 2000 including Classics 4220. Six hours from the following general courses may be substituted for language courses at the discretion of the department: Classics 3210-20-30, 3310, 3320, 3330; 4110 may be taken for a maximum of 6 hours.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

1610-20 Beginning Greek (4, 4)
2610 Plato (4)
2620 Homer: Odyssey (4)
2630 Homer: Iliad (4)
2640 Greek New Testament (4) Prereq: 1620 or permission of instructor.
3010 Lyric Poetry (3)
3020 Herodotus (3)
3030 Euripides (2)
4020 Aeschylus: Sophocles (3)
4030 Demosthenes (3)
4040-49-60-70 Directed Readings in Greek (3, 3, 3)

GRADUATE

Graduate courses in Classics include wider reading of Greek or Latin authors in a selected field, more detailed study of one of the great departments of classical literature, and development of background for appreciation of Greek or Roman life and literature.

5000 Thesis
5110-20-30 Greek Epic, Homer (3, 3, 3)
5210-20-30 Greek Drama (3, 3, 3)

Latin

UNDERGRADUATE

A major in Latin consists of 39 hours in language courses numbered above 2000, but including Classics 4220. Nine hours from the following general courses may be substituted for language courses at the discretion of the department: Classics 3210-20-30, 3310, 3320, 3330; 4110 may be taken for a maximum of 6 hours. Greek language courses numbered above 2000 may be substituted for a maximum of 9 hours of Latin courses with permission of department.

The Latin minor consists of 24 hours in language courses numbered above 2000 including Classics 4220. Six hours from the following general courses may be substituted: Classics 3210-20-30, 3310, 3320, 3330.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Placement Examination: Students who transfer to The University of Tennessee from other colleges and students who enter with high school units in Latin should register for the course in which they would normally be placed on the basis of such credits. During the first week of the quarter a placement test will be given, and students will be advised if a change in their registration is indicated by the results.

Proficiency Examinations. Students who have acquired a knowledge of Latin through private study or tutoring should request a proficiency test. A student who earns a grade of B or better in this examination is eligible for credit toward graduation. A student who omits any course in a sequence may receive credit for it by passing the appropriate proficiency examination.

Certification for Teaching Latin in Tennessee, Consult Certification Clerk, Room 212, Claxton Education Building.

1510-20 Beginning Latin (4, 4)
2511-21 Intermediate Latin (4, 4) 2511—Readings from the age of Cicero. 2521—Virgil's Aeneid. Open to those who have had at least two years of high school Latin, or equivalent.
3110-20-30 Survey of Latin Literature (3, 3, 2) Open to those who have had three or four years of high school Latin.
3410 Plautus; Terence (3)
3420 Tacitus; Pliny (3)
3430 Tibullus; Propertius (3)
4110 Seneca, Essays and Letters, or Tragedies (3)
4120 Horace, Satires and Epistles (3)
4130 Catullus; Martial (3)
4310 Readings from Medieval Latin (3)
4320-30 Selected Readings from Latin Literature (3, 3) May be repeated for credit.

GRADUATE

5000 Thesis
5310 Seminar in Caesar (3)
5410-20-30 The Latin Epic. Lucretius, Virgil, Lucan (3, 3, 3)
5510-20-30 Roman Comedy. Plautus, Terence (3, 3, 3)

GENERAL COURSES

2710 Greek Etymology (4) Origin and derivation of words. Greek stems most commonly found in English language with special attention to words in scientific and technical vocabularies.
2720 Latin Etymology (4) Origin and derivation of words. Latin stems most commonly found in English language with special attention to words in scientific and technical vocabularies.
2810 Greek Life (4) Manners and customs, social and economic aspects of classical civilization; family, politics, laws, finance, commerce.

2820 Roman Life (4) Description same as for Greek life 2420.
2910-20 Survey of Greek Literature in English Translation (4, 4) 2910—Homer, lyric poetry. Herodotus. 2920—Thucydides, Plato, literature of the age of Alexander.
3210-20-30 Greek and Roman Mythology (3, 3, 3) Lectures, detailed studies, reading, and reports. Ancient religious and psychological concepts and influence on later thought and literature. (Same as Religious Studies 3210-20-30.)
3310 Greek Art and Archaeology (3) Remains of ancient Crete and other Greek areas. Recent excavations in Mycenae and Troy. Illustrated lectures.
3320 Greek Art and Archaeology (3) Masterpieces of Greek sculpture and architecture. Illustrated lectures.
3330 Roman Art and Archaeology (3) Ruins of Pompeii and of ancient Rome. Roman remains in England, France, Spain, etc. Illustrated lectures.

3340 Cities of the Greek and Roman World (4) Archaeological survey of Greek and Roman cities from 300 B.C. to 500 A.D. with emphasis on development of city planning and quality of life. Such cities as Mycenae, Athens, Priene, Alexandria, Rome, and Lepcis Magna will be studied.

3350 Shrines and Sanctuaries of the Greek and Roman World (4) Survey of major shrines and sanctuaries of Greek and Roman world with emphasis on archaeological remains. Such sites as Olympia, Epidaurus, Paestum, Cumae, Praeneste, and Baalbek will be considered. Readings in selected classical authors will add to understanding of place of great shrines and sanctuaries in Greek and Roman life.

4010 Greek Drama in English Translation (3) Survey of dramatic masterpieces of Greek literature.

4101 Foreign Study (1-16) See page

4210 Teaching of Latin (3) Carries no language credit. For description see Education, Curriculum and Instruction, 3656.

4220 Seminar in Classical Studies (3) Special problems in literatures and other arts of Greece and Rome. For graduate students and advanced undergraduates. May be repeated for credit with permission of department.

4230 Classical Mythology and Its Uses (3) Intensive review and study of Greek and Roman mythology for graduate students and advanced undergraduates. Emphasis on uses of classical mythology in literature, music, and plastic arts, especially of modern times.

4510 Selected Readings in Latin Literature in Translation (3) Content varies; may be repeated for credit with permission of department.

GRADUATE

5820 Problems in Old World Archaeology (3)

Comparative Literature

See Cultural Studies.

Computer Science (263)

Professors: R. T. Gregory (Head) Ph.D. Illinois; R. E. Cline, Ph.D. Purdue; F. Donaldson (UT Space Institute), Ph.D. Texas; J. P. Plummer, Ph.D. Auburn; G. R. Sherman, Ph.D. Purdue.

Associate Professor: C. E. Hughes, Ph.D. Pennsylvania State.

Assistant Professors: R. M. Alkin, Ph.D. Northwestern; C. Heung, Ph.D. Suny (Buffalo); S. R. Jordan, Ph.D. Wisconsin; R. P. Leinuis, Ph.D. Wisconsin; C. R. Pfieger, Ph.D. Pennsylvania State; J. R. Pinkert, Ph.D. Wisconsin; M. G. Thomason, Ph.D. Duke.

Computer Science offers undergraduate major and minor concentrations as well as a Master of Science degree (for details, see Graduate Catalog). Information about Computer Science programs may be obtained from the departmental office, 194 Alumni Hall or from the Liberal Arts Advising Center, 220 Ayres Hall.

Major: A major in Computer Science consists of 3150 or 3155, 4410-20-30, 4510; 15 hours from Category A; and 9 hours from Categories A and/or B. (A): CS 3030, 4010-20, 4150-60-70, 4610-20, 4850, 4910. (B) Actng: 2110-20; CS 3010, 3410, 3610, 3850; Indus. Engr. 3510-20-30; Math: 4220-30; Philos: 3810 (or Math 3100); Stat: 3450 (or Math 3050 or Math 4650). CS 4980-90 may be counted in Category B.
only when designated by the department as acceptable for CS majors. Coreq: Math 2840-50-60 or honors sequence 2848-58-68.

Minor: A minor in Computer Science consists of Computer Science 4410, 4420, 4430 plus 15 hours chosen from the following set of Computer Science courses: 2010 or 2410, 3010, 3150, or 3155, 3410, 4010, 4320, 4330, 4510, 4610, 4620, 4850.

UNDERGRADUATE
1810-20-30 Elementary Computer Programming (1, 1, 1) Elementary computer programming using FORTRAN or comparable scientific programming language and programming sequence. Coreq: Math 1840-50-60 or 1848-58-68.

2010 Introduction to Computer Programming (4) Computer as a tool of varied uses in modern world; emphasis on basic programming in FORTRAN. Use of applications of computers in various disciplines. Not for credit if 2410 previously taken.

2410 Computer Programming-Business Oriented (4) Use of computers as a tool in the business environment with emphasis on learning FORTRAN programming; comparisons with and contrasts to other programming languages (COBOL) are discussed. 3 lectures. Not for credit if 2010 previously taken. Prereq: Math 1600 or Math 1840. Intended primarily for business students in College of Business Administration.

2810-20-30 Computer Programming (1, 1, 1) Problems in computer programming in FORTRAN or comparable scientific programming language. Must be taken in sequence. Not for credit if 2010 or its equivalent previously taken. Prereq: 1830 or equivalent.

3010 Computers and Society (3) History of computing, computer systems, capabilities of a computer, applications in artificial intelligence, humanities, social sciences, sciences and engineering, computing in foreign countries, computer assisted instruction, future advances in computing, careers in computers. Prereq: Permission of instructor.

3020 Introduction to Structured Programming (4) Intermediate computer programming. Use of general purpose language such as PL/1. Concept of structured programming. Prereq: 3 hrs in pro-
gramming or permission of instructor.

3150 Application of Digital Computers in Engineering and Science (3) Formulation of problems for solution on digital computers and programming on digital computers including differential and algebraic equations; programming in currently acceptable languages. Prereq: Math 1840 or Math 2850 and coreq: Math 2860. Not for credit if Math 3155 or C.S. 3155 previously taken. (Same as Math 3150).

3155 Introduction to Numerical Analysis (3) Mathematical development of techniques for numerical analysis appropriate for use on digital computers. A knowledge of FORTRAN is assumed. Prereq: Math 2850 and Coreq: Math 2860. Not for credit if Math 3150 or C.S. 3150 previously taken. (Same as Math 3155).

3410 Computer Programming-Commercially Oriented (3) Computer programming in business-oriented language, such as COBOL. Prereq: Math 1550. Not for graduate credit.

3910 Computer Concepts and Control (3) Elements, operating, and control of computers in a business environment. Topics include input, storage, data manipulation, output, flowcharting, and error control. Prereq: 3410 and Accounting 2210.

4010 Discrete Structures and Logical Foundations of Computing (3) Sets, relations, ordering, Boolean algebra, propositional logic, functions and computability. Functions; graph theory and its applications to computer systems; set theoretical characterizations of computing machines and computer languages. Prereq: 3150 or permission of instructor.

4020 Introduction to Algorithms, Languages, and Automata (3) Introduction to finite automata, recursive functions, Turing machine, formal languages and grammars. Prereq: 4010 or equivalent.

4150-60-70 Intermediate Applied Programming for Engineers and Scientists (G, 3, 3) Floating point numbers and floating point arithmetic on modern computers. Error analysis of floating point operations. Applications to the study and analysis of specific numerical algorithms such as least squares and min-max solutions to linear systems. Use of package programs in numerical software. Prereq: 3150 or equivalent. Must be taken in sequence.

4310 Computation in Statistical Analysis (3) Use of digital computer in standard statistical analyses, such as frequency tabulations, percentiles and data reduction, correlation and regression, analyses of variance. Elementary programming in a problem-oriented scientific language, e.g., FORTRAN. Prereq: Statistics 3100 or equivalent. 3 lectures. Not for credit for persons who have credit for a computer course.

4320 File Maintenance and Data Processing (3) Applied programming in area of students' primary interest, using the digital computer. To be directed jointly by Computer Science faculty and students' faculty advisor and written reports. Prereq: 3320 or equivalent. 1-3 hrs. (Not for credit for Computer Science majors.) May be repeated for a maximum of nine hours credit.

4410 Computer Organization and Programming I (3) Problem formulation and advanced programming in procedure oriented languages such as FORTRAN and PL/1; operation and control of digital computers. Assumes knowledge of FORTRAN programming language. Prereq: 2010, 3150, or 3030 or permission of instructor.

4420 Computer Organization and Programming II (3) Machine and assembly language programming. Prereq: 4410 or equivalent.


4510 Data Structures and Nonnumeric Pro-
gramming (3) Data structures and algorithms for their manipulation. Arrays and orthogonal lists; stacks, queues, rings, doubly-linked lists, trees, dynamic storage allocation; organization of files, programming inAssembler and assembly language. Prereq: 4420 or consent of instructor.

4610-20 Operating Systems (3, 3) Hardware interrupt systems and concurrent of input/output operations, simple input/output systems and program design, multiprogramming systems, memory management, protection, resource allocation and control, job management and task management; real time systems, time sharing systems, paging; virtual memory, schedulers, reliability; multiprocessing systems, graceful degradation, file management services, system accounting. Prereq: 4430.

4850 Small Computer Systems (3) (Same as Elec. Engr. 4850.)

4910 System Management (3) System analysis and design of system implementation; system justification; personnel in systems; perspective on systems. Prereq: 4420 or equivalent.

4980-90 Special Studies in Computer Science (1-4, 1-4) Credit determined at time of registration. May be repeated for credit to a maximum of 9 hours with permission of department. Prereq: recommendation of computer science staff.

GRADUATE
5000 Thesis
5010 Computer Assisted Instruction (3)
5050 Computer Modeling and Simulation of Physical Systems (3)
5110-20 Numerical Computer Applications (3, 3)
5210 Introduction to Artificial Intelligence (3)
5410 Theory of Formal Languages (3)
5420 Formal Languages and Their Relation to Automata (3)
5430 Compiler Design (3)
5640-50 Topics in Small Computer Systems (3, 3)
5670-80 Advanced Operating Systems (3, 3)
5710-20 Automatic Theory (3, 3)
5810 Information Organization and Retrieval (3)
5940-50 Introduction to Pattern Recognition (3, 3)
5950-60 Special Topics in Computer Science (1-3, 1-3, 1-3)
5970-80-90 Seminar (1-3, 1-3, 1-3, 1-3)

Cultural Studies

Director: Dr. Charles Jackson

The ideal curriculum encourages not only proficiency in a given field of knowledge but also the comprehension of similarity and complementarity between areas of intellectual endeavor. One answer to the need for fusion and integration of knowledge is the interdisciplinary program. The College has joined the resources of several departments to offer a Cultural Studies major with concentrations in American Studies, Black Studies, Greek and Roman Civilization, Latin American Studies, Medieval Studies, and Women's Studies.

Cultural Studies (265)

4000 Selected Interdisciplinary Cultural Topics (1-12) Acceptable for credit in any Cultural Studies concentration or minor with the permission of the Director of Cultural Studies and the respective chairperson. May be repeated for credit up to a maximum of 12 hours.

4101 Foreign Study (1-16) Acceptable for credit in any Cultural Studies concentration or minor except Black Studies. Registration by consent of Director of Cultural Studies and the respective chairperson. See page 162.

4102 Off-Campus Study (1-16) Acceptable for credit in any Cultural Studies Concentration or minor except Black Studies. Registration by consent of Director of Cultural Studies and the respective chairperson. See page 162.

4103 Independent Study (1-16) Acceptable for credit in any Cultural Studies concentration or minor except Black Studies. Registration by consent of Director of Cultural Studies and the respective chairperson. See page 162.

American Studies (099)

History 2510-20 (or equivalent honors courses) is prerequisite to a concentration in
American Studies which consists of 36 quarter hours: English 3010-20-30, American Studies 3010 and 4010, and 21 hours of upper-division electives dealing with the American experience. Nine hours of the elective group must be from one of the following disciplines: anthropology, economics, political science, or sociology. A list of acceptable elective courses is published annually by the American Studies Committee.

For further information consult the chairman of the American Studies Committee, Dr. Charles Jackson.

3010 The American Character (3) Study of why and how Americans are what they are, drawing upon vast literature which deals with these questions.

4010 Selected Topics in American Studies (3) Seminar on topic to be determined by instructor, using an interdisciplinary approach.

Asian Studies (145)

Minor: Asian Studies 2510-20 is prerequisite to a minor which consists of 24 hours from the following courses selected in such a way as to present work in at least three of the following 9 areas: Anthropology 3510, 4500-10, 4570, 4590; Arabic 3610; Art 3775-76, 4785-78, 4787-77; Geography 3670; History 3750, 3810-10-20-30, 4870-50-50, SC: Music 4260; Philosophy 3650, 3660, 3670 (Same as Religious Studies 3650, 3660, 3670); Political Science 3621-22; Religious Studies 3680, 3770, 4670; Spanish 4050-50-70. Students completing the minor successfully will, upon application to the program chairperson, be awarded the Asian Studies certificate in acknowledgement of the work. For further information consult the chairman of the Asian Studies Committee, Dr. Stephen Young.

2510-20 Asian Studies (4, 4) Introduction to cultures of Asia. Emphasis on Islamic countries, India, China, and Japan. Readings in translation from classical literature together with study of religion, art, music, and philosophy. 2510—Islamic countries and India; 2520—China and Japan.

1521-22 Elementary Chinese (4, 4) Must be taken in sequence.

2521-22 Intermediate Chinese (4, 4) Prereq: 1521- 22 or equivalent or permission of instructor; must be taken in sequence.

3000 Selected Topics in Asian Studies (4)

Black Studies (195)

The Black Studies concentration and minor offer in-class, independent, and off-campus study to foster knowledge of the Black experience through a traditional academic approach as well as experiential learning. Concentration: History 1950-60 is prerequisite to a Black Studies concentration which consists of Black Studies 2010-20-20, Black Studies 4200, and 24 additional hours at the upper division level taken from the courses in the Black Studies curriculum. In addition to courses with Black Studies numbers, courses from at least two other departments must be selected from the list below.

Minor: Black Studies 2010-20 and 16 additional hours at the upper division level taken from the courses in the Black Studies curriculum. In addition to courses with Black Studies numbers, courses from at least two other departments must be selected from the list below.

For further information consult the chairman of the Black Studies Committee, Mr. Marvin Peek.

2010-20 Introduction to Black Studies (4, 4)
3630-40 The Educatioan of Black People (4, 4)
Sequence will trace, analyze, and interpret educational systems established for and by Blacks. Special emphasis will be given to colonial experience and the Washington-DuBois controversy in 3630; 3640 will deal with present urban educational problems of Blacks. Recent proposed remedies and solutions as integration, compulsory programs, desegregation, voucher systems; Black Studies and Freedom Schools will be discussed. 2010-20, History 1950-60 recommended. Prereg: consent of instructor.

4101 Foreign Study (1-16) See page 162.
4102 Off-Campus Study (1-16) See page 161.
4103 Independent Study (1-16) See page 162.
4200 Senior Seminar (4)

4830 Black Women in American Society (4) Historical and contemporary socio eco-political factors in American society as they relate to the Black woman. History 1950-60 recommended. Prereg: consent of instructor.

Anthropology 3550 Peoples and Cultures of Africa (3)

Anthropology 3930 Biology of the Races of Man (3)

Art 2725 Black Art (4)

CDFR 4310 The Afro-American Family (3)

English 2540 The Literature of Black America (4)

English 4610-20-30 Black Literature (3, 3, 3)

Geography 3380 Geography of Africa (3)

History 1950-60 Afro-American History: An Introduction (4, 4)

History 2950 Introduction to Afro-American History (3)

History 4950-60 The Negro in American History (3, 3)

Music 3350 Introduction to Afro-American Music (4)

Music 4270 Evolution of Jazz (3)

Political Science 3615-16 Black Africa: The Politics of Change and Stability (4, 4)

Political Science 3555 Minority Group Politics in the U.S. (4)

Psychology 4880 Afro-American Psychology (4)

Religious Studies 3550 Religion and Racism in America (4)

Religious Studies 3550 Black Religion in America (4)

Sociology 3330 Race, Class, and Power (3)

Sociology 4810 Comparative Study of Race and Intergroup Relations (3)

Sociology 4820 American Minority Ethnic Groups (3)

Sociology 4980 Seminar on Poverty and Alienation (3)

Speech 4582 Black Rhetoric (4)

Recommendations for the concentration and the minor:
1. Those with a concentration in Black Studies are encouraged to take a second major, with which an individually designed program in Black Studies can be correlated.
2. Students should seek academic advising from the Chairman of Black Studies for courses for the concentration or the minor which relate to career plans, preparation for graduate study, and relationship to the second major.

3. Those with a concentration and a minor are strongly encouraged to combine classroom and experiential learning through a careful selection of courses, e.g. Human Services 4400 and/or Black Studies 4102.

Comparative Literature (260)

This Cultural Studies minor consists of 24 hours of work including Comparative Literature 3010, Classics 4010, Classics 4510, and 15 hours in literature courses numbered above 3000 in at least two literatures. Foreign language majors may take these 15 hours in literature in translation, but all others must take these 15 hours in a foreign language above the 3000 level. In addition to the courses listed below and literature courses offered by the participating language departments, certain courses in the departments of Philosophy, Religion, Classics, Studies, and Speech and Theatre may be accepted by the Comparative Literature Committee towards the minor.

For further information consult the chairman of the Comparative Literature Committee, Dr. Harry C. Rutledge.

3010 Introduction to Comparative Literature (3)

Basic knowledge, techniques, and sources necessary to compare literatures of various cultures, ages, and nations. Required of all minors.

4012-22-32 Special Topics in Comparative Literature (3, 3, 3) Content varies; may be repeated for credit.

5012 Comparative Theories of Literature (3)

5022 Approaches in Comparative Literature (3)

5032 Studies in Comparative Literature (3)

Classics 3210-20-30 Greek and Roman Mythology (3, 3, 3)

Classics 4010 Greek Drama in English Translation (3)

Classics 4510 Selected Reading in Latin Literature in Translation (3)

English 3411-12-20-30 Modern Drama (3, 3, 3, 3)

English 3710 Literature of the English Bible (3)

English 3910-20-30-40 Comparative Literature (3, 3, 3, 3)

English 4720 Folklore (3)

English 4730 Popular Ballad (3)

English 4950 Approaches to Literature (3)

English 5860 Introduction to Literary Research (3)

German 3210-20-30 Masterpieces of German Literature in English Translation (3, 3, 3)

German 4030 German Drama in English Translation (3)

German 4040 The Modern German Novel in English Translation (3)

German 4050 The Faust Legend (3)

Russian 3210-20-30 Survey of Russian Literature in English Translation (3, 3, 3)

Romance Languages 4010 Masterpieces of French Literature in English Translation (3)

Romance Languages 4020 Masterpieces of French Drama in English Translation (3)
Romance Languages 4030 Masterpieces of Spanish Literature in English Translation (3)
Romance Languages 4040 Masterpieces of Spanish Drama in English Translation (3)
Romance Languages 4050-4070 Dante and Medieval Culture (3, 3, 3)

Greek and Roman Civilization

The Greek and Roman Civilization concentration consists of Classics 2810 and 2820 and 30 hours from courses numbered above 3000. Students are encouraged to satisfy the Triad requirement in language, literature, and the arts with either Greek or Latin in either Option 1 or Option 2. The following courses are required in this concentration: Classics 4010 and 4510; 9 hours from Classics 3210-20-30, 3310-20-30. For no more than 6 of these 15 hours students may substitute courses numbered above 3000 in Greek and Latin (exclusive of any courses taken to satisfy the Triad requirement). Upon consultation with his advisor the student may take the remaining 15 hours from the following courses: History 3750-60-70; Philosophy 3111-3121, 4410-20; Religious Studies 4310. Students could include Classics 4220 or History 4000 when the special topics are suitable. Classics 4101 may be included for a maximum of 6 hours with permission of the department.

For further information, consult the chairman of the program, Dr. Harry Rutledge.

Latin American Studies (600)

Concentration consists of 36 hours including Spanish 3710-20 or Portuguese 3510-20, History 3870-80-90, Political Science 3625-26, and Geography 3800 or 3790 and 7 hours of acceptable elective courses in any of the participating departments or in the Latin American Studies sequence 2510-20 (4, 4) or Independent Research 4010.

Two years of Spanish or Portuguese or a practical working knowledge acquired independently are a prerequisite.

Minor: Consists of 24 quarter hours selected from Geography 3800 or 3790, History 3870-80-90, Political Science 3625-26, and Spanish 3710-20 or Portuguese 3510-20, and the Latin American Studies sequence 2510-20 or Independent Research 4010.

For further information, consult the chairman of the Latin American Studies Committee, Dr. H. E. Lewald.

2510-20 Introduction to Latin American Studies (4, 4) Introduction to societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. 2510-Pre-Colonial and Colonial periods through Independence, 2460—Latter 19th Century and the Modern period.

4010 Independent Research in Latin American Studies (3-9) Directed research in any topic fully related to Latin American Studies to be undertaken by a student off campus, normally in a Latin American country. The research must be approved and evaluated by the Latin American Studies Committee and directed by a faculty member involved in the study of the Latin American area. Credit to vary according to the scope and length of the project.

4970 Senior Seminar (3) Selected topics in Latin American Studies. May be repeated with permission of instructor.

Medieval Studies (674)

A concentration in Medieval Studies focuses upon culture and society from the collapse of the Roman Empire to the sixteenth century. Such a concentration offers the opportunity to deepen one's self-awareness and broaden one's understanding of the range of human possibilities by studying a very different and remote culture—its conditions of life, social and political institutions, values and ideals, and modes of perception and expression. A concentration in Medieval Studies consists of Medieval Studies 2010 and 4010 and 28 hours of upper division courses concerned primarily with the medieval experience, divided among the following three categories: (1) History, Philosophy, Political Science, and Religious Studies; (2) Language and Literature; (3) The Arts—History of Art, Architecture, Music, and Speech and Theatre. Courses should not be selected at random but should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy, etc.) or should revolve around a particular discipline or a closely related disciplines (for example, courses in the History of Art and Architecture). A minor in Medieval Studies consists of Medieval Studies 2010 and 4010 and 16 additional hours distributed among the categories listed above for the major concentration. Each student's program, major or minor, must be approved in advance by the Medieval Studies Coordinating Committee, chairperson Sarah Blanshe, 11 McClure Towaliga.

It is strongly recommended that students selecting the Medieval Studies concentration choose a foreign language option for the Triad requirement (options 1 or 2). Latin is the most appropriate language for students and is essential for those who plan to continue their studies in graduate school. In addition, students planning to go on to graduate school are strongly advised to supplement their Medieval Studies concentration with extensive work in one of the traditional disciplines.

2010 Medieval Civilization (4) Introduction to basic themes in medieval experience, approached from interdisciplinary points of view and including philosophy and religion, art and architecture, language and literature, social and political history.

4010 Seminar in Medieval Studies (4) Interdisciplinary treatment of selected topics.

Upper division courses for the Concentration in Medieval Studies may be chosen from the list of courses given on the following page.

Russian and East European Studies (887)

There are two approaches for the student to take in designing a program with a concentration in Russian and East European Studies:

Track I is designed for students whose major interest is in a career in the academic world or a government service. Prerequisites to this track are Russian 2510-20 and 2640-50. The track consists of Economics 4000; Geography 3880; six hours from History 3470-80-90, 4470, 4480 and 4490; Political Science 4815 and four hours from Political Science 3631-32, 3715; Russian 3110-20-30 or 3810-20-30; and six hours from Russian 3210-20-21-30, 3240, 3250 or 3280.

Track II is designed for students whose major interest is in a career in the world of international business and/or finance specifically oriented toward trade with the Soviet Union and/or Eastern Europe. Prerequisites to this track are Russian 2510-20 and 2640. The track consists of Economics 3210, 4000, and 4230; three hours from History 3470-80-90 and three hours from History 4480, 4490, or Geography 3880; Political Science 4815 and four hours from 3631-32, 3715; Russian 3110-20-30 or 3810-20-30; Marketing 4230; and Finance 4420.

For further information, consult the chairman of the Russian and East European Studies Committee, Dr. Martin Rice.

4010 Selected Topics in Russian and East European Studies (3) An intensive study of a selected topic using a comparative approach.

Women's Studies (994)

Minor: Consists of Women's Studies 2010-20 and 16 hours in appropriate courses numbered 3000 or above. Supporting courses are drawn from several departments and colleges on the UTK campus. A list of available courses will be published annually by the Women's Studies Committee. For further information consult the chairperson of Women's Studies, Dr. Suzanne Kurfth.

2010-20 Women's Studies (4, 4) Explores basic knowledge and sources necessary to understand current and past societal experiences of women. 2010 utilizes perspective of humanities; 2020 employs that of social sciences.

Ecology (278)

J. Frank McCormick, Director.


The Graduate Program in Ecology offers Master of Science and the Doctor of Philosophy degrees. This interdepartmental program provides advanced courses in contemporary ecology for students from undergraduate programs in biology, social sciences, mathematics and engineering. Research opportunities in both fundamental
and applied ecology are intended to prepare students for academic careers as well as professional positions in industry or government. The Environmental Sciences Division of the Oak Ridge National Laboratory and the Tennessee Valley Authority provide advisors and research facilities. The Great Smoky Mountains, Cumberland Plateau, valley and ridge topography, TVA lakes and wild rivers provide locally a spectrum of natural habitats and consequent biological diversity which is truly unique. In addition, faculty research programs provide opportunities for student research elsewhere on this continent and abroad.

ADMISSION
Requirements for admission to the Graduate School of the University of Tennessee; (2) at least 12 quarter hours of college chemistry, 9 quarter hours of college mathematics, and 4 quarter hours of ecology at the upper division level. Candidates for the doctoral degree are expected to take the Graduate Record Examination. Application forms for admission should be obtained from the Graduate School. Inquiries concerning the admission requirements should be addressed to the Director, Graduate Program in Ecology, 408 10th Street, University of Tennessee, Knoxville, Tennessee 37916.

COURSES ACCEPTABLE
IN PROGRAM

Agricultural Biology
4010 Biology of Soil Microorganisms (4)
4510 Freshwater Fishery Biology (4)
4520 Management of Lakes and Ponds (4)

Botany
4310 Plant Ecology (4)
5340 Plant Geology (4)
5350 Analysis of Plant Communities (4)
5510-20-30 Systems Ecology (3, 3, 3)
5830 Field Methods in Plant Ecology (4)

Ecology
5000 Thesis
5100 Special Problems in Ecology (1-3)
5210-20-30 Principles of Ecology (2, 2, 2)
5310 Ecology for Planners and Engineers (3)
5320 Implementation of Environmental Policy (3)
6000 Doctoral Research and Dissertation
6100 Special Topics in Ecology (3)

Economics
4260 Economics of Resources (3)

Environmental Engineering
4700 Air Pollution-Air Resources Management (3)

Forestry
4005 Forest Ecosystems (3)
4450 Game Mammals (4)
4460 Game Birds (4)
5210 Seminar in Wildlife Conservation (3)

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### Medieval Studies—Course Listing

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### Category #2 Language and Literature

| Classics 4310 (3) | Selected Reading from Latin Literature (readings in Latin) |
| Comparative Literature 4012-22-32 (3, 3, 3) | Special Topics in Comparative Literature (when subject is part of medieval culture and society) |
| 4050-60-70 (3, 3, 3) | Dante and Medieval Culture |
| English 4410 (3) | Introduction to Study of English Language (no language requirement) |
| 4420 (3) | History of English Language (no prerequisites) |
| French 4910-20 (3, 3) | Chaucer (readings in Middle English) |
| 4350-60-70 (3, 3, 3) | Medieval French Literature (readings in French) |
| 4410 (3) | French Civilization (readings in French) |
| 3210 (3) | French Literature in English Translation |
| German 4310 (3) | History of German Language (readings in German) |
| 3210 (3-4) | German Literature in English Translation |
| 3240 (3) | Old Norse Literature in English Translation |
| Italian 4050-60-70 (3, 3, 3) | Dante and Medieval Culture (readings in English or Italian) |
| 4330 (3) | History of Italian Language (readings in Italian) |
| 4010 (3) | Italian Drama in English Translation (or in Italian) |
| Spanish 4050-60-70 (3, 3, 3) | Hispano-Arabic Literature and Culture (in English Translation) |

### Category #3 The Arts

| Architecture 3320 (3) | Medieval and Byzantine Architecture |
| 4010 (1-8) | Special Problems in Architecture (when subject is part of medieval culture and society, e.g. Gothic and Scholasticism) |
| Art 4390 (3) | Seminar in Medieval Architecture |
| 2735 (4) | History of Medieval Art |
| 3715 (4) | Early Italian Renaissance Art, 1300-1500 |
| 3705 (4) | Northern European Painting, 1350-1600 |
| Music 4200 (1-3) | Independent Study in Music History and Literature (when subject is part of medieval culture and society) |
| 4280 (3) | The Mass to 1600 |
| 4290 (3) | Gregorian Chant |
| Theater 3252 (4) | History of the Theater |


1 Alumni; Distinguished Service Professor.
2 John C. Hodges Professor.
3 Visiting Professor.
4 On Leave.

UNDERGRADUATE

Major: (36-39 hours) Two courses in English at the 2000-level are prerequisite to a major, which consists of the following requirements:

(1) English 2150 should be taken as soon as possible after the student has elected English as a major.

(2) Upper Division courses in English (27 hours)

Nine English courses at the 3000 and 4000 level should be distributed over a broad spectrum of British and American Literature, either

(a) by taking 15 hours in the British and American upper-division surveys (9 hours in English 4990 and 6 hours from English 4990-4991) and the remaining 12 hours in individual author and genre courses or in English linguistics; or

(b) by taking 6 hours each from the courses listed below under categories A, B, and C; with the remaining 9 hours arranged to form a coherent program.

Three hours of advanced writing (Category D below) may fulfill a part of either (a) or (b) above.

(3) Additional courses in literature or language (6-9 hours), either

(a) 6-8 hours of 3000 level literature in a foreign language;

(b) 6-9 hours of comparative literature or foreign literature in translation, at least half at the upper-division level.

(4) Corequisites-English majors must complete the equivalent of the second (2000-level) year of a foreign language—Special Programs for the Major—The Departmental Committee on the Major is empowered to approve the individualized programs developed by students in consultation with their advisors. These programs need not necessarily fulfill all of the requirements listed above.

Honors Program—For students who qualify, the English Department offers a program of individualized study in the fourth year, culminating in a senior thesis and comprehensive examination. If these two are passed with grades of B or better, the student will be graduated with honors in English.

CLASSIFICATION OF UPPER-DIVISION ENGLISH COURSES FOR THE MAJOR

A. To the Eighteenth Century: 3510, 3520, 3530, 3710, 3910-20, 4010-20, 4410-20, 4510, 4730, 4850, 4860, 4910-20.


C. Nineteenth and Twentieth Century: 3030, 3070, 3080, 3140, 3150, 3210-20, 3411-12-20-30, 3930, 3940, 4060, 4210-20-30, 4320-30-40, 4620, 4652, 4660, 4680.

D. Advanced Writing: 3450, 3460, 3470,3830, 4960.

Minor: 24 hours, including at least 18 at the upper-division level.


Certification for Teaching English and Speech in Tennessee

Consult Certification Clerk, Room 212, Claxton Education Building.

General Prerequisites English 1510-20 or equivalent are prerequisite to all English courses numbered above 2000.

1111 Written and Oral English for Foreign Students (8) Rapid review of English grammar structures and pronunciation with intensive oral and written drill. Required during the first quarter of residence of all foreign students (graduates, undergraduates, and transfer students) who are not exempted from it on basis of English Proficiency Examination required of every new foreign student. Meets 10 hours a week.

1112 Written and Oral English for Foreign Students(3) Emphasis on more advanced structures of English grammar and on paragraph writing. Required during first quarter of residence of foreign students who on English Proficiency Examination demonstrate need for work in English structure, but not at intensive level of English 1111. Meets five hours a week.

1113 English Composition for Foreign Students (2) Composition and reading for students whose native language is not English. Emphasis on organization, paragraphing and theme structure, with attention to grammar and mechanics. Open to graduate students. Prereq: 1111 or recommendation based on English Proficiency Examination.

1113 English Composition for Foreign Students (3) Typical writing problems encountered by foreign undergraduate and graduate students, with attention to library research and use of research papers. Open to graduate students. Prereq: 1121 or recommendation based on English Proficiency Examination.

1English 1112-21-31 replaces English 1510-20 for undergraduate foreign students.
1510-20 English Composition (4, 4) Writing, revising, conferences; intensive reading for meaning and ways of expressing meaning. 1510—Writing with emphasis on organization, paragraph structure, style, attention to grammar and mechanics. 1520—Writing based on reading of literature, use of library and preparation of documented papers. Must be taken in sequence.

1518-28 Honors: English Composition (4, 4) For students planning on basis of placement scores and high school record. Must be taken in sequence.

1550 Research Writing (2) Use of library, forms of documentation, preparation of research paper. Prereq: English 1510-20 or the equivalent.

1510 Colloquium for English Majors (3) Introduction to methods and objectives of literary study; conferences to plan student's program in major.

2510-20 English Masterpieces (4, 4) 2510—To the mid-eighteenth century. 2520—Since the mid-eighteenth century.

2530 American Masterpieces (4)

2540 The Literature of Black America (4) Poetry, fiction, drama. Emphasis on twentieth century.

2560-70-80 Literature of the Western World (4, 4, 4) 2560—Ancient and medieval. 2570—Through the eighteenth century. 2580—Nineteenth and twentieth centuries.

2590 Special Topics (4) Content varies. Each section will deal with specific topic as it is embodied in works from several historical periods and literary genres. Topics will be announced.

2640-50 English Culture (4, 4) 2640—Beginnings to the late eighteenth century. 2650—From the late eighteenth century to the present.

2660 Introduction to Drama (4) Study of selected plays to provide critical tools necessary for understanding of drama.

2670 Introduction to Poetry (4) Study of selected poems to provide critical techniques necessary for reading of different types of poetry.

2680 Introduction to the Novel (4) Study of selected novels to provide critical tools necessary for judging longer works of fiction.

3010-20-30 American Literature (3, 3, 3) 3010—John Smith through Poe. 3020—Emerson through Mark Twain. 3030—Henry James to present.

3070 Modern British Poetry (3) From Housman to Thomas and more recent poets.

3080 Modern American Poetry (3) From Robinson to Stevens and more recent poets.


3140 The Short Story (3) Selections vary.

3150 Melville (3)


3310 Women Writers in England and America (3) Emphasis upon the literary consciousness of women in the nineteenth and twentieth centuries.

3411-12-20-30 Modern Drama (3, 3, 3, 3) 3411—Continental to 1930. 3412—Continental since 1930. 3420—British. 3430—American. (Graduate credit normally limited to students in Speech and Theatre.)

3440 Literature and Film (3) Aesthetic relationships, emphasis upon media comparison.

3450 Writing of Fiction (3) Practice based upon analysis of modern fiction. (Sophomores admitted with instructor's written permission.)

3460 Advanced Fiction-Writing (3) Prereq: English 3450 and permission of instructor.

3470 Writing of Poetry (3) Practice based upon analysis of poetry.

3510 Sixteenth-Century Prose and Poetry (3) More and Wyatt to Spenser.

3520 Elizabethan Drama (3) Marlowe, Jonson, and others.

3530 Jacobean Drama (3) Beaumont and Fletcher to Massinger and Shirley.

3610 Restoration and Eighteenth Century Poetry (3) Emphasis upon Dryden and Pope.

3620 Restoration and Eighteenth-Century Drama (3) Dryden through Sheridan.

3630 Restoration and Eighteenth Century Prose (3) Defoe, Addison, Steele, Swift, and others.

3670 Age of Johnson (3)

3710 Literature of the English Bible (3) (Same as Religious Studies 3710)

3830 Expository Writing (3) Practice based upon analysis of modern essays. (Not offered for graduate credit; sophomores admitted with instructor's written permission.)

3910-20-30 Comparative Literature (3, 3, 3) 3910—Ancient 3920—Medieval and Renaissance. 3930—Modern.

3940 Novel of the Contemporary Western World (3) Proust, Joyce, Mann, and others.

4010-20 Shakespeare (3, 3) 4010—Early plays, c. 1590-1601, including / Henry IV, Twelfth Night, and Hamlet. 4020—Later plays, 1601-1613, with emphasis upon tragedies and dramatic romances.

4050-60 American Novel (3, 3) 4050—From earliest sentimental novels through Brown, Cooper, and Kennedy, and major figures to 1875. 4060—From Henry James and Mark Twain through Faulkner and Hemingway.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (3-12) See page 161.

4103 Independent Study (3-12) See page 162.

4118-28-38 Honors: Senior (3, 3, 3) Admission by permission of department.

4210-20-30 Victorian Poetry (3, 3, 3) 4210—Tennyson and Pre-Raphaelites. 4220—Browning. 4230—Arnold, Clough, Fitzgerald, and others.

4310-20-40 The British Novel (3, 3, 3) 4310—Defoe to Jane Austen. 4320—Scott to Thackeray. 4330—George Eliot to Galsworthy. 4340—James Joyce to present.

4410 Introduction to Study of English Language (3)

4420 History of English Language (3)

4430 Modern English Grammar (3) Prereq: 4410, 4420, or consent of instructor.

4440 Language in Society (3) Methodology and significant discoveries of sociolinguistics in America.

4450 Varieties of American English (3) Theories, methodologies, and findings of American dialectology.

4460 Special Topics in English Linguistics (3) May be repeated for credit with permission of department.

4510 Introduction to Literary Criticism (3)

4610-20-30 Black Literature (3, 3, 3) Trends and developments.

4651 Southern Literature from 1585 to 1860 (3) Beginning of writing in the South, especially in its relations to formation of regional or southern tradition in literature.

4652 Southern Literature from 1860 to 1970 (3) Humorists, local colorists, and realists of later nineteenth century and New South, emphasis upon southern flowering of 1920-1950, recent trends.

4660 Emerson and Thoreau (3)

4680 American Humor through Mark Twain (3)

4720 Introduction to Folklore (3)

4730 The Popular Ballad (3)

4850 Milton (3) Emphasis on major poems.

4860 Seventeenth-Century Prose and Poetry (3) Bacon and Donne to Marvell.

4910-20 Chaucer (3, 3) 4910—Early poems and Troilus and Criseyde. 4920—The Canterbury Tales.

4950 Approaches to Literature (3) Basic knowledge and techniques necessary to understand and evaluate various kinds of imaginative literature.

4960 Advanced Composition and Rhetorical Analysis (3) Reading and analysis of selected prose models, study of rhetorical principles, practice in various forms of writing.

4990 Survey of British Literature (3) Lectures, extensive reading, comprehensive examination on major works of British literature from Beowulf to middle of twentieth century.

GRADUATE

5000 Thesis

5110-20-30 Tutorial in English (1, 1, 1)

5150 Old English Prose (3)

5210-20-30 Readings in American Literature from Colonial Period to Present (3, 3, 3)

5410-20-30 Readings in Middle English Literature (3, 3, 3)

5510-20 Readings in Literary Criticism from Plato and Aristotle to Present (3, 3)

5610-20-30 Readings in English Literature of Nineteenth Century (3, 3, 3)

5710-20-30 Readings in English Literature of Eighteenth Century (3, 3, 3)

5810-20-30 Readings in English Literature of Renaissance (3, 3, 3)

5860 Introduction to Literary Research (3)

5910-20-30 Readings in English and American Literature of Twentieth Century (3, 3, 3)

6000 Doctoral Research and Dissertation

6110-20-30 Studies in Elizabethan Literature (3, 3, 3)

6150 Old English Poetry (3)

6160 Beowulf (3)

6170 Studies in Middle English (3)

6181-82-83 Studies in the English Language (3, 3, 3)

6210-20-30 Studies in American Literature (3, 3, 3)

6241 Studies in Colonial American Literature (3)

6242 Studies in Colonial American Literature (3)

6250-60 Studies in Bryant, Longfellow, Lowell, Holmes, Whittier, and Twain (3, 3)

6270-80 Studies in American Fiction (3, 3)

6310-20-30 Studies in Victorian Literature (3, 3, 3)

6410-20-30 Studies in the Novel (3, 3, 3)

6510-20-30 Studies in Spooner and Milton (3, 3, 3)

6610-20-30 Studies in English Romanticism (3, 3, 3)

6710-20-30 Studies in Eighteenth-Century Literature (3, 3, 3)

6810-20-30 Studies in Drama and Theatre (3, 3, 3)

6910-20-30 Studies in Twentieth-Century Literature (3, 3, 3)

French

See Romance Languages
Geography (415)

Professors: E. H. Hammond (Head) Ph.D. California (Berkeley); S. R. Jumper, Ph.D. Tennessee; R. G. Long, Ph.D. Northwestern; T. H. Schumacher, Ph.D. Wisconsin.
Associate Professors: C. S. Atkinson, Ph.D. Georgia; L. W. Brinkman, Jr., Ph.D. Wisconsin; J. B. Rehder, Ph.D. Louisiana State.
Assistant Professors: T. L. Bell, Ph.D. Iowa; J. R. Carter, Ph.D. Georgia W. N. Cherry, M.S. Tennessee.


UNDERGRADUATE

Major: Eight hours in courses numbered at the 1000- or 2000-level are recommended as an introduction to a major which consists of Geography 4100, 4210, 4710 and 4990, and an additional 24 hours selected from courses at the 3000- and 4000-level. At least one course must be selected from each of groups A, B, C, and D below:

A. Physical Geography: 3520, 3530, 4540, 4550
B. Economic Geography: 3410, 3430, 3490, 4610, 4630
C. Cultural Geography: 3450, 3610, 3660, 4240
D. Regional Geography: 3790, 3800, 3810, 3840, 3870, 3980, 3910, 3920, 3930

Minor: Eight hours in courses numbered at the 1000- or 2000-level are recommended as an introduction to the minor which consists of 24 hours selected from courses at the 3000- and 4000-level.

Students wishing to major or minor in geography are strongly urged to consult with a departmental undergraduate advisor. Through choices available within the structure of the major and by appropriate selection of electives outside the department, each student may develop a coherent program in accordance with his specific interests and needs. Such programs might emphasize particular aspects of geography itself or might develop interdisciplinary themes such as natural environment and resources, urban and regional planning or the culture, history or economy of a particular area.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Asian Studies. See Cultural Studies.
Latin American Studies. See Cultural Studies.
Russian and East European Studies. See Cultural Studies.

1610-20 Introduction to Geography (4, 4) Selected problems or situations of contemporary interest are studied in depth, illustrating geographical points of view and techniques. Must be taken in sequence. Not open to students who have taken 1110-20.

1720-30 Elements of Geography (3, 3) Role of places and patterns of understanding man in his environment. Man and his activities.

1810-20 Geography of the Natural Environment (4, 4) Characteristics and processes of earth’s surface and lower atmosphere; their interaction to produce world pattern of distinctive environments significant to man. Must be taken in sequence. 1810 not open to students who have taken 1710.

2110-20-30 Economic Geography (4, 4, 4) The significance of location, pattern, and environment in economic activity. Emphasizes: 2110-agriculture; 2120—energy, minerals, and manufacturing; 2130—transportation and trade. Need not be taken in sequence.

2200 Meterology (4) Introduction to dynamic atmosphere and resulting weather events. Nature of individual weather elements, their measurement and analysis over time and space. Not open to students who have taken 3510.

2400 Geography of Population (4) World population pattern; regional socio-economic characteristics and demographic trends; relationship to resource base. Not open to students who have taken 4410.

3000 Man, Location, and Behavior (4) Types of human spatial behavior, such as shopping patterns, commuting, residential mobility, trade, and regional consciousness, as they relate to distance, natural environment, and culture. Order and regularity in pattern of human use of earth’s surface.


3430 Urban Geography (4) Concepts and theories concerning development and significance of systems of cities and urban morphology of cities. Not open to students who have taken 4460.

3450 Rural Geography (4) Geographical appraisal of rural areas of the United States, including small towns and urban fringes. Problems and potentials of rural America.

3490 Conservation and Management of Resources (4) Policies, problems, and prospects of resource availability and utilization. Emphasis on locational relationships. Not open to students who have taken 4640 or 4650.

3520 The Atmospheric System and Man (4) Overview of general circulation system leading to world pattern of climates. Role of climate in agriculture, architecture, human comfort, and economic activity.

3530 The Land-Surface System and Man (4) Nature and regional variations in relationships among surface form, water, vegetation, and surface materials. Man as evaluator and agent of change.

3610 Political Geography (4) Importance of geographic factors for understanding political relations within and between nations; some implications of political decision-making process; geography of administrative units.

3600 Cultural Geography (4) Basic concepts of culture, methods and background of cultural geography; world patterns of cultural phenomena.

3790 Geography of Middle America (4) Covers Mexico, Central America, and the West Indies.

3800 Geography of South America (4)

3810 Geography of Europe (4)

3830 Geography of Africa (3)

3840 Geography of Australia and Oceania (4) Survey of major physical, economic and social characteristics of Australia, New Zealand, and impact of western civilization on selected island groups of the South Pacific.

3870 Geography of Asia (4) A survey of the physical, cultural and economic characteristics of the countries of Asia, excluding the Soviet Union.

3880 Geography of the Soviet Union (4)

3910 Regional Geography of the United States and Canada (4) Major physical, economic, and social distributions and their interrelations in the distinctive characteristic regions of the United States and Canada. Not open to students who have taken 3710 or 3720.

3920 Geography of the American South (4)

3930 Geography of Tennessee (4)

3940 Geography of Appalachia (4) Interaction of physical, economic, and social patterns to give the distinctive character to the region and its parts, especially Southern Appalachia. Appalachia in perspective in the current American scene.

4100 Qualitative Methods in Geography (4) Geographical applications of statistical techniques, point pattern analysis and analysis of areal units. Prereq: Mathematics 3000 or permission of instructor.

4101 Foreign Study (1-18) See page 182.

4102 Off-Campus Study (1-18) See page 181.

4103 Independent Study (1-18) See page 182.

4210 Problems in Regional Geography (4) Definition and development of concepts and their application in field of geography. Methods and examples of regionalization. Each student works independently on specific problems in regionalization. (Not open for credit to graduate majors in geography.)

4240 Historical Geography of the United States (4) Survey of changing human geography of the United States during four centuries of settlement and development. Emphasis upon changing population patterns, development of agricultural regions and patterns of urban development. Not open to students who have taken 4250-60.

4510 Principles of Geomorphology (4) (Same as Geology 4510).

4540 Geographical Analysis of Land-Surface Form (4) Properties of land surface, their significance and factors that control regional variation. Emphasis upon techniques of analysis and classification, applicable also to other geographical phenomena. 3530 or 4510 recommended.

4550 Geography of Soils (4) Soils as physical systems and their relationship to environments. Investigation of specific cases of role of soil in management of environmental systems.

4610 Industrial Geography (4) Factors affecting location of manufacturing activities, with emphasis upon the United States. Prereq: 3410 or permission of instructor.

4630 Geography of Agriculture (4)

4710 Cartography (4) Map construction, map reproduction, and practice in map drawing.

4720 Data Mapping (4) Methods of representing spatial distributions by maps and graphs. Maps and data may include phenomena as diverse as birth rates, voting patterns, and air pollution levels. Prereq: Junior standing or permission of instructor.

4740 Remote Sensing: Types and Applications (4) Basic principles and uses of aerial photography and other remote sensing techniques. Emphasis upon value of various types of imagery for geographic interpretation and simple mapping. Prereq: Permission of instructor.

4990 Proseminar in Geography (4) Overview of major themes in geography, especially trends over past 20 years. Designed for undergraduate majors and minors; not open to graduate students. Prereq: Completion of at least 12 hours of major or minor requirements for Geography.

GRADUATE

Master's Program
The general requirements for the Master's degree are given in the Graduate School Catalog.

Doctoral Program

General requirements for Doctor's degree are given in the Graduate School Catalog.

5000 Thesis
5150 Introduction to Geographical Research (3)
5160 Research Design to Field Problems (6-8)
5170 Geographic Concept and Method (3)
5200 Special Problems in Geography (3)
5250 Advanced Historical Geography (3)
5260 Advanced Cultural Geography (3)
5310 Advanced Regional Geography of the United States (3)
5320 Advanced Regional Geography of the South (3)
5410-20 Advanced Economic Geography (3, 3)
5450 Advanced Industrial Geography (3)
5520 Advanced Urban Geography (3)
5550 Advanced Physical Geography (3)
5610 Selected Topics in Climatology (3)
5710 Seminar in Geography (3)
5720 Topics in Quantitative Geography (3)
5910 History of Geography (3)
5915 Regional Geomorphology (4)
6000 Doctoral Research and Dissertation
6110-20 Seminar in Economic Geography (3, 3)
6220-30 Seminar in Urban Geography (3, 3)
6240-50 Seminar in Historical Geography (3, 3)
6260-70 Seminar in Cultural Geography (3, 3)
6310-20 Seminar in Rural Geography (3, 3)
6410-20 Seminar in Regional Geography of the United States (3)
6510-20 Seminar in Regional Geography of Latin America (3, 3)
6710-20 Seminar in Physical Geography (3, 3)

Geological Sciences

Professors:
D. G. Briggs (Head), Ph.D. Wisconsin; H. J. Kieper, Ph.D. Ohio State; O. C. Kopp, Ph.D. Columbia; L. T. Larson, Ph.D. Wisconsin; P. R. E. McLaughlin, Ph.D. Tennessee; R. M. Perham, Ph.D. Michigan; C. H. Roeder, Ph.D. Goethe University (Germany); J. G. Wallis, Ph.D. North Carolina.

Assistant Professors:
D. W. Byerly, Ph.D. Tennessee; J. H. Rule, Ph.D. Missouri; W. P. Steub, Ph.D. Iowa State.

On leave.

The Department of Geology provides training for (1) those who plan a career as a professional geologist in industry, federal and state surveys, education or other fields which utilize earth scientists; and (2) those who seek a general knowledge of geology and its relationships to the other sciences, engineering, business, law, and other disciplines.

The major requirements set forth below are designed to provide geology majors with a broad base from which qualified students may pursue professional careers or enter graduate study in one or more of the branches of geology or related minor fields. Because a wide range of elective courses is available, it is essential that each student be guided in planning his program by a departmental advisor. A list of advisors is available in the departmental office.

UNDERGRADUATE

Major: Geology 1510 and 1520 are prerequisite to a major which consists of Geology 3160, 3260, 3360, 3370 and at least 24 credits in additional upper-division courses in Geology. It is recommended that students take additional courses beyond the elementary level in at least one of the above allied fields.

Minor: Geology 1510 and 1520 are prerequisite to a minor which consists of at least twenty-four hours in courses numbered 2000 or above.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Geology (424)

1000 Frontiers in Earth and Planetary Sciences (4)
Recent developments in earth science of interest to the public. Designed for non-majors; treats popular topics such as discoveries on moon by Apollo missions, earthquake prediction, and drifting of continents.

Mathematics 1400-50 has prerequisites of 2 years high school algebra and one semester of trigonometry or equivalent. Students who are deficient in these subjects may need to take Mathematics 0150 and/or 1500 prior to enrolling in Mathematics 1400-50. Consult Mathematics section of this catalog or the Department of Mathematics for details.

1510 Geology I (4) Introduction to study of the earth and its processes which change it. 3 hrs and 1 2-2 hr lab or field period.

1520 Geology II (4) Continuation of Geology I emphasizing changes of the earth and its inhabitants. 3 hrs and 1 2-2 hr lab or field period.

1810-20 Introductory Geology (4, 4) Introductory course sequence emphasizing geologic principles and concepts. 3 hrs and 1 2-2 hr lab or field period.

2130 Historical Geology of the Earth (4) Origin and evolution of continents, atmosphere, oceans and earth's inhabitants. Designed for non-majors. 3 hrs and 1 2-2 hr lab or field period.

2210 History of Life on Earth (4) Chronological account of origin and evolution of life, its environment, and societal patterns. 3 hrs and 1 2-2 hr lab or field period.

2310 Mineral Resources and the National Economy (4) Distinctive features and significance of mineral industries in national economy. Domestic and international supply for industrial and consumer materials. Conservation and exploitation of our mineral resources. 3 hrs and 1 2-2 hr lab or field period.

2410 Geology of National Parks (4) Important geologic features of National Parks. 3 hrs and 1 2-2 hr lab or field period.

2610 Introductory Geology for Engineers (4) Materials and structure of the earth. For College of Engineering students only. 3 hrs and 1 2-2 hr lab or field period.

2710 Introductory Oceanography (4) Introduction to study of oceans including origin and development of ocean basins and physical and biological processes. 3 hrs and 1 2-2 hr lab or field period.

3160 Introduction to Earth Materials (4) Introduction to study of rocks and materials. Laboratory includes core and thin section analyses and methods of identification. 3 hrs and 1 2-2 hr lab or field period.

3180 Mineralogy (4) Classification and identification of silicate, carbonate, and oxide minerals. 3 hrs and 1 2-2 hr lab or field period.

3210-20 Invertebrate Paleontology (4, 4) Systematic study of invertebrate fossils. 3 hrs and 1 2-2 hr lab or field period.

3270 Geology of Land Organisms (4) Geological history and development of terrestrial biota and ecosystem with special emphasis on fossil
record of land plants and vertebrates. Prereq: Biology 1210/20 or permission of instructor. 3 lectures and 1 lab or field period.

3290 Physical and Biological Quaternary Environment of Humans (4) Interdisciplinary interactions of physical and biological Quaternary environment with humanity, stressing important effects on landscapes and biota that influence humans today. 2 lectures and 2 labs or field period.

3310 Limnology (4) Classification and properties of igneous, metamorphic, and sedimentary rocks. Laboratory includes both hand specimen and microscopical study of rock type. Prereqs: 3160, 3180 strongly recommended. 2 lectures and 2 labs.

3330 Geology of East Tennessee (4) Lectures and field excursions. Prereq: 12 quarter hours of geology and permission of instructor.

3360 Stratigraphy-Sedimentation (4) Introductory study of stratigraphic principles and practices and of sedimentary processes and interpretation of depositional environments. Prereqs: 1520 and 3160. 3 hrs and 1 lab or field period.

3370 Structural Geology (4) Introductory discussion of structures such as folds, faults, joints, cleavage, and primary structures. Laboratory work includes different and thickness problems. Structure sections, structure contour maps, etc. Prereq: 1520; Mathematics 1810-20 or equivalent. 3 hrs and 1 lab.

3410 Principles of Ground Water Geology (3) Geologic problems involving earth's resources affecting occurrence and behavior of water. Not open to geology majors. 2 lectures and 1 lab. (Same as WDR 3410)

3420 Geohydrology (3) Ground water with particular emphasis given to its chemistry, mode of migration, and relation to geologic environment. Prereq: 3410 or permission of instructor.

3510 Introductory Environmental Geology (4) Geologic problems involving earth environments and resources, and geologic parameters associated with their control and misuse. Prereq: 1520 or permission of instructor. 2 lectures and 2 lab or field periods.

3520 Our Changing Landscapes (4) Basic introduction to study of landscape-forming processes and their interactions with earth materials to produce landscapes. Laboratory experience includes slope-and streamtable experiments and field experience. Not intended for geology majors. 2 hrs and 2 lab or field periods.

3610 Quaternary Geology for Engineers (3) Erosional and depositional processes, landforms, groundwater, 2 lectures and 1 lab or field period. Prereq: 2610 or equivalent.

3710 Origin and Evolution of the Continents and Ocean Basins (4) Introductory study of origins and changes that have occurred in earth's crust with emphasis on modern concepts of continental drift and plate tectonics. Prereq: 1520.

4110 Principles of Economic Geology (4) Formation of mineral deposits. Prereq: 3160; 3370 or equivalent.

4115 Elementary Applied Geophysics (4) Basic principles of electrical, seismic, gravity and magnetic surveying. Recommended: 1520, Physics 2220 or 2320. 3 lectures and 1 lab.

4130 Sedimentology (4) Prereq: 3310. 2 hrs and 2 labs.

4210 Biostratigraphy (4) Fossil faunas and floras and their use in geochronology, stratigraphic correlation, and paleoecology. Prereq: 2210-20. 3 hrs and 1 lab.

4230 Paleocology (4) Principles of environmental analysis as applied to fossil assemblages and associated lithologies. Prereq: 3260 or permission of instructor. 3 hrs and 1 lab.

4240 Paleobotany (4) Survey of fossil record of plants with particular emphasis on (1) comparative morphology and evolutionary trends in major plant groups and (2) chronological succession and geographic distribution of past floras on earth. Prereq: 1520 or 2210; Botany 3010-20 or permission of instructor. 3 lectures and 1 lab or field period. (Same as Botany 4240)

4310 Geologic Mapping (3) Interpretation of maps and methods of geologic mapping. Prereq: 12 quarter hours of Geology.

4370 Tectonic Styles (4) Elements, habitats, and geotectonic causes of basic styles of tectonic deformation are presented on maps, sections, aerial photographs and fabric diagrams. 3 lectures and 1 seminar or lab. Prereq: 3370 or permission of instructor.

4440 Field Geology (5) Five weeks' field course, first term summer quarter. Advanced undergraduates or first-year graduates in geology. Employs entire time of students. A report is required, to be submitted no later than end of fall quarter. Prereq: 12 quarter hours of geology and permission of instructor.

4460 Geologic Photography and Photogrammetry (4) Principles of terrestrial and aerial geologic photography, including photographic principles and practice, geometry of terrestrial and aerial and image interpretation. Prereq: 3370 or permission of instructor. 3 lectures and 1 lab.

4510 Principles of Geomorphology (4) Gravitational processes acting at earth's surface and landforms produced. Prereq: 1110-20 or permission of instructor. 3 hrs and 1 lab.

4610 Principles of Geochemistry (4) Application of chemical principles to geologic problems. Emphasis on crystal chemistry and relation between basic atomic structure and distribution and behavior of elements in the earth's crust. Prereq: Chemistry 1110-20 or equivalent required. Recommended 3160.

4650 Mineral Phase Equilibria (3) Principles of phase chemistry and application of phase equilibrium studies in rock-forming mineral systems as aid to understanding conditions of formation and modification of rocks. Prereq: 3310 or permission of instructor.

4680 Electron Microprobe Analysis: Theory and Application (3) Techniques and applicability of electron probe in chemical analysis; emphasis on applications in the earth sciences. Prereq: 3310 or permission of instructor. 2 lectures and 1 lab.

4710 Petrography (3) Fluid, heat, electric current and stress as the causes of rock masses in a potential field. Stress-strain behavior of rock as a function of temperature and pressure. 3 lectures per week. Prereq: 3310, Mathematics 1830, Physics 1330. Recommended: Mathematics 2610 and 2820.

4760 Global Tectonics (3) Earth's gravity field, seismology and internal structure of earth; geomagnetic field, paleomagnetism, radioactivity and age of earth; earth's internal heat, creep and anelasticity of the mantle. 3 lectures per week. Prereq: 4115 or permission of instructor.

4810 Special Problems in Geology (1-4) Prereq: Permission of instructor. May be repeated to a maximum of 4 hours credit.

GRADUATE

Master's Program

General requirements for Master's degree given in the Graduate School Catalog.

Doctoral Program

General requirements for Doctor's degree given in the Graduate School Catalog.

5000 Thesis

5050 Geochemistry of Ore Mineral Deposits (3)

5060 Experimental Geochemistry (3)

5069 Experimental Geochemistry Laboratory (1-3)

5120 Geophysics-Gravity and Magnetic Methods (4)

5130 Geophysics-Seismic Exploration Methods (4)

5210-20 Special Problems in Geology (1-4, 1-4)

5290 Quaternary Problems (4)

5310 Principles of Stratigraphy (4)

5320-30 Advanced Historical Geology (3, 3)

5340 Seminar in Local Stratigraphy

5350-60 Selected Topics in Geology (1, 1)

5370 Regional and Field Tectonics (4)

5460 Photogeologic Interpretation (4)

5510 Optical Mineralogy (4)

5520 Igneous Petrology (4)

5530 Metamorphic Petrology (4)

5540 Non-carbonate Sedimentary Petrology and Basin Analysis (4)

5550 Carbonate Sedimentology (4)

5630 X-ray Diffraction and Spectroscopy (4)

5640 Clay Mineralogy (4)

5650 Thermodynamics for Geologists (3)

5660 Chemical Geology (3)

5670 Geochemical Prospecting (3)

5710 Advanced Paleontology (4)

5750 Petrography (3)

5810 Geology of Fuels (4)

5820 Metallic Mineral Deposits (4)

5830 Non-metallic Mineral Deposits (4)

5840 Ore Microscopy (4)

5850 Regional Studies in Economic Geology (3)

5915 Regional Geomorphology (4)

6000 Doctoral Research and Dissertation

6110-20-30 Seminar in Stratigraphic Geology (3, 3, 3)

6210-20-30 Seminar in Paleontology (3, 3, 3)

6310-20-30 Seminar in Structural Geology (3, 3, 3)

6410-20-30 Seminar in Mineralogy (3, 3, 3)

6510-20-30 Seminar in Petrology (3, 3, 3)

6610-20-30 Seminar in Economic Geology (3, 3, 3)

6710-20-30 Seminar in Geochemistry (3, 3, 3)

6810-20-30 Seminar in Geostatistics (3, 3, 3)

180 College of Liberal Arts

Germanic and Slavic Languages

Professors: H. Krazt (Heidelberg), Ph.D. Ohio State; H. W. Fuller, Ph.D. Wisconsin; E. T. Hankamer (Emirius), Ph.D., Bonn (Germany); R. L. Hiller, Ph.D. Cornell; R. L. Nordsleek, Ph.D. Ohio State; J. C. Osborne, Ph.D. Northwestern.


Assistant Professors: J. S. Elliott, Ph.D. Michigan; D. M. Fien, Ph.D. Indiana; N. A. Lauckner, Ph.D. Wisconsin; C. J. Mallor, Ph.D. Chicago.


UNDERGRADUATE

Placement Examination: Students who have had previous work in German or Russian
either in high school or in another college should register for the course in which they would normally be placed. During the first week of the quarter a placement test will be given, and students will be advised if a change in registration is indicated.

Proficiency Examinations: Students who have acquired a knowledge of German or Russian through private study, tutoring, residence in foreign countries, or the like, should request a proficiency test. A student earning a grade of C or better on such a test will receive credit for a limited number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits. Students who omit any course in a subject are required to pass proficiency examinations for it by passing a proficiency examination.

Foreign Study: Students are encouraged to study abroad. The department is prepared to recommend summer study programs and junior year abroad programs for students who are interested in foreign study. Credits from recognized foreign study programs can readily be transferred to The University of Tennessee. For qualified students, the department also offers German 4101 Foreign Study and Russian 4101 Foreign Study. See page 182. Students should consult the department before registering for the foreign study course.

German

Major: Majors or Minors in German should carefully prepare their programs in consultation with the departmental faculty adviser. German 2510-20 or 2530-40 or the equivalent is a prerequisite to the major and minor. The major concentration shall consist of at least 36 hours of German in courses numbered above 3000, usually including German 3110-20-30 (or 3410-20-30), 3810-20-30, 9 hours of German literature in courses numbered above 4000 and 9 additional hours of courses numbered above 3000, excluding 3010-20-30 and courses in English translation. It is recommended that German majors take History 1510-20 or 3710-20-30 and 8 hours of Sophomore English. Majors are also encouraged to take an minor in some other area of the humanities. German 2510-20, 2530-40 or its equivalent is a prerequisite to the minor. The minor concentration shall consist of at least 24 hours of German courses numbered above 3000, which will normally include German 3110-20-30 (or 3410-20-30), and 15 additional hours of courses numbered above 3000, excluding 3010-20-30 and courses in English translation.

Russian

Major: Russian majors should carefully prepare their programs in consultation with the departmental faculty adviser. Russian 2510-20 or its equivalent is a prerequisite to the major. Russian 2640-50 is a corequisite to the major. The major itself consists of 36 hours of Russian courses, including Russian 3110-20-30, 3810-20-30, 9 hours from Russian 3210-20-21-30, 3240, 3250, 3260, and 9 hours of courses numbered above 4000. It is recommended that majors also take History 3470-80-90 and 9 hours of sophomore English. Majors are urged to consider a minor in some other area of the humanities.

Minor: Russian 2510-20 or its equivalent is a prerequisite to the minor. The minor consists of 26 hours of Russian courses, including 8 hours from Russian 2640-50 and/or 3210-20-21-30, 3240, 3250, 3260 and 18 hours to be taken from Russian 3110-20-30, 3810-20-30 and courses numbered above 4000.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements of a major in the 1972-73 or earlier general catalog.

Russian and East European Studies. See Cultural Studies.

Certiﬁcation for Teaching German and Russian in Tennessee

Consult Certiﬁcation Clerk, Room 212, Claxton Education Building.

German (433)

1510-20 Elementary German (4, 4) Must be taken in sequence.

1518-2518-28 Honors: Elementary and Intermediate German (4, 4, 4) Designed for students of superior ability. Freshmen are admitted on the basis of high school average and performance on the American Council Testing Program. Upperclassmen must have a B average. A grade of C or above must be achieved in 1518 in order to continue with 2518. A student obtaining a grade of D or better in 1518 may continue with German 1520. This sequence is equivalent to 1510-20 and 2510-20 and its completion allows the student to enter all 3000 level German courses.

2510-20 Intermediate German (4, 4) Must be taken in sequence. Students who have had two units of German in high school or one year in college and who wish to continue Intermediate German after some lapse of time are given the opportunity of enrolling in a five-hour per week section of German 2510-20. In this class they will have the benefit of a controlled review of the basic essentials of Elementary German.

2530-40 Intermediate German (4, 4) For students in Science-Medical Curriculum or B.S. Curricula in natural science; must be taken in sequence.

3010-20-30 Elements of German for Upper Division and Graduate Students (3, 3, 3) For graduate students preparing for language examinations. Upper Division undergraduates desiring reading knowledge of second foreign language. Prerequisite: Two years of some foreign language, in college or college-level permission of department. Undergraduate credit only. No credit for students having completed 1110-20-30.

3110-20-30 Introduction to German Literature (3, 3, 3) Prerequisite: 2130 or equivalent.

3410-20 Readings in Modern and Contemporary German Literature (3, 3) Prerequisite: 2130 or equivalent.

3610-20 German Civilization (3, 3, 3) Prerequisite: 2130 or equivalent.

3810-20 Conversation and Composition (3, 3, 3) Prerequisite: 2130 or equivalent.

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 182.

4102 Off-Campus Study (1-13) See page 181.

4103 Independent Study (1-16) See page 182.

4110-20-30 Studies in Classical and Modern Writers (3, 3, 3) Content varies. May be repeated for credit with permission of department. Prerequisite: 9 hours of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent.

4140-50 Selected Topics in German Literature from 1100 B.C. to the Present. 21 Prerequisite: 9 hours of 3000 courses (exclusive of 3010-20-30 and 3210-20-30) or equivalent.

4160 Studies in German Authors (3) Life and works of single outstanding author. Content varies. May be repeated for credit. Prerequisite: 9 hrs of 3000 courses (exclusive of 3010-20-30 and 3210-20-30.)

4170 Theatrical German (1-3) Performance in one or more German plays. May be repeated for credit with permission of department. Prerequisite: 2130 or equivalent or consent of instructor.

4210-20-30 Studies in German Literary Types (3, 3, 3) 4210—Lyric Poetry, 4220—Drama, 4230—Narrative Prose. Prerequisite: 9 hrs of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent.

4250 Introduction to Descriptive Linguistics (3) (Same as Russian, French and Spanish 4250).

4260 Introduction to Historical and Comparative Linguistics (3) Linguistic change, proto-languages, phonological and morphological change. Cultural, historical, sociological influences upon the development of language. Semantic change, Lexicography. All these topics copiously illustrated by selected examples from Indo-European languages. Prerequisite: 9 hrs of upper division English, or 9 hrs of upper division courses in a modern or ancient language (exclusive of German and French). Prerequisite: 2000-20-30 or comparable translation, and general courses in Latin and Greek requiring no knowledge of these languages, or permission of department. (Same as Russian, French and Spanish 4260.

4270 Introduction to Germanic Linguistics (3) Phonetics and phonemics of German, German grammar and German etymology from a descriptive point of view. Distincts of German. Introduction to study of other Germanic languages.

4310-20 History of German Language (3, 3)

4618-28-38 Honors: Senior German (3, 3, 3) Intended to give student of special aptitude greater opportunity to do independent study than is possible in ordinary courses. Prerequisite: Senior standing, with a record of "A" in half of German courses taken as prerequisite to the 4000 courses, average of "B" in remainder, and permission of department.

4810-20-30 Advanced Conversation and Composition (3, 3, 3) Prerequisite: 3810-20-30 or equivalent or permission of department.

GENERAL COURSES

2640-50 Culture of German-Speaking Peoples (4, 4) Studies in cultural traditions of all peoples speaking german from their first contact with Romans to the present. Readings are in English language.

3210-20-30 German Literature in English Translation (3-4, 3-4, 3-4) No foreign language credit. No change in credit hours after add deadline. Students opting for 4 hours credit will be expected to present an appropriate amount of extra work that required for 3 hours.

3240 Old Norse Literature in English Translation (3-4) Prose readings of sagas of Norwegian kings, great Icelandic family sagas, and Viking sagas, narrating discovery of America around the year 1000. Mythological and heroic poems of the Edda.

3250 Modern Scandinavian Literature in English Translation (3) Introduction to modern literature of Sweden, Norway, Denmark, and Iceland. Representative readings by such writers as Ibsen, Strindberg, Lagerhjelm, Hamsun, Vesaas, Largskiv, Bang, Nexø, Laxness.

3260 German Drama in English Translation (3) From Lessing to present. Prerequisite: English 101.

3270 Modern German Novel in English Translation (3) From 1900 to present; Remarque, Hesse, Mann, Kafka, Frisch, Böll, Grass. No foreign language credit.
3280 Goethe's Faust in English Translation (3) Intensive study of Faust I and II and survey of criticism and interpretations of the work. No foreign language credit.
3310 Dramas of Bertolt Brecht (3-4) Chronological survey of Brecht's dramatic works and theoretical writings in English translation. No foreign language credit.
3320 Novels of Hermann Hesse (3-4) Study and analysis of Hesse's major novels in English translation. No foreign language credit.
3330 Dramas of Ibsen and Strindberg (3-4) Study of two principal forerunners of twentieth century drama. Works are read in English translation. No foreign language credit.
4000 The Faust Legend (3) Survey of development of legend from Faust chaukbook to present, excluding Goethe's Faust. No foreign language credit.

GRADUATE
The Department of Germanic and Slavic Languages offers three advanced degrees. They are: Master of Arts (M.A.) in German, Master of Arts in College Teaching (M.A.C.T.) in German, and Doctor of Philosophy (Ph.D.) in Germanic Languages and Literature. The requirements for these degrees are set forth in the Graduate School Catalog.

5000 Thesis
5100 German Phonetics and Advanced Grammar (3)
5160 Introduction to German Semantics (3)
5200 Proseminar (3)
5210-20-30 College Teaching of German (1, 1, 1)
5410-20-30 Medieval German Language and Literature (3, 3, 3)
5510 German Humanism and Reformation (3)
5520 German Baroque Literature (3)
5530 The Enlightenment and the Rococo (3)
5540 German Classicism (3)
5550 Goethe's Faust (3)
5560 German Romanticism (3)
5570 German Realism and Naturalism (3)
5580 Modern German Literature (1889-1945) (3)
5590 Modern German Literature (1945-Present) (3)
5600 German Literary Theory and Criticism (3)
5610-20-30-40-50-60 Directed Readings in German Language and Literature (3, 3, 3, 3, 3, 3)
5710 Introduction to Old Norse (3)
5720 Readings in Old Norse Prose (3)
5730 Readings in Old Norse Poetry (3)
6000 Doctoral Research and Dissertation
6100 Gothic (3)
6120-30 Old High German (3, 3)
6140 Old Saxon (3)
6210-20-30-40-50-60 Seminar in German Literature (3, 3, 3, 3, 3, 3)
6310-20-30 Seminar in German and Germanic Philology (3, 3, 3)

Russian (886)

UNDERGRADUATE
1510-20 Elementary Russian (4, 4) Must be taken in sequence.
1610-20 Elementary Serbo-Croatian (4, 4) Must be taken in sequence.
2510-20 Intermediate Russian (4, 4) Must be taken in sequence.
2670-80 Intermediate Serbo-Croatian (4, 4) Must be taken in sequence.
3010-20-30 Elements of Russian for Graduate Students and Seniors (3, 3, 3) For graduate students preparing for language examinations and seniors desiring reading knowledge of a second foreign language. Prereq: 2 yrs of some foreign language in college or permission of department. Undergraduates limited to credit only. No credit for students having completed 1110-20-30 or equivalent.
3110-20-30 Introduction to Russian Literature (3, 3, 3) 3110—Russian Poetry. 3120—Russian Short Stories. 3130—Russian Short Novels.

3310 Russian Scientific and Technical Literature (3) Prereq: 2130 or equivalent.
3810-20-30 Russian Composition and Conversation (3, 3, 3) Practice in writing and speaking; grammar review and vocabulary building.

ADVANCED UNDERGRADUATE AND GRADUATE
4010 Selected Topics in Russian and East European Literature (3) Interdisciplinary seminar on selected topic using comparative approach.
4101 Foreign Study (1-16) See page 162.
4202 Off-Campus Study (1-16) See page 161.
4103 Independent Study (1-16) See page 162.
4110-20-30 Studies in Major Russian Writers (3, 3, 3) Content varies. Pushkin, Lermontov, Gogol, Turgenev, Tolstoy, Chekhov and others. Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent. May be repeated for credit.
4250 Introduction to Descriptive Linguistics (3) (Same as German, French and Spanish 4250).
4260 Introduction to Historical and Comparative Linguistics (3) (Same as German, French and Spanish 4260).
4270 Introduction to Slavic Linguistics (3)
4310-20-30 Advanced Studies in Russian Language (3, 3, 3) Intended primarily for students majoring or minoring in Russian who are interested in language and linguistics. Includes problems in morphology and syntax, stylistics and translation techniques, and history of Russian language as well as other special problems for advanced student of Russian.
4410-20-30 Directed Readings in Russian (3, 3, 3) Intended primarily for students participating in program in Russian and East European Area Studies, course will involve individual study relating to student's major field. Prereq: 9 hrs of 3000 level courses in Russian (exclusive of 3010-20-30, 3210-20-30, or equivalent).

GENERAL COURSES
2640-50 Background and Main Currents of Russian Culture (4, 4) A broad interdisciplinary approach to the appreciation of the language, literature, art, music, history, geography, and social problems of Russia. No knowledge of Russian required. May not be taken for foreign language credit.
3210-20-21-30 Survey of Russian Literature in English Translation (3-4, 3-4, 3-4, 3-4) 3210—Russian realism; development of nineteenth-century novel; selections from works of Pushkin, Gogol, Lermontov, Leskov, Goncharov, Chernyshevsky, and others. 3220—Works of Leo Tolstoy. 3221—Works of F. M. Dostoevsky.
3230—Twentieth-century Russian literature; on eve of revolution and under Soviets.
3240 The Russian Drama in English Translation (3-4) Selections from works of Fonvizin, Gribedov, Pushkin, Gogol, Ostrovsky, Turgenev, Chekhov, and others.
3250 The Works of Ivan Turgenev and Anton Chekhov in English Translation (3-4)
3260 Russian Folklore in English Translation (3-4)
3270 Russian Philosophical and Theological Thought (4) A survey of the development of philosophical and theological thought in Russia from the Middle Ages to the Revolution. Special emphasis on the expression of this thought in Russian literature and literary criticism. No knowledge of Russian required. (Same as Philosophy 3270 and Religious Studies 3270.)

Greek
See Classics.

Greek And Roman Civilization
See Cultural Studies.

Hebrew
See Religious Studies.

History (462)
Professors: L. P. Graf (Head), Ph.D. Harvard; G. Brooker, Ph.D. Minnesota; E. V. Chmielowski, Ph.D. Harvard; H. S. Finn (Emeritus), Ph.D. Princeton; Y.-P. Hao, Ph.D. Harvard; A. G. Haas, Ph.D. Chicago; R. W. Haskins, Ph.D. California (Berkeley); J. W. Hoffmann (Emeritus), Ph.D. Chicago; M. M. Klein, Ph.D. Columbia; R. C. Marius, Ph.D. Yale; R. Stephens (Emeritus), Ph.D. Indiana.
Associate Professors: P. H. Bergeron, Ph.D. Vanderbilt; J. D. Bing, Ph.D. Indiana; J. C. Daniel, Ph.D. Maryland; R. E. Duncan, Ph.D. California (Berkeley); C. O. Jackson (Assistant Dean of the College of Liberal Arts), Ph.D. Emory; C. W. Johnson, Ph.D. Indiana; P. A. Marr, Ph.D. Harvard; M. J. McDonald, Ph.D. Pennsylvania; J. Muldowny, Ph.D. Yale; P. J. Pinckney, Ph.D. Vanderbilt; E. H. Trainor, Ph.D. Emory; W. B. Wheeler, Ph.D. Virginia.

* Distinugished Professor.
** On leave.

UNDERGRADUATE
Major: History 1510-20 (or honors equivalent) is prerequisite to a major which consists of 36 hours including 8 hours of History 2510-20 and 28 hours of upper-division courses chosen so that the student presents a minimum of 8 upper-division hours in two of three of the following groups: (a) European; (b) United States; (c) Other Areas; e.g. Latin American, Asian, etc. Students may use only two of the three History Colloquia (4010, General; 4011, European; 4012, American) toward the 36 hours of the major. (Honors Major) Consists of 45 hours: 36 hours of courses including group requirement in Major statement and History 4018-28-38, plus History 3018-28-38.
be in U.S. History.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

American Studies. See Cultural Studies.

Asian Studies. See Cultural Studies.

Latin American Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

UNDERGRADUATE

1510-20 Development of Western Civilization (4, 4)
1510—Ancient World to 1715. 1520—1715 to present.

1518-28 Honors: Development of Western Civilization (4, 4) Permission of department required.

1610-20 History of World Civilizations since 1450 (4, 4)
1610—Interaction of Western and Non-Western peoples since the fifteen century. 1610—ca. 1450-1600. 1620—1800-present.


2350 U.S. and World Crisis, 1899 to Present (4)
An introductory course in history of 20th Century American Foreign Relations. May not satisfy major or minor requirements.

2510-20 History of the United States (4, 4)
2510—Settled to 1852. 2520—1855 to 1965.

2518-28 Honors: History of the United States (4, 4) Consent of department required.

2950 Introduction to Afro-American History (3) A survey of Black experience in America. For elective credit, open to freshmen and sophomores only.

3018-28 Honors: Junior Seminar (3, 3)
3018—American. 3028—European. Required of students working for honors in history. Admission with permission of department.

3038 Honors: Philosophy and Method (3) Principles and techniques of research and study of critical and speculative philosophy of history. Required of students working for honors in history. Admission with permission of department.

3061-71 History of Western Religious Thought and Institutions (4, 4) (Same as Religious Studies 3061-71.)

3140-50-60 History of England (3, 3, 3) 3140—To 1603. 3150-60-70. 3420-60-70 to present. 3420-62 to present.

3311-21 History of Tennessee (3, 3) 3311-18th Century to Civil War Era. 3321-1865 to present.

3411-12-13 Renaissance and Reformaion (3, 3, 3) 3411—Renaissance. 3412—Reformation 1517-1550. 3413—Catholic Reformation and the Wars of Religion. (Same as Religious Studies 3411-12-13.)

3421-22-23 Early Modern Europe 1600-1815 (3, 3, 3)
3421—Seventeenth Century Europe. 3422—Ancient Regime. 3423—French Revolution and Napoleon.

3431-32-33 Nineteenth Century Europe (3, 3, 3)

3445-46 History of France (4, 4) 3445—France to 1789. 3456—France since 1789.

3450 European Diplomacy Prior to the First World War, 1871-1914 (3)
3470-80-90 History of Russia (3, 3, 3) 3470—To 1801. 3480—19th Century. 3490—20th Century.


3670 Popular Culture in the United States (4)
Examination of a wide range of fads, fashions, and amusements of American public from Colonial period to age of television. Not for graduate credit.

3680 Indian-White Relations in United States History (4)
White man's relationship with the Indian since Colonial times. Emphasis on dilemma of two cultures existing side by side; background and formulation of official Indian policy; undermining of policy by frontier circumstances; Indian wars and campaigns; and present-day relationships. Not for graduate credit.

3780-90 History of the Middle East (3, 3, 3) 3780—Rise and spread of Islamic Civilization to the 16th century. 3790—The Impact of the West on the Middle East from the 16th Century to the 18th Century. 3795 Contemporary Middle East (4) Background of current problems in the area, from World War I to present.

3810-20-30 History of East Asia (3, 3, 3) 3810—Traditional China and Japan, ancient to mid-nineteenth century. 3820—Modern China, Japan, and Korea, mid-nineteenth century to 1920s. 3830—Contemporary China, Japan, and Korea, 1920's to present.

3870-80-90 History of Latin America (3, 3, 3) 3870—Exploration, conquest, settlement, and colonial life to 1800. 3880—Major countries of South America, 1800-present. 3890—Mexico, Central America, and the Caribbean, 1800-present.


4000 Special Topics (3) Student-generated course offered at convenience of department upon student initiative. Scope of subject matter determined by students and instructor with approval of department. Elective credit only. Prerequisite determined by department.

4010-11-12 History Colloquium (3, 3, 3) 4010—General. 4011—European. 4012—American. Small group study of selected historical period or theme. Recommended for students who have previously taken appropriate lower-division historical sequence.

4015 Studies in History (3-4) Variable content course offering affordable opportunity to offer subject matter normally required in an existing course. May be repeated for credit.

4018-28-38 Honors: Senior Paper (0, 0, 0) Required of students working for honors in history. Admission with permission of department.

4019 Foreign Study (1-6) See page 162.

4019 Off-Campus Study (1-6) See page 161.

4013 Independent Study (1-6) See page 162.

4120-30 History of Colonialism and Imperialism (3, 3, 3) 4120—Background. Age of Discovery and Exploration to Nineteenth Century. 4130—Nineteenth Century to Present.

4250-60-70 European Intellectual and Cultural History (3, 3, 3) 4250—From Reformation to Scientific Revolution (1500-1700). 4260—From Enlightenment to Age of Realism (1700-1870). 4270—From Subjectivism to Relativism (1870-present).

4280 Women in European History (4) Comparative analysis of role and image of women in Medieval, Renaissance, and Victorian periods. Attention given to parallel changes in structure of family as well as relationship between Western culture and women's protest movements.

4290 Women in American History (4) Approaches of 4280 applied to American society.

4311-21 History of American Foreign Relations, I, II (4, 4) 4311—Revolutions to 1912. 4321—1912 to present.

4370 U.S. Military History, 1754 to the Present (4) Examination of national and broad strategic aims and means used to attain them. Fighting strategy, tactics, and weaponry involved in our wars, and relationship between American society and its armed forces.

4380 Civil-Military Relationships in the Modern Western World (3) Civil-Military affairs from about 1900 to 1960 in Western Europe, Russia, and America; emphasis on Western Europe e.g. Dreyfus Affair, Army in Nazi Germany, and Truman-MacArthur controversy.

4410-20-30 Europe Since 1914 (3, 3, 3) 4410—Prewar European Society and Politics to World Depression. 4420—World Depression to end of World War II. 4430—Postwar Europe, 1945-present.

4450-60 History of the Balkans (3, 3) 4450—Ottoman Empire to 1815. 4460—Balkans since 1815.

4470 Poland and Its Neighbors (3) A survey of Polish history from its beginnings to present with some emphasis on the Polish nation within context of modern international affairs.

4480 Russian Intellectual History (3)

4490 Soviet Foreign Policy (3)

4500 History of Medieval England (3)

4510-20 Tudor-Stuart England (3, 3) 4540—1485-1603. 4520—1600-1714.

4551 Great Britain from Burke to Bright (1780-1848) (3)

4570 Twentieth-Century Britain (3)

4580 Revolution and Reform: Ireland in the 19th and 20th Centuries (4)

4590 History of Canada, 1774-Present (3)

4610-20-30 The American Frontier and Western Movement I, II, III, (3, 3, 3) Settlement and development of the "West" throughout American history. 4610—From the Atlantic to the Mississippi. 4620—The Trans-Mississippi West.

4640-50-60 Social and Cultural History of the United States (3, 3, 3) 4640—Colonial Society and Early Nation to 1825. 4650—1825-ca. 1900. 4660—1900-present.
4101 Honors: Foreign Study (1-16) See page 162.
4102 Honors: Off-Campus Study (1-16) See page 161 and Director of Special Programs. Primarily for College Scholar students.
4103 Honors: Independent Study (1-16) See page 162 and director of Special Programs. Primarily for College Scholar students.
4118-28-38 Honors: Senior—Colloquium (2, 4, 2, 4, 2, 4) Small group studies of selected topics.
4998 Honors: College Scholars Studies (2-16) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated for a total of 16 credit hours.

Human Services (532)
Assistant Professor: R. F. Kronick (Director), Ph.D. Tennessee.
Instructors: J. E. Everett, M.S.W. Michigan; F. Spicuzza, M.S. Tennessee; N. Wright, M.S.W. Pittsburgh.
Major: 48-52 hours
Requirements: Human Services 2690, 3100, 3300, 4220, 4229, 4400.
In addition, four courses from the following alternative areas (one course from each of the four areas):

I. Culture and Personality
American Studies 3010; Anthropology 3410, 3930, 4740; Audiology & Speech Pathology 4650; Child Development 3210, 3220, 4810; Educational Psychology 4110, 4800; Psychology 3120, 3550, 3650, 4510; Sociology 3130, 4820.
II. Complex Organizations
Political Science 3565, 4665, 4666; Religious Studies/Sociology 4940; Sociology 4560, 4610, 4620.
III. Research and Statistics
Computer Science 3010; Psychology 3150; Sociology 4140, 4150, 4170, 4180.
IV. Community and Society
Economics 3220, 3410; Geography 3430; Human Services 3300; Political Science 3710, 3720, 3730, 4580, 4590; Public Health 3330; Religious Studies 3550, 3600, 3610; Rural Sociology 3420; Sociology 3130, 3300, 4320, 4330, 4350, 4540, 4550, 4830, 4930, 4950.
Total Hours Credit ................. 48-52

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major in the 1972-73 or earlier general catalog.

2690 Introduction to Human Services (4)
2700 Social Welfare as a Social Institution (4)
3100 Social Welfare as a Social Institution (4)
3200 Peoples and Problems of Appalachia (4)
3300 Human Needs and Services (4)
4000 Understanding of basic needs of people in urban-industrial society (e.g., income, housing, medical care) and societal developments.

5560 Anglo-Irish Relations (3)
5640 Topics in American Social and Cultural History (3)
5650 Topics in American Urban History (3)
5650 Topics in American Westward Movement (3)
5660 Topics in Negro History (3)
5670 Topics in American Colonial History (3)
5675 Topics in the Early National Period of American History (3)
5680 Topics in Nineteenth Century American History (3)
5690 Topics in Twentieth Century American History (3)
5710 History of Crusades (3)
5720 Topics in Medieval History (3)
5740 Topics in European Urban History (3)
5750 Topics in Ancient History (3)
5780 Topics in German National Socialism (3)
5810 Topics in Andean History (3)
5820 Topics in Mexican History (3)
5850 Topics in Chinese History (3)
5860 Topics in Japanese History (3)
5910-20 Topics in Southern History (3, 3)
6000 Doctoral Research and Dissertation
6210-20-30-40 Directed Readings (3, 3, 3, 3)
6300 Seminar in Special Studies (3)
6310 Seminar in Tennessee History (3)
6350 Seminar in American Diplomatic History (3)
6410-20 Seminar in Western Europe (3, 3)
6440 Seminar in French History (3)
6480 Seminar in Russian History (3)
6510 Seminar in English History (3)
6610 Seminar in American Colonial History (3)
6620 Seminar in Era of American Revolution (3)
6640 Seminar in Social and Cultural History of the United States (3)
6650 Seminar in American Westward Movement (3)
6710 Seminar in Medieval Institutions (3)
6740 Seminar in the Crusades (3)
6770 Seminar in Central European History (3)
6810 Seminar in Latin American History (3)
6910 Seminar in the Civil War Era (3)
6930 Seminar in Twentieth-Century America (3)
6940 Seminar in History of the South (3)
6960 Seminar in Negro History (3)

Honors Program (509)
Director: Dr. Harry Jacobson
Non-Departmental

The following courses are restricted to students who have been selected to participate. Invitation to participate in Honors 1118 is based on high school averages, test scores, and applications. Participation in Honors 1128 or 1138 and in the upperclass courses is based upon college averages and interviews.

1118-28-38 Honors: Freshman—Men and Ideas (2, 4, 2, 4, 2, 4) 1118—The Nature of Man; the individual and his philosophical and aesthetic development. 1128—Cosmos and Micro-cosmos, the study of man's physical environment. 1138—Human Organization; man in society.

1118-28-38 Honors: Sophomore—Special Problems Seminar (2, 4, 2, 4, 2, 4) 2118—The Humanities; 2128—The Natural Sciences; 2138—The Social Sciences. These seminars focus on selected problems in the respective disciplines. The specific topics will vary from year to year.

1118-28-38 Honors: Junior—Colloquium (2, 4, 2, 4, 2, 4) Small group studies of selected topics.
responses to those needs in the form of voluntary and governmental organizational and agency service.

4100 Deviant Behavior as a Product of Labeling (4) Course is designed to show human services worker the role he plays in maintaining the deviance or deviant role of clients he is serving. Settings considered will include crime, delinquency, health, and blindness.

4101 Foreign Study (1-18) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4220 Human Services Methodologies (4) Introduction to some specific helping techniques, essential to administration and delivery of human services.

4229 Special Topics in Human Services (4) Examination of specific issues, methods, values, and trends which have implications for helping practitioners, e.g. art therapy, behavior modification, counseling skills, self awareness training. Content varies, topic by decision by instructor; may be repeated up to 12 credit hours.

4400 Human Services Field Work (8) Practical field experiences in appropriately organized and directed human services settings. Designed to offer the student the opportunity to learn and develop specific helping skills and to become exposed and involved in the roles and functions of social services, to provide some direct services in a supervised learning situation. For majors only; must be repeated once. Satisfactory-Not Credit. Prereq: permission of instructor.

4900 Aspect of Urban Environment I (3) Interdisciplinary course in urban problems. Prereq: permission of one instructor. (Same as Architecture 4900, Political Science 4900, Real Estate 4900, Psychology 4900.)

Italian

See Romance Languages.

Latin

See Classics.

Latin American Studies

See Cultural Studies.

Mathematics (641)

Professors: L. K. Barrett (Head), Ph.D., Pennsylvania; G. E. Albert (Emeritus), Ph.D., Wisconsin; J. S. Bradley, Ph.D., Iowa; R. E. Cline, Ph.D., Purdue; D. J. Dessart, Ph.D., Maryland; E. D. Eaves (Emeritus), Ph.D., Texas; H. Franko, Ph.D., Virginia; D. J. Illinois; D. A. Gardiner, Ph.D., North Carolina State; D. B. Hinton, Ph.D., Tennessee.

A. S. Householder (Emeritus), Ph.D., Chicago; H. T. Mathews, Ph.D., Tulane; D. D. Miller, Ph.D., Michigan; R. J. Pfennings, Ph.D., Auburn; F. W. Stallman, Ph.D., Gießen (Germany).

Associate Professors: J. H. Carruth, Ph.D., Louisiana State; C. E. Clark, Ph.D., Pennsylvania State; R. D. Devan, Ph.D., Wisconsin; J. W. Heidel, Ph.D., Iowa; L. S. Huch, Ph.D., Florida State; A. G. Klassen, Ph.D., Nebraska; Y. Kuo, Ph.D., Cincinnati; R. M. McConnel, Ph.D., Duke; B. W. Margrue, Ph.D., Wisconsin; B. S. Rajput, Ph.D., Illinois; C. K. Reddy, Ph.D., Indian Institute of Technology; P. W. Scheaffer, Ph.D., Maryland; J. Smith, Ph.D., California (Berkeley); L. H. Turner, Ph.D., Purdue; W. R. Wade, Ph.D., California (Riverside); C. G. Wagner, Ph.D., Duke.

Assistant Professors: W. E. Heuer, Ph.D., SUNY at Binghamton; G. S. Jordan, Ph.D., Wisconsin; W. F. Keigher, Ph.D., Illinois; K. P. Kinna, Ph.D., Ohio State; J. E. Leech, Ph.D., California (Los Angeles); R. W. Leppert, Ph.D., Kentucky; R. Lowry, Ph.D., California Institute of Technology; D. R. Peterson, Ph.D., Michigan State; G. H. Ralston, Ph.D., Harvard; R. J. Rowlette, Ph.D., Virginia; S. M. Sarbin, Ph.D., Cornell; R. S. Sperry, Ph.D., Eldig, Technischen Hochschule; C. C. Travis, Ph.D., California (Davis).

Instructors: E. S. Carlson, M.A., Alabama; C. G. Doss, M.A., Tennessee.

*On leave
*Space Institute-Tallahassee.

UNDERGRADUATE

Placement Information for Freshman Courses: Students who need more than one year of mathematics should plan to take 1840-50-60 (or 1842-52-62 or 1848-58-68). The prerequisites for 1840 (and 1842) are two years of high school algebra, one year of geometry and one semester of trigonometry or equivalent. Students who present an ACT score below 20 in mathematics are urged to complete 1500 with a grade of C or better before taking 1840 (or 1842). Students who have not had high school trigonometry should take 0150 before (or concurrently with) 1840 (or 1842). Students who present an ACT score of at least 32 in mathematics and a high school average of at least 3.00 are eligible for the honors course 1848. Prospective mathematics majors who meet these requirements are particularly encouraged to enroll in 1848. (Exceptions to the eligibility criteria for 1848 are possible. Interested students should see the Department Head in Ayres Hall, Room 12.)

The prerequisites for 1540 are two years of high school algebra or one year of algebra and one year of geometry. Students who present an ACT score below 18 in Mathematics may take 1540 but are advised to take Algebra Refresher, Parts I and II, in the Workshops and Non-Credit Programs, (or equivalent elsewhere) and make at least B, or to make a passing grade in Algebra Refresher. Refresher, Parts I and II, in the Workshops and Non-Credit Programs (or equivalent elsewhere). Students who have taken 2 years of high school algebra and 1 year of high school geometry and who present an ACT score in Mathematics of at least 26 (or those who earned at least a grade of B in high school algebra and geometry, and present an ACT score in Mathematics of at least 24) are encouraged to omit 1540 and begin with 1550. Students who have a deficiency in algebra or geometry must remove the deficiency by taking the appropriate refresher course(s) in the Workshops and Non-Credit Programs, (or equivalent elsewhere).

A student may not receive credit for both 1540 and 1550. A maximum of sixteen hours credit may be obtained in mathematics from courses numbered below 2000.

Honors Courses: The current practice of the department is to offer honors versions of courses 1848-58-68 and 2840-50-60 in sequence, Fall-Winter-Spring, each year. In addition to these regularly offered honors courses, an honors version of any course in the department whose number has zero as the last digit may be offered in any quarter. In this case, the last digit will be changed to eight and the title will be preceded by the word "Honors," both in the Timetable and on the student's transcript. These honors courses may be offered upon the initiative of interested faculty for one or more courses from the calculus sequence 1840-50-60. If a satisfactory grade is made on the examination(s) credit will be awarded for the appropriate course(s).

Proficiency Examinations: Students who have taken calculus in high school are encouraged to inquire at the Mathematics office in Ayres 121 about the possibility of taking a proficiency examination for one or more courses from the calculus sequence 1840-50-60. If a satisfactory grade is made on the examination(s) credit will be awarded for the appropriate course(s).

Major: To major in mathematics, a student must complete the Basic Requirements and Advanced Requirements listed below:

1. Basic Requirements:
   a. 2840-50-60; or 2848-58-68; or 2540-50-60, 2610, and 2860.
   b. 3810, preferably taken during the sophomore year. Students who take 2848-58-68 may substitute any 3 or 4 hour mathematics course numbered 3050 or above for 3810.

2. Advanced Requirements:
   a. 21 additional hours in mathematics courses numbered 3050 or above, including a senior seminar (4910 or 4920) and at least two of the following sequences:

Note: The two sequences selected cannot contain the same course.

b. 9 additional hours in courses from the following list: Mathematics courses numbered 3050 or above; Computer Science 4010, 4020, 4410, 4420, 4430, 4510; Curriculum and Instruction 3751, 3752, 3753, 3752, 3752; Physics 3210, 3220, 3250, 4410, 4420, 4430, 4210, 4220, 4250; Statistics 3450.

Minor: Consists of 2840-50-60 (or 2848-58-68; or 2540-50-60, 2610 and 2860) and at least 12 hours in courses numbered 3050 or above.

Students enrolled in the College of Liberal Arts prior to Fall quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier erenal catalog.

Program Planning for Majors: Mathematics majors have considerable freedom in determining how they will meet the Advanced Requirements of the major. In order to offer some guidance in program planning, the Mathematics Department has designed several sample programs which majors may wish to follow. A brief description of these programs appears below; more detailed information about these sample programs which the department may design in the future is available in Ayres 121.
Completion of the courses suggested in any of the following programs will meet (and, in some cases exceed) the Advanced Requirements for a major in mathematics.

All students who intend to pursue graduate studies in the mathematical sciences are strongly urged to study French, German, or Russian for at least two years.

Program 1. This program is designed for students who have a general interest in mathematics and do not plan to become professional mathematicians. Supplemented by appropriate non-mathematical courses, such a program might be followed, for example, by pre-medical or pre-law students, or by those who plan to enter business after graduation. Suggested courses: Mathematics 3150, 3050-60, 3780-90, 3330, 4510-20, 4120, senior seminar, 6 hours of math electives.

Program 2. This program emphasizes pure mathematics and is designed to prepare students for graduate work in any of the mathematical sciences. Suggested courses: Mathematics 3150, 3920-30, 4510-20-30, 4150-60, senior seminar, 3 hours of math electives. The honors courses 4518-28-38 and 4158-68 are especially recommended. Since 4158-68 begins only in the fall quarter, students who wish to enroll in this sequence should take 4120 during their sophomore or junior years.

Program 3-A. This program emphasizes numerical mathematics, and is designed to prepare the student for employment in industry. Suggested courses: Mathematics 3150, 4220-30, 4610, 4060-70, 4250, Computer Science 4410, Mathematics 4990 or Computer Science 4330, senior seminar, 6 hours of math electives selected from 4540, 4550, 4560, 4620, 4840, 4710.

Program 3-B. This program emphasizes numerical mathematics and is designed to prepare the student for graduate work in numerical mathematics or computer science. Suggested courses: Mathematics 3150, 4220-30, 4610, 4060-70, 4150-20-30, 4250, Computer Science 4410, Mathematics 4990 or Computer Science 4330, senior seminar.

Program 4-A. This program emphasizes operations research, probability, and mathematical statistics, and is designed to prepare the student for employment in business or industry. Suggested courses: Mathematics 3150, 4540, 4060-70, 4650-60-70, 4750-60-70, Statistics 3450, Industrial Engineering 3510-20-30, senior seminar, 3 hours of math electives.

Program 4-B. This program emphasizes operations research, probability, and mathematical statistics, and is designed to prepare the student for graduate work in one or more of these areas. Suggested courses: Mathematics 3150, 4540, 4060-70, 4650-60-70, 4750-60-70, Industrial Engineering 3510-20-30, senior seminar.

0150 Trigonometry (0) Plane trigonometry with emphasis on the fundamental aspects and other analytic aspects used in calculus. For students who enter with deficiency in high school trigonometry. 3 hrs per week.

1020 Mathematics: A Philosophical Approach (4) Mathematics as a science, art and "language game"; nature of mathematical truth; strengths and limitations of axiomatic method; the infinite and the infinitesimal; mathematical creativity, ethical problems facing the mathematician scientist. 4 hrs per week.

1500 Precalculus Mathematics (4) Function concept and use of functional notation. Properties of functions and their graphs. Polynomial, exponential, logarithmic, and trigonometric functions. Prerequisite: 2 yrs of high school algebra; and equivalent of one-half yr of trigonometry or taking Mathematics 0150 concurrently.

1540 College Algebra I (4) Sets, real and complex number systems, exponentiation, and radical operations; fundamental algebraic operations, theory of equations, polynomial inequalities, relations, functions, and graphing; coordinate geometry; algebra or one year algebra and one year of geometry.

1550-60 Introductory Calculus-General Mathematics (4) Analytic geometry, limits, continuity, derivatives, conics, derivatives of algebraic functions, applications of derivatives, maxima and minima, related rates, antiderivatives, integration, applications of integration. Prerequisite: 1540 or equivalent. 1560-matrices, systems of linear equations and inequalities, trigonometric functions, applications, arithmetic and geometric series, simple and compound interests, annuities, exponential and logarithmic growth, applications. Prerequisite: 1550 or equivalent.

Note: Students with an adequate high school background in Algebra are advised to begin the 1540-60 sequence.

1630 Analytic Geometry (5) Straight line, plane curves, polar coordinates, parametric equations, line and plane in three dimensions; review of trigonometric functions. Prerequisites: Mathematics 3150, 2710-20-30 and cannot be taken for credit in addition to 1610-20. Prerequisite: two years of high school algebra and one semester of trigonometry or equivalent.

1840-50-60 Single Variable Calculus (4, 4, 4) Functions, graphs, slope of a curve, definition of a derivative, limits, derivatives of algebraic functions, implicit differentiation, chain rule, differentials, continuity, applications of derivatives, maxima and minima, indefinite integral, area, definition of definite integral, Fundamental Theorem of calculus, application of the definite integral, logarithmic, exponential, and trigonometric functions and their derivatives. Techniques of integration, plane analytic geometry, polar coordinates. Must be taken in sequence. Prerequisites: Two years of high school algebra, one year of geometry, and one semester of trigonometry or equivalent.

1842-52-62 Single Variable Calculus with Computer Support (5, 5, 5) Same coverage of calculus as 1840-50-60 supplemented with computer. Elementary FORTRAN is introduced and applied to problems from following areas: computer evaluation of functions; limit operation; application of limits to definition of derivative; approximation via differences; approximate solution of equations by bisection, secant methods and Newton's method; rectangular, trapezoidal, and Simpson's rules for numerical integration; Euler's method for initial value problems. Prerequisites: Two years high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1848-58-68 Honors: Single Variable Calculus (4, 4, 4) Honors course for students who have had trigonometry; approved based on placement test scores and high school record. Students receiving a grade below B in 1848 will complete the year's work in calculus by taking 1850-60. Special sections of 1858 will be made available for students who perform well in 1840. Must be taken in sequence.

1900 Selected Topics (4) Applications of definite integration, approximating functions; simultaneous linear equations; matrix inversion; elementary linear programming; infinite series; descriptive statistics and probability. Prerequisite: 1900 is especially recommended for Architecture majors. Prerequisite: 1810-20. If a student wishes to continue his study of calculus by taking 1900, he should consult the mathematics department.

2012 Basic Concepts of Elementary Mathematics (4) Sets, theory of arithmetic operations, elementary number theory, numerical notation, introduction to basic geometrical concepts, elementary analytic geometry. Applications. May not be taken for credit toward a major or minor in Mathematics.

2020 Great Ideas in Mathematics (4) Course for nonscience majors designed to expose the student to ideas which may have had a significant impact on the development of math. Emphasis on civilization in general. Selected topics may include: The Greeks and mathematics as logical reasoning; irrational numbers; Descartes and coordinate geometry; Newton and Leibniz and the mathematics of motion; Non-Euclidean Geometry; The infinite. Prerequisite: High school algebra and geometry and an interest in cultural mathematics.

2110-20-30 Structure of the Number System (3, 3, 3) 2110—Set theory, whole numbers, integers. 2120—Inverses, order properties, rational numbers. 2130—Elementary number theory, rational and irrational numbers. Euclidean geometry. Must be taken in sequence. Prerequisite: 1 yr high school algebra and at least sophomore standing in Elementary Education, College of Education, or consent of instructor.

2412-22 Finite Mathematics (4, 4, 4) Logics and sets, combinatorics and probability, vectors and matrices, elementary optimization and game theory, applications to simple problems in the behavioral and management sciences. Prerequisite: Two years of high school algebra or one year of algebra and one year geometry.

2512 Calculus Refresher (4) Functions, graphs, limits, derivatives; mean value theorem, maxima and minima; definite integrals and applications, the definite integral and applications, Fundamental Theorem of integral calculus. Derivatives and integrals of transcendental functions, methods of integration, parametric equations, vectors, differentiation of vectors, scalar and vector products, equations of lines and planes. Partial differentiation, directional derivatives, the chain rule, the total differential, maxima and minima, line integrals, exact differentials, applications with cylindrical and spherical coordinates, series, tests for convergence, power series, Taylor's series. Prerequisite: 1130 or 1560 or equivalent and permission of instructor.

2540-50-60 Calculus (4, 4, 4) Calculus sequence for students who have completed 1560 or students who have a significant introduction to calculus in high school. Definition of a derivative; derivatives of algebraic functions, the chain rule, differentials, continuity; applications of derivatives; Rolle's Theorem, the Mean Value Theorem, maxima and minima; definite integrals and applications, Fundamental Theorem of integral calculus. Derivatives and integrals of transcendental functions, methods of integration, parametric equations, vectors, differentiation of vectors, scalar and vector products, equations of lines and planes. Partial differentiation, directional derivatives, the chain rule, the total differential, maxima and minima, line integrals, exact differentials, applications with cylindrical and spherical coordinates, series, tests for convergence, power series, Taylor's series. Prerequisite: 1560 or at least one semester of high school calculus.

2610 Introduction to Differential Equations (2) Variables separable, homogeneous, exact, and linear first order equations, integrating factors. Second order linear equations with constant coefficients. Prerequisite: 1930.

2710-20-30 Calculus (5, 5, 5) For students who have had a separate course in analytic geometry. 2710—Functions, graphs, limits, derivatives of algebraic functions, applications, antiderivatives. 2720—Definite integral, integration techniques, applications, integral and transcendental functions, methods of integration, hyperbolic functions, vectors in 2-space, 2730—Elementary vectors in 3-space, applications, partial differentiation, multiple integrals, series. Must be taken in sequence. Prerequisite: 1930 or equivalent.

2840-50-60 Multivariable Calculus and Matrix Algebra (4, 4, 4) 2840-50—Differential equations, vectors and parametric equations, solid analytic geometry, dot and cross products, vectors, surfaces, cylindrical and spherical coordinates, series, convergence tests, power series.
series, Taylor series, indeterminate forms, absolute convergence of series, Power series. Math 350. Must be taken in sequence. 2860—Vectors, matrices, systems of equations, determinants, inverses of matrices, eigenvalues and eigenvectors. Prereq: 2850 or 2560 or permission of instructor.


Prerequisites. If specific courses are listed below as prerequisites, equivalent preparation satisfactory to the instructor will be an acceptable substitute. Graduate standing is prerequisite to enrollment in courses numbered above 6000. Undergraduates working towards a major in mathematics with a view to taking advanced work are strongly recommended to include 4510-20-30 and 4150-60-70 during the junior or senior year.

3000 Elementary Quantitative Methods (4) College level course designed to prepare students in social and life sciences for quantitative courses in the social sciences. Topics in algebra, statistics and probability will be covered. Course cannot be used to meet requirements for majors or minors in mathematics. Students enrolled for credit will be eligible for credit to students in College of Business Administration.

3040 The Ideas of Calculus (4) Study of basic ideas and theory behind differential and integral calculus developed by the Greeks. Although course of study does not involve the use of calculus. Emphasis on the historical framework in which calculus was discovered and its influence on subsequent philosophical and scientific thought. Prereq: One year of high school algebra. May not be taken for credit by students who has previously received credit for any college level calculus course.

3050 Elementary Probability and Statistical Analysis (3) Combinatorial problems; sample spaces, sets, and events; statistical independence; axiomatic probability theory; random variables and their distributions; random processes. Prereq: 1550-60 or equivalent.

3600 Elementary Statistical Analysis (3) Elementary probability distributions; sampling theory; confidence intervals and statistical tests of hypotheses; least squares and linear regression. Prereq: 3560 or permission of instructor.

3090 Polynomials and Rings (3) Elementary introduction to modern abstract algebra. Axiomatic approach is used to study divisibility and factorization in rings and of polynomials with coefficients from various fields. Prereq: 2860 or permission of instructor.

3100 Logic and Sets (3) Elements of mathematical logic; elementary algebra of sets. Primarily for students in the College of Education. Prereq: 1 year of college mathematics.

3110 Real Number System (3) Laws of arithmetic; rational and irrational numbers; fields. Primarily for students in the College of Education. Prereq: 1 year of college mathematics.

3150 Application of Digital computers in Engineering and Science (3) (Same as Computer Science 3150.)

3155 Introduction to Numerical Analysis (3) (Same as Computer Science 3155.)

3220 History of Mathematics (3) Survey of development of various branches of mathematics, from ancient to modern times. Prereq: Math 1860 or 2560 or equivalent.

3310 Advanced Euclidean Geometry (3) Triangles and circles, constructions, modern concepts. Prereq: 1 year of college mathematics.
5560-70-80 Theory of Matrices in Numerical Analysis (3, 3, 3)
5590 Theory of Rings (3)
5510-20-30 Mathematical Methods in Physics (3, 3, 3)
5640 Numerical Methods in Physics (3)
5650-60 Numerical Methods (3, 3)
5710-20-30 Tensor Analysis (3, 3, 3)
5750-60-70 Advanced Mathematical Statistics (3, 3, 3)
5810-20-30 Number Theory (3, 3, 3)
5910-20-30 Elementary Topology (3, 3, 3)
5940-50-60 Introduction to Algebraic Topology (3, 3, 3)
5990 Graduate Reading in Mathematics (1-3)
5991 Seminar Analysis (3)
5992 Seminar Topology (3)
5993 Seminar Algebra (3)
5994 Seminar Foundations (3)
5995 Seminar Applied Mathematics (3)
6000 Doctoral Research and Dissertation
6050-60-70 Metamathematics (3, 3, 3)
6210-20-30 Linear Analysis (3, 3, 3)
6250 Length, Area, and Measure (3)
6260 Laplace and Fourier Transforms (3)
6270 Divergent Series (3)
6450-60-70 Partial Differential Equations (3, 3, 3)
6510-20-30 Modern Algebra (3, 3, 3)
6540-50-60 Theory of Semigroups (3, 3, 3)
6570-80 Theory of Groups (3, 3)
6590 Group Representations (3)
6610-20-30 Advanced Ordinary Differential Equations (3, 3, 3)
6750-60-70 Probability Theory (3, 3, 3)
6810-20-30 Topological Algebra (3, 3, 3)
6910-20-30 Modern Topology (3, 3, 3)
6991 Seminar Analysis (3)
6992 Seminar Topology (3)
6993 Seminar Algebra (3)
6994 Seminar Foundations (3)
6995 Seminar Applied Mathematics (3)

Medieval Studies
See Cultural Studies.

Microbiology (169)

Professors:

Associate Professors:
T. C. Montie; Ph.D. Maryland; W. S. Riggsby, Ph.D. Yale.

Assistant Professors:
J. M. Becker, Ph.D. Cincinnati; R. V. Miller, Ph.D. Illinois.

UNDERGRADUATE

Major

1. Minor: 1450-20-30 Introduction to Partial Differential Equations (3, 3, 3)
2. Courses in the major:
   - Biotechnology 2100 (General Genetics) 4
   - Biotechnology 2120 (Cell Biology) 4
   - Microbiology 3000 (Introduction to Microbiology) 4
   - Microbiology 3009 (Introduction to Microbiology Lab) 2
   - Microbiology 4111 (Pathogenesis of Bacteria) 3

Seventeen (17) hours from the following list of upper division courses in Microbiology as follows: 3 hours from Group A, 3 hours from Group B; 4 hours from Group C, and 7 hours from any courses in Groups A, B, C, or D.

Group A:
- Microbiology 3061 (Pathogenic Microbiology) 3 hrs
- Microbiology 3071 (Immunology) 3 hrs

Group B:
- Microbiology 4521 (Virology) 3 hrs
- Microbiology 4811 (Genetics of Bacteria and Viruses) 3 hrs

Group C:
- Microbiology 3069 (Pathogenic Lab) 2 hrs
- Microbiology 3079 (Immunology Lab) 2 hrs
- Microbiology 4112 (Bacterial Physiology Lab) 2 hrs
- Microbiology 4529 (Virology Lab) 2 hrs

Group D:
- Microbiology 3810 (Food Microbiology) 4 hrs
- Microbiology 3820 (Yeasts and Molds) 3 hrs
- Microbiology 4210 or 4220 or 4230 (Special Problems in Microbiology) 3 hrs

Microbiology 4130 (Taxonomy of Bacteria) 3 hrs

Any courses from Group D plus additional courses from groups A, B, or C

Any 5 hours of courses listed in Natural Sciences and Mathematics in the College of Liberal Arts or the College of Agriculture.

Total Hours Required: 54

2010 Microbiology (4) Fundamental concepts and applications of microbiology with laboratory demonstration. Course meets needs of programs that require only a single course in Microbiology. Not open to students who have taken other Microbiology courses.

2110 Microbiology for Student Nurses (4) Introductory course offered only to student nurses in diploma program of hospitals affiliated with The University of Tennessee. Microbiological principles as they apply to nursing care of the patient, epidemology of infection, and principles of immunity and allergy. 3 hrs and 1 lab.

2610 General Microbiology (5) Introductory course designed for students in School of Nursing and pre-veterinary medicine. Survey of general properties of bacteria, viruses, and fungi including study of pathogenesis, immunity and applied bacteriology. Laboratory exercises designed to parallel lecture course. 3 hrs. and 2 labs.

3000 Introduction to Microbiology (3) Eucaryotic and procaryotic protists, viruses, microbial growth, bacterial structure, bacterial and viral genetics, pathogenesis, immunity and applied microbiology. Prereq: Chemistry 1110-20-30, Biology 2120. Prereq or coreq: Biology 2110.

3009 Introductory Microbiology Laboratory (2) Laboratory exercises designed to accompany 3000.

3061 Pathogenic Microbiology (3) Disease producing microorganisms including bacteria, rickettsias, chlamydias, and fungi. Prereq: 3000 and 3009.

3065 Pathogenic Microbiology Laboratory (2)
Techniques for isolation, cultivation, and identification of pathogenic microorganisms. Prereq. or coreq: 3061.
3071 Immunology (3) Basic principles and mechanisms involved in resistance to infectious diseases; allergy and anaphylaxis. Must be taken concurrently with 3079 by Microbiology majors. Open to graduate students in other biological sciences without prerequisite. Prereq: 3000 and 3009 or permission of instructor.
3079 Immunology Laboratory (2) Laboratory procedures involving several species of animals, and techniques used in immunology research. Prereq: or coreq: 3071.
3088 Serological Methods (3) Practical procedures in serology and clinical immunology. Prereq: or Coreq: 3071.
3810 Food Bacteriology (4) Standard methods for examination, cultivation, and identification of bacteria associated with food fermentations and food spoilage. Prereq: 2010 and Chemistry 2230 or 3211. 2 hrs and 2 labs.
3820 Yeasts and Molds (4) Morphology, taxonomy, and physiology of yeasts, actinomycetes, and fungi of industrial importance. Prereq: 2010 and Chemistry 2230 or 3211, or permission of instructor. 2 hrs and 2 labs.
4010 Biology of Soil Microorganisms (4) Same as Agronomy 4010.
4101 Foreign Study (1-16) See page 162. No more than 3 hours may be applied toward a major or minor in Microbiology. May be repeated to a total of 16 hours.
4102 Off-Campus Study (1-16) See page 161. No more than 3 hours may be applied toward a major or minor in Microbiology. May be repeated to a total of 16 hours.
4103 Independent Study (1-16) See page 162. No more than 3 hours may be applied toward a major or minor in Microbiology. May be repeated to a total of 16 hours.
4111 Physiology of Bacteria (3) Cell chemistry and structure; growth, nutrition, and metabolism of microorganisms. Prereq: 3000, 3009, and 12 hrs of organic chemistry.
4112 Bacterial Physiology Laboratory (2) Prereq. or coreq: 4111.
4130 Taxonomy of Bacteria (3) Bacterial classification. Prereq: 3000 and 3008. 3 hrs.
4200 Special Problems in Microbiology (2-6) Individual study. Involvement in the longitudinal program of a faculty member, independent study projects. Project is undertaken under direction of faculty member and with approval of departmental committee. More than 3 credit hours in this sequence may be used towards a major in Microbiology.
4444 Seminar in Microbiology (1) May not be applied towards a major in Microbiology. Prereq: senior standing, permission of instructor. Satisfactory/No Credit.
4521 Virology (3) Spectrum of bacterial, animal and plant viruses is presented with special emphasis on a comparison of infectious cycles and molecular concepts of replication. Prereq: 3000 and 3009 and Biochemistry 4110-20 or permission of instructor.
4529 Virology Laboratory (2) Laboratory procedures for identification, handling and culturing of both animal and bacterial viruses. Methodology for conduct of molecular studies of virus replication is presented. Prereq. or coreq: 4521.
4819 Bacterial and Viral Genetics Laboratory (2) Laboratory exercises designed to accompany 4811. Coreq: 4811, or prereq: General Genetics.
4820 Medical Mycology (2) Disease causing fungi; cytology; physiology, pathogenesis and immunity; emphasis on methodology of isolation and identification. Prereq: 3000, 3009, and 3820 or permission of instructor.
4829 Medical Mycology Laboratory (2) Prereq. or Coreq: 4820.

GRADUATE
5000 Thesis
5130 Topics in Taxonomy (3)
5310-20-30 Selected Topics in Microbiological Research (3, 3, 3)
5360 Topics in Immunology and Immunochemistry (4)
5400 Seminar in Microbial Physiology (1)
5410 Seminar in Immunology (1)
5510-20-30 Research Problems (3, 3, 3)
5630 Microbial Metabolism (3)
5720 Microbial Physiology (3)
5730 Pathogenesis of Infectious Disease (3)
5750 The Oncogenic Viruses (3)
5760 The Bacterial Viruses (3)
5830 Seminar in Microbial Pathogenesis (1)
5850 Seminar in History of Microbiology (1)
5910-20-30 General Seminar (1, 1, 1)
5940 Seminar in Microbial Genetics (1)
5970 Seminar in Virology (1)
6000 Doctoral Research and Dissertation
6410 Concepts of Immunity (3)
6720 Advanced Topics in Microbial Physiology (3)
6730 Advanced Topics in Microbial Pathogenesis (3)
6740 Advances in Virology (3)
6760 Advanced Topics in Microbial Genetics (3)
6810-20-30 Problem Seminar (1, 1, 1)

Medical Technology (669)

Courses listed below are open only to qualified graduate students who have completed the first three years of the Science-Medical Technology Curriculum, described on page 156, and who have been approved by the Pre-Medical Advisory Committee.

4011-12 Microbiology (6, 6) Laboratory work in bacteriology, mycology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminth parasites of man.

4021-22 Clinical Chemistry (6, 6) Clinical aspects of biochemicals, including overview of principles and instrumentation with emphasis on practical laboratory applications of analytical procedures, specimen collection and handling. Significance of results, and quality assurance. Includes blood gas analysis, sero-diagnostic and immuno-diagnostic procedures (including radiunoassay), and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest utilizing both automated and manual techniques.

4031-32 Hematology and Clinical Microscopy (6, 6) Principles, theories, techniques, and instrumentation related to the qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative chemical analysis of urine and renal function studies. Emphasis is placed on microscopic identification of cells and the significance and correlation of laboratory data.

4041-42 Immunohematology (4, 4) Theory and practice in blood bank operation. Erythrocyte antigens and their normal and abnormal immunology. Standard technical practices used in evaluating blood typing, cross-matching and antibody detection techniques, preparation of cell and fluid components for transfusion. Safety control methods standard to an efficient blood bank are important part of course material.

4050 Nuclear Medicine (2) Physical characteristics, chemistry, and use of short half-life radioactive materials. Emphasis placed on in vitro and in vivo diagnostic medical uses and/or radiation safety.

4080 Histology (1) Overview of techniques of preparation of tissue for histologic and electron microscopic examination and role of histopathology in clinical diagnosis.

4071 Orientation and Basic Techniques (1) Designed to facilitate transfer of students from campus to hospital community and clinical laboratory. Introduction to medical terminology, ethics, and health team concept. Orientation to basic techniques of methods of study include procedures for collection and handling of specimens, principles of operation of major laboratory instruments, review of laboratory techniques and the introduction of quality control procedures. Portions of course extended over entire clinical year.

4072 Principles of Supervision and Education in Medical Technology (2) Consists of seminars in basic principles of management, supervision, and education theories and methods. There will be comprehensive examination covering the entire course.

Music (698)


Associate Professors: W. Bombeille, M.M. Tulia; M. F. Johnson, B. of Mus. Oberlin Conservatory; M. M. Northwestern; L. W. Michalopolous, M.A. Columbia; D. M. Paderson, Ph.D. Iowa; W. P. Scarlett, M.M. Northwestern; S. E. Young, Ph.D. North Carolina.


*On leave.

The Department of Music offers curricula leading to the Bachelor of Music degree which is designed to prepare students for graduate study and for professional positions, and the Bachelor of Arts degree with a major and minor in Music, designed for those students whose interests are strong but essentially
non-professional. Information regarding requirements for the B.M. degree may be found on page 158. Information regarding requirements for the majors and minors under the revised B.A. curriculum may be obtained in the departmental office.

**Major:**

(a) *Concentration in Applied Music* - consists of Music 2000, 2111-21-31, 2113-23-33, 2310-20-30-40, 27 hours in Applied Music at the 2000-3000-4000 level (9 hours each), and Junior and Senior recitals. Prerequisites are Music 1111-21-31, 1113-23-33, and 3 quarters of study in Applied Music at the 1000-level.

(b) *Concentration in Music History and Literature* - consists of Music 2111-21-31, 2113-23-33, 2310-20-30-40, and 27 upper division hours in Music History and Literature. Prerequisites are Music 1111-21-31, 1113-23-33, and 1340.

**Minor:**

(a) *Concentration in Applied Music* - consists of Music 2000, 2111-21-31, 2310-20-30-40 and 18 hours in Applied Music at the 2000-3000-4000 levels (6 hours each). Prerequisites are the same as those for the major.

(b) *Concentration in Music History and Literature* - consists of Music 2111-21-31, 2310-20-30-40 and 18 upper division hours in Music History and Literature. Prerequisites are the same as those for the major.

Students enrolled in the College of Liberal Arts prior to Fall Quarter 1972 who are under the previous B.A. curricula will find requirements for a major and minor in the 1972-73 or earlier general catalog.

The Bachelor of Science in Music Education, designed for preparation for institutional teaching, is administered by the Department of Music Education. See page 86 for requirements.

**UNDERGRADUATE General**

1000 Fundamentals of Music Theory (2) Theory and practice of basic elements of music. 3 hrs.

1010-20-30-40-50-60 Class Piano (1, 1, 1, 1, 1, 1) For music and music education majors only. Must be taken in sequence. Course may be waived by successful completion of Piano Competency Examination. Waived courses must be substituted with an equivalent number of quarters of study in Music 1580 or above.

1015 Class Voice (1) For music and music education majors only. May be repeated for credit.

2000 Solo Class (9)

2055-85-75 Diction for Singers (2, 2, 2) Sounds by phonetic symbols. Opera and art songs used for examples. Performance practice.

3000 Junior Recital (0)

3010-20-30 Elementary and Intermediate Piano Literature (1, 1) Piano music from elementary grades through Intermediate. Prereq: permission of instructor.

3011-21-31 Organ Literature (1, 1, 1) Organ music from preclassical period to present. Prereq: permission of instructor.

3012-22-32 Song Literature (2, 2, 2) Study of literature from 1750 to present with emphasis on performance practices. 3012-Classical and Romantic German Art Song; 3022-French and Russian Songs; 3032-Late German and contemporary songs. Prereq: 2075 and permission of instructor.

3014-24 Woodwind Literature (2, 2) Prereq: permission of instructor.

3015 Percussion Literature (1) Prereq: permission of instructor.

3040-50-60 Advanced Piano Literature (2, 2, 2) Piano music from preclassical period to present. Prereq: permission of instructor.

3041 Keyboard Harmony (2) Melody harmonization, figured bass revision and improvisation. Prereq: 1131-1133, and keyboard proficiency at the 2000 level.

3051 Organ Improvisation (2) Prereq: 3041 and organ proficiency at the 2000 level.

3054-54 Brass Literature (2, 2) Prereq: permission of instructor.

3081 Church Service Playing (2) Accompanying on the organ, conducting from the organ, general church service playing. Prereq: permission of instructor.

3199 Electronic Music Techniques (3) Introduction to taped and electronic music—historical background, theoretical concepts, tape and synthesizer usage. Prereq: permission of instructor.

3597-5997-5997 Composition with Electronic Media (1, 1, 1, 1, 1) May be repeated for credit. Prereq: 3199 and permission of instructor.

4000 Senior Recital (0)

4001 Organ Design (3) Historical, tonal and mechanical principles of organ design.

4010-20-30 Piano Techniques (1, 1, 1) Problems of piano playing; development of piano technique; style and interpretation; program building. Prereq: permission of instructor.

4011-21-31 Organ Techniques (1, 1, 1) Problems of organ playing; development of technique; problems in style, interpretation and registration; program building. Prereq: permission of instructor.

4012-22-32 Principles of Vocal Pedagogy (1, 1, 1) Examination and evaluation of concepts and approaches to teaching singing (past and present) and related teaching materials. Collateral laboratory experiences accompany the study. Prereq: permission of instructor.

4050 Advanced Instrumental Conducting (3) Development of knowledge and skills in instrumental conducting. Study of various periods and composers and relationship of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Ed 4430 or equivalent.

4060 Choral Conducting (3) Development of knowledge and skills in choral conducting; study of various periods and composers and relationship of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Ed 4420 or equivalent.

4070-80-90 Opera Production (1, 1, 1) Problems of lyric stage; casting, program selection, production procedures, opera roles. Emphasis on acting techniques and student participation in practical direction of opera and other works for lyric stage.

4074-84 Church Music Seminar (3, 3) History and philosophy of church music; Iuriges and liturgical music; church music administration. Prereq: permission of instructor.

**MUSIC THEORY AND COMPOSITION**

1110-20-30 Composition I (2, 2, 2) Melodic invention in simple form. Should be taken concurrently with 1111-21-31. Must be taken in sequence. Prereq: permission of instructor.

1111-21-31 Harmony I (3, 3, 3) Study of harmonic materials of music from 1700-1880. Exercises in writing and analysis. Must be taken in sequence. Prereq: 1000 or knowledge of fundamentals of music.

1112-33-33 Sight Singing and Ear Training (1, 1, 1) Should be taken concurrently with 1111-21-31. Must be taken in sequence. 2 hrs per week. Prereq: 1000 or knowledge of fundamentals of music.

2111-21-31 Harmony II (3, 3, 3) Materials of music 1880 to present. Exercises in writing and analysis. Must be taken in sequence. Prereq: 1111 or equivalent.

2113-23-33 Advanced Ear Training (1, 1, 1) Should be taken concurrently with 2111-21-31. Must be taken in sequence. 2 hrs per week. Prereq: 1133.

3111-21-31 Tonal Counterpoint (3, 3) Contra-puntal techniques of eighteenth century, with emphasis on works of J. S. Bach. Must be taken in sequence. Prereq: 2131.

3112 Instrumentation (3) Basic techniques in scoring for voices; brass, woodwind, and string choirs; and percussion. Prereq: 2131.

3113 Analysis I (3) Study and practice in analysis of structure and function of small structural units to large compound forms. Emphasis on macro-analytic techniques. Prereq: 2131 or equivalent.

3114-24 Choral Arranging (3) Analysis of scores and writing of arrangements for choruses. 3114-mixed male and female chorus. Prereq: 3112 or permission of instructor.

3122 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 3112 or permission of instructor.

3123 Analysis II (3) Continuation of Analysis I with emphasis on micro and linear analytic techniques. Prereq: 3113.

4100 Independent Study in Music Theory (1-3) May be repeated for credit. Prereq: permission of department head.

4101 Foreign Study (1-16) See page 162.

4111-21-31-41 Analysis of Music Literature (3, 3, 3, 3) Detailed examination of musical compositions by historical period with emphasis on harmony, thematic material, form and structure. Traditional and contemporary analytical techniques. 4111—1600-1750. 4121—1750-1825. 4131—1825-1900. 4141—1900 to present. Prereq: 3123.

4112 Twentieth-Century Compositional Techniques (3) Styles and compositional devices from Debussy to present. Analysis of scores; idiomatic writing. Prereq: 2131 or equivalent.

4113 Pedagogy of Music Theory (3) Techniques, methods, and materials involved in college-level theory programs. Prereq: permission of instructor.

4114 Stage Band Arranging (3) Analysis of scores and scoring for the stage band. Prereq: 3112 and permission of instructor.

4115 Variation (3) Study and application of variation procedures. Prereq: 3123 or equivalent.

4116 Set Structure in Musical Composition (3) Theory of sets and its application to analysis of music. Prereq: permission of instructor.

4124 Band Arranging (3) Study and application of techniques employed in scoring for the marching and concert bands. Prereq: 3112 or equivalent.

4134 Band Transcription (3) Technique and application of transcribing keyboard and orchestra music for concert band; editing and rescoring. Prereq: 3112 or equivalent.

**MUSIC HISTORY AND LITERATURE**

1210-20 Orientation in Music—Appreciation (4, 4)

1210—Study of styles, history, techniques, and aesthetic principles of music; 4th Century into 20th Century. 220—In-depth study of music literature and representative composers' styles; 16th Century into 20th Century. Prereq: 1210 to 1220.
1340 Introduction to Music Literature (3)
Acquaintance with basic terms of music and accepted masterworks through chronological approach. For music majors and minors only.
2310-20-30-40 History of Music (3, 3, 3, 3) 2310—1800, 2320—1800-1800, 2330—1800-1900, 2340—1900 to present. Requires musical background. Must be taken in sequence. Prereq: permission of instructor.
3230 The Concerto (3) Survey of literature from seventeenth century to present.
3240-50 The Symphony (3, 3) Survey of symphonic literature from Mannheim School to present.
3260-70 Chamber Music (3, 3) Survey of chamber music from 1750 to present.
3271-81 History of Opera (3, 3) Dramatic, vocal and orchestral elements in operas of Italian, French, and German schools. 3271—1800-1800, 3281—1800 to present.
3340 Oratoria (3) Choral works other than those appropriate for use in church.
3350 Introduction to Afro-American Music (4)
History of African music, blues, gospel, music and jazz with emphasis on Black artists and their contributions.
4200 Independent Study in Music History and Literature (1-3) May be repeated for credit. Prereq: permission of department head.
4210-20 Nineteenth-Century Music (3, 3) Music from 1810 to 1914. 4210—musical trends from Beethoven through Wagner; 4220—musical nationalism and post-Romantic instrumental and vocal styles.
4230-40 Contemporary European Music (3—3)
4230—music from 1890 to World War II. Debussy, Stravinsky, Schoenberg, Hindemith, Bartok, and others. 4240—serial music, post-World War II music (Berio, Boulez, Stockhausen and others).
4241-51 American Music (3, 3) 4241—From Colonial times through the music of Ives; 4251—from 1930 to present (Copland to Cage). Prereq: 1310-20-30 or equivalent.
4260 Introduction to Ethnomusicology (3)
Basic attitudes and techniques of ethnomusicology. Survey of music cultures of the Pacific, Near East, Asia and Africa. Prereq: 1310-20-30 or equivalent.
4270 Evolution of Jazz (3) Study of origin, development and styles of jazz music and its exponents. Prereq: 1310-20-30 or equivalent.
4290 Gregorian Chant (3) Chants of Latin rite. Masses and Offices examined as functional music as well as by type.
4310 History of Art Song (3) Survey of art song from Fifteenth Century to 1930.
4315 Wind Chamber Music (3) Study of wind chamber music from 18th through 20th Century. Emphasis placed on style interpretation, rehearsal techniques, programming and musical significance, both historical and theoretical.
4340-50 Works of Bach (3, 3) Detailed examination of sonatas, chamber, keyboard, and orchestral works; cantatas, motets, Passions and oratorios. 4340—instrumental works; 4350—vocal works.

APPLIED MUSIC
Applied study is classified as Principal or Secondary.
Students studying their principal (major) instrument register for credit appropriate to their program, 2-4 credit hours; students studying a secondary instrument register for 1 hour credit. Study at the principal level receives one hour of private instruction per week or a one-hour class lesson plus a half-hour private lesson. Determination of the mode of instruction rests with the Department. Study at the secondary level receives one-half hour private instruction per week or its equivalent in class instruction. Applied music courses do not permit non-credit registration nor may students elect non-conventional grading.

Non-music students will be accepted at the secondary level if they meet audition requirements established by area faculty (piano, voice, violin, etc.) and instruction time is available.

Undergraduate students seeking entrance to applied music courses must be concurrently registered for no less than nine credit hours in academic courses. Graduate students must be concurrently registered for no less than six credit hours in academic courses. Exceptions to these requirements may be made with the approval of the Department Head if applied music registration is necessary to completion of degree requirements.

Advancement in applied music is measured by proficiency (Jury) examination. Students who do not meet proficiency requirements at any level may be required additional study at that level. Course level and credit hours will be determined by the applied faculty.

All students studying applied music at the principal level are required to register for Music 2000 Solo Class. The requirements for this course are to attend scheduled concerts, recitals, master, repertoire, and solo classes and to perform at least once each quarter as partial fulfillment of applied music credit requirements.

Applied Music Fees: $20 per quarter for half-hour lesson (1 credit hour) $40 per quarter for hour lesson (2-4 credit hours)

Applied Music fees are not refundable after lessons have been scheduled.

1500-2500-3500-4500-5500 Flute (1-4) May be repeated for credit.
1505-2505-3505-4505-5505 Oboe (1-4) May be repeated for credit.
1510-2510-3510-4510-5510 Bassoon (1-4) May be repeated for credit.
1515-2515-3515-4515-5515 Clarinet (1-4) May be repeated for credit.
1520-2520-3520-4520-5520 Saxophone (1-4) May be repeated for credit.
1525-2525-3525-4525-5525 Horn (1-4) May be repeated for credit.
1530-2530-3530-4530-5530 Trumpet (1-4) May be repeated for credit.
1535-2535-3535-4535-5535 Trombone (1-4) May be repeated for credit.
1540-2540-3540-4540-5540 Baritone (1-4) May be repeated for credit.
1545-2545-3545-4545-5545 Tuba (1-4) May be repeated for credit.
1550-2550-3550-4550-5550 Percussion (1-4) May be repeated for credit.
1555-2555-3555-4555-5555 Voice (1-4) May be repeated for credit.
1580-2580-3580-4580-5580 Violin (1-4) May be repeated for credit.
1585-2585-3585-4585-5585 Viola (1-4) May be repeated for credit.
1570-2570-3570-4570-5570 Cello (1-4) May be repeated for credit.
1575-2575-3575-4575-5575 String Bass (1-4) May be repeated for credit.
1580-2580-3580-4580-5580 Piano (1-4) May be repeated for credit.
1585-2585-3585-4585-5585 Harpsichord (1-4) May be repeated for credit.
1590-2590-3590-4590-5590 Organ (1-4) May be repeated for credit.
1595-2595-3595-4595-5595 Guitar (1-4) May be repeated for credit.
2599-3599-4599-5599 Composition (2, 3, 3) May be repeated for credit. Prereq: permission of instructor.

ENSEMBLES
All students studying applied music are required to perform in a major music organization each quarter. String, woodwind, brass, and percussion students must be enrolled in an instrumental organization; voice students in a choral organization, opera workshop, or opera theatre.

A student's preference for musical organization will be honored whenever possible, but factors considered in making the assignment will include playing ability, specific needs of various organizations, and previous performance experience at the University.

3600-5600 Small Ensemble (1, 1) May be repeated for credit.
3602-5602 Brass Choir (1, 1) May be repeated for credit.
3604-5604 Jazz Ensemble (1, 1) May be repeated for credit.
3606-5606 Trombone Choir (1, 1) May be repeated for credit.
3607-5607 Tuba Ensemble (1, 1) May be repeated for credit.
3610-5610 Percussion Ensemble (1, 1) May be repeated for credit.
3612-5612 Baroque Ensemble (1, 1) May be repeated for credit.
3620-5620 U. T. Singers (1, 1) May be repeated for credit.
3630-5630 Chamber Singers (1, 1) May be repeated for credit.
3632-5632 Collegium (1, 1) May be repeated for credit.
3634-5634 Saxophone Choir (1, 1) May be repeated for credit.
3640-5640 Opera Theatre (1, 1) May be repeated for credit.
3642-5642 Opera Workshop (1, 1) May be repeated for credit.
3650-5650 Concert Band (1, 1) May be repeated for credit.
3652-5652 Campus Band (1, 1) May be repeated for credit.
3654-5654 Varsity Band (1, 1) May be repeated for credit.
Organizational Psychology Programs

See Graduate School.

Philosophy (745)

Professors:
J. W. Davis (Head), Ph.D. Emory; R. B. Edwards, Ph.D. Emory; R. D. Herrmann, Ph.D. Mainz (Germany); M. H. Moore (Emeritus), Ph.D., Chicago; D. Van de Vate, Ph.D. Yale.

Associate Professors:
R. E. Aquila, Ph.D. Northwestern; L. B. Cebik, Ph.D. Nebraska; B. K. Dumas, Ph.D. Arkansas.

Assistant Professors:

Instructor:
M. L. Osborne, M.A. Bryn Mawr.

Philosophy seeks to understand man, his world, their relations. It involves (1) use of logical and scientific methods, (2) appreciation of all values, (3) history of ideas, (4) philosophical systems.

Philosophy is an appropriate major for students wishing a broad education, and those preparing for careers as writers (whether journalistic or literary), lawyers, ministers, teachers, in various types of political and government service, and in non-technical positions in business and industry.

A major in philosophy implies a balanced program in the humanities, natural and social sciences. Graduates students should read French or German, preferably both; other ancient or modern languages are useful and for some advanced work necessary.

UNDERGRADUATE

Major: 36 hours in courses numbered 2000 and above. Majors should discuss their program with a member of the philosophy faculty.

Minor: 24 hours in courses numbered 2000 and above. It is suggested that minors discuss their programs with a member of the philosophy faculty.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

American Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

1510-20 Elementary Logic (4, 4) 2510—Traditional or modern deductive logic, informal fallacies, uses of language, definitions. (3810 is recommended as introductory for students with mathematical aptitude.) 2520—Inductive reasoning, elements of scientific method and statistical inference.

3111 History of Ancient Philosophy (4) Pre-Socratic through Aristotle.

3121 History of Hellenistic, Roman, and Medieval Philosophy (4).

3131 History of Seventeenth and Eighteenth Century Philosophy (4).

3141 History of Nineteenth and Early Twentieth Century Philosophy (4).

3270 Russian Philosophical and Theological Thought (4) (Same as Russian 3270 and Religious Studies 3270.)

3311-12 American Philosophy (4, 4) 3311—Colonial to late nineteenth century; 3312—Late nineteenth century to present.

3315 American Ideals (4) Ideological variants in American scene.

3320 Philosophy of Law (4) Nature, sources, function of law.

3330 Philosophy of History (4) Speculative and critical aspects of philosophy of history.

3410 Philosophical Ideas in Literature (4) Philosophical assumptions and implications in major literary works.

3420 Philosophy of Literature (4) Study of the nature, functions, value and epistemic principles of literary arts.

3440 Social Ethics (4) Ethical theory as related to politics, economics, education, law, religion and the family.

3510 Existentialism (4)

3550 Marxism as Philosophy (4)

3611 Religious and Philosophical Issues in Medical Ethics (4) (Same as Religious Studies 3611.)

3630 World Religions (4) (Same as Religious Studies 3630.)

3650 Philosophy and Religion in India (4) (Same as Religious Studies 3650.)

3660 Buddhist Philosophy and Religion (4) (Same as Religious Studies 3660.)

3670 Religion and Philosophy in China and Japan (4) (Same as Religious Studies 3670.)

3690 Philosophy of Religion (4) Analysis of basic issues of religion. (Same as Religious Studies 3690.)


3740-50 Conceptual History of Science (4, 4) 3740—The Scientific Revolution: historical evolution of thought in astronomy, mechanics, and philosophy of nature up to Newton. 3750—The Development and Decline of Newtonian Science: historical evolution of thought on the nature of matter and of light, and on that of life. Prereq: Eight hours of physical science or permission of instructor.

3770 Introduction to Philosophy of Science (4) Standard topics in philosophy of science; scientific method, nature of laws and theories, problem of induction, explanation, measurement. No background in logic is presupposed.

3810 Introductory Symbolic Logic (4) Techniques for formal analysis of deductive reasoning (propositional logic and quantification theory).

3910 Contemporary Aesthetics (4) Philosophical discussion of contemporary art.

4000 Special Topics (4) A student- or instructor-initiated course to be offered at convenience of Department. Subject matter to be determined by
mutual consent of students and instructor with approval of Department. Prerequisites to be determined by Department. May be repeated for credit.

4101 Foreign Study (1-16) See page 162.
4102 Off-Campus Study (4-12) See page 161.
4103 Independent Study (4-12) See page 162.
4111-21 Modern Religious Philosophies (4, 4) (Same as Religious Studies 4111-21).
4310 Intermediate Ethics (4) Topics in meta-ethics or ethics.
3370-71 Theoretical Issues in Medical Ethics (4, 4) 3370—Prereq: 2310 or 3611 or permission of the instructor. 3371—Prereq: 4370 or permission of the instructor. (Same as Religious Studies 4370-71).
4410 Plato (4) Prereq: Eight hours of philosophy or permission of instructor.
4420 Aristotle (4) Prereq: Eight hours of philosophy or permission of instructor.
4430 Medieval Philosophy (4) Prereq: Eight hours of philosophy or permission of instructor.
4450 Continental Rationalism (4) Prereq: Eight hours of philosophy or permission of instructor.
4460 British Empiricism (4) Prereq: Eight hours of philosophy or permission of instructor.
4470 Kant (4) Prereq: Eight hours of Philosophy or permission of instructor.
4480 Advanced Topics in Existentialism and Phenomenology (4) Prereq: Eight hours of philosophy or permission of instructor.
4490 Process Philosophy (4) Prereq: Eight hours of philosophy or permission of instructor.
4511 Advanced Topics in Logic (4) Prereq: Permission of instructor. May be repeated for credit.
4610 Philosophical Analysis (4) Eight hours of philosophy or permission of instructor.
4630 Philosophy of Language (4) Prereq: Eight hours of philosophy or permission of instructor.
4710 Philosophy of Natural Science (4) Consideration of standard topics pertinent to natural science including reduction of theories and teleological explanation. Familiarity with symbolic logic is recommended. Prereq: 3770 or two years of natural science.
4720 Philosophy of Social Science (4) Examination of methods of inquiry and modes of explanation in social sciences. Prereq: 3770 or two years of social science.

GRADUATE
5000 Thesis
5050-60 Symbolic Logic (4, 4)
5080 Philosophy of Logic (4)
5110-20-30-40-50-60 Studies in History of European Philosophy (4 per course)
5250 Studies in the History of American Philosophy (4)
5310-20-30 Studies in Value and Normative Theories (4, 4, 4)
5410 Philosophy of History (4)
5430 Philosophy and Literature (4)
5450 Problems of the Self (4)
5460 Philosophy of Mind (4)
5510-20-30 Studies in Epistemology (4, 4, 4)
5550-60 Philosophy of Science (4, 4)
5610 Recent Developments in Philosophy of Religion (4)

5710-20 Studies in Metaphysics (4, 4)
5910-20-30 Research (4, 4, 4)
6000 Doctoral Research and Dissertation
6050-60 Seminars in Advanced Logic and Philosophy of Logic (4, 4)
6110-20-30 Seminars in History of European Philosophy (4, 4, 4)
6150-60 Seminars in History of American Philosophy (4, 4)
6250 Seminar in Philosophy of Religion (4)
6310 Seminar in Axiology (4)
6350-60 Seminars in Ethics and Metaphysics (4, 4)
6510-20 Seminars in Epistemology (4, 4)
6550 Seminar in Philosophy of Science (4)

Physical Sciences
Major: None offered.
Minor: Consists of the following courses:
Physics 2210-20-30, Chemistry 2140-49, 3211-21-31, 3219-29-39, and six hours chosen from Biochemistry 4210-20-30, Chemistry 3410-20-30, 4140-50, 4910-20-30 or Physics 3410-20-30, 3610-20-30.1 Prerequisites to this minor concentration are Mathematics 1940-50 and Chemistry 1110-20-30. The Physical Sciences minor is designed particularly for students majoring in one of the biological sciences and/or preparing for graduate studies in a biological science or medicine.

1Mathematics 280 is a prerequisite for these courses.

Physics and Astronomy
Associate Professors: C. B. Bingham, Ph.D. Tennessee; W. E. Blais, Ph.D. Michigan State; T. A. Callicott, Ph.D. Purdue; R. W. Childers, Ph.D. Vanderbilt; K. E. Duckett, Ph.D. Tennessee; W. A. Dunnill, Ph.D. Florida; J. W. L. Lewis, Ph.D. Missouri; O. C. Eldridge, Ph.D. California (Berkeley); K. Fox, Ph.D. Michigan; E. L. Hart, Ph.D. Cornell; R. D. Hodes, Ph.D. Tennessee; C. Jacobson, Ph.D. Yale; R. W. Lide, Ph.D. Michigan; S. Y. Shiah, Ph.D. Maryland; I. H. Tipton (Emeritus), Ph.D., Duke.
Research Assistant Professors: L. Adler, Ph.D. Tennessee; R. S. Thoe, Ph.D. Connecticut;

Astronomy (150)
UNDERGRADUATE
2110-20-30 Introductory Astronomy (4, 4, 4) Surveys astronomical data and theories. 2110-30 concentrates on the solar system. 2130 introduces stellar astronomy including binary and variable stars clusters and nebulae. It is recommended that the courses be taken in sequence. 4 hrs including demonstration lab.
2118-28-38 Honors: Introductory Astronomy (4, 4, 4) Observation and theories of matter and space in the universe. Planets, stars, and the interstellar medium. Must be taken in sequence. 3 hrs lecture-discussion; 2 hrs lab per week. Coreq: Math 1810-20-30 or equivalent.
4110-20-30 Astrophysics (3, 3, 3) Physics of stars and interstellar matter, planets and interplanetary matter; atmospheres, interiors, and evolution; nebulae and quasars. Prereq: Math 2210-20-30 and 3610-20 or equivalent. Current developments. Approach will be interdisciplinary. Approved for majors in Physics. Prereq: Physics 2350 and permission of instructor.

Physics (773)
UNDERGRADUATE
The undergraduate program in physics is designed to give the student a wide background which will permit him readily to specialize in various areas such as nuclear physics, solid state physics, high energy physics, molecular physics, etc.
Students planning to major in physics are urged to consult advisers in the Department of Physics prior to registration in freshman year with regard to selection of proper first course in physics.
Major: Physics 1318-28-38 and Mathematics 1840-50-60 are prerequisites to a major in Physics which includes the following courses: Physics 2318-28-38, Mathematics 2840-50-60; Physics 3210-20; either Physics 3710-20-30 or 4110-20-30; 4210-20, and at least six hours from 3510-20-30, 3610-20; 4230-40, 4510-20-30, 4540-50. Physics 1310-20 or Basic Engineering 1310-20 may be substituted for Physics 1318-28-38 and Physics 2310-20-30 may be substituted for Physics 2318-28-38 as a graduation requirement. Transfer students from other schools or from other departments may substitute 2510 and one quarter of an upper division physics course for 1318-28-38.
A major in Physics with a concentration in Health Physics includes Physics 2310-20-30, 2318-28, 3210-20, 3710-20-30, 4210-20, 4710-20-30, and Mathematics 2840-50-60. It is suggested that students also take Chemistry 1310-20-30, 3211-21-31, 3219-29-39, and 12 hours of an approved biological science.
Minor: A minor in Physics consists of 24 hours of courses including 2318-28-38 and the remainder from physics courses numbered 3000 or above. Substitution provisions in the major statement apply also to the minor.

2510 Mechanics and Heat (5) Kinematics, Newton's Laws, momentum, rotation, calorimetry, thermodynamics, thermodynamics of a solid, dynamics of a particle; 3220—Static, kinematics, and dynamics of systems of particles and rigid bodies; 3250—Lagrangian and Hamiltonian equations of motion. Must be taken in sequence. Prereq: Math 1810-20 or equivalent. 2510 satisfies prerequisite for Physics 2310.

3210-20-30 Mechanics (3, 3, 3) 3210—Statics, kinematics, and dynamics of a solid; 3220—Statics, kinematics, and dynamics of systems of particles and rigid bodies; 3250—Lagrangian and Hamiltonian equations of motion. Must be taken in sequence. Prereq: 2320 and Math 2860.

3220 Heat and Thermodynamics (3) Concepts of temperature and heat; laws of thermodynamics; applications of laws to simple physical and chemical problems. Prereq: 2320 or 2320 and calculus; 3210-20 or instructor's permission.

3410-20-30 Conception of Modern Physics (3, 3, 3) Modern ideas of atomic structure; change of state, phase transformations, quantum theory and credit for majors. Prereq: General physics. Must be taken in sequence.

3510-20-30 Physical Measurements (3, 3, 3) Laboratory measurement of some physical quantities. Theory supplied. Prereq: 2310-20 or 2320-20 and calculus; 3510 for 3520 and 3530. 3 labs.

3610-20 Electronics (3, 3) Electronic components and circuits of interest to physicists. Prereq: 2310-20 or 2320-20 and calculus. 3 labs.

3850 Nuclear Electronics Laboratory (3) Elementary circuits of interest in nuclear instrumentation are designed and built, and their characteristics are tested as a function of various parameters. Prereq: 3610-20.

3640-50-60 Health Physics Practicum (3, 3, 3) Instrumentation; legal aspects and practice of applied Health Physics; problem solving; record keeping and report writing. For students in Health Physics cooperative program.

3710-20-30 Introduction to Atomic and Nuclear Physics (3, 3, 3) 3710—Special relativity and early quantum theory, quantum mechanics and molecular physics; 3730—Nuclear physics. Prereq: Math 2860 and Physics 2320 for 3710; 2338 or 3710 for 3720-30.

3999 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with permission of department.


4140 Elementary Nuclear Physics (3) General properties of nuclei, two-nucleon systems, nuclear forces, nuclear models, nuclear reactions, nuclear disintegrations and beta-decay, nuclear spin and magnetism. Prereq: 3730 or 4120.

4160 Physical Acoustics (4) Considerations fundamental to detailed investigation of any branch of acoustics. Properties of acoustic waves in the infrasonic, the audible, the ultrasonic, and the hyperasonic ranges of frequencies. 3 hrs and 1 lab. Prereq: 3210 or 3220.

4210-20-50 Electricity and Magnetism (3, 3, 3) Intermediate level electrotechnics: steady and alternating currents; laws of electromagnetism; Maxwell's equations; radiation of electromagnetic waves; reflection and refraction; electromagnetic fields of moving charges. Must be taken in sequence. Prereq: 2320 or 2220 and Math 2830.

4230-40 Geophysical and Physical Optics (4, 4) Lectures, problems, and experiments in geometrical (4230) and physical (4240) optics. Prereq: 2320 and calculus. 3 hrs, 1 lab.


4540-50 Experimental Nuclear and Radiation Physics (4, 4) Introduction of charged particles and electromagnetic radiation with matter; theory and characteristics of various detectors; statistics of counting, nuclear properties. Experiments illustrate recent techniques for investigating the nucleus and nuclear radiation. 1 hr. lecture, 6 hrs lab. Prereq: 2320.


4710-20-30 Introduction to Health Physics (3, 3, 3) Radioactivity, interaction of electromagnetic radiation with matter, atomic and molecular properties of matter, point kernel and extended sources, X-rays and gamma rays, neutron activation, interaction of charged particles with matter, stopping power, range-energy relations, counting statistics, shielding, dosimetry, waste disposal, critically prevention, radiation biology and ecology. Prereq: 3730.

4918-38-48-58-68-78-88-98 Honors: Research and Independent Study (1 hr each) Designed for excellent undergraduate majors. Provides opportunity for research and independent study with faculty guidance. Special permission of department is required. Maximum credit 9 hrs.

4999 Senior Seminar (1-3) Topic of current interest. May be repeated for credit with permission of department.

GRADUATE

The Master's Program

General requirements for the Master's Degree are found in the Graduate School Catalog.

The Doctoral Program

General requirements for the Doctor's degree are found in the Graduate School Catalog.

5000 Thesis

5080 Graduate Research Participation (3)

5110-20-30 Introductory to Theoretical Physics (3, 3, 3)

5210-20 Advanced Modern Physics (3, 3, 3)

5240 Electronic Properties of Solids (3)

5250 Electromagnetic Properties of Solids (3)

5310-20 Advanced Dynamics (3, 3, 3)

5410-20 Electromagnetic Theory (3, 3, 3)

5440 Experimental Methods of Infrared and Raman Spectroscopy (3)

5480 Radiation Chemistry (3)

5510-20 Advanced Thermodynamics and Statistical Mechanics (3, 3, 3)

5610-20-30 Mathematical Methods in Physics (3, 3, 3)

5640 Numerical Methods in Physics (3)

5720 Physics of Polyatomic Molecules (3)

* Or equivalent honors courses.
5910-20-30 Special Problems (3, 3, 3)
5911-21-31 Special Problems in Teaching of Physics (1, 1, 1)
5990 Seminars (1-9)
6000 Doctoral Research and Dissertation
6110-20-30 Quantum Mechanics (3, 3, 3)
6210-20-30 Nuclear Structure (3, 3, 3)
6310 Electromagnetic Theory of Light (3)
6320 Special Relativity (3)
6330 General Relativity (3)
6420 Advanced Topics in Classical Theory (3)
6430 Advanced Topics in Quantum Theory (3)
6500-10 Electrical Conduction in Gases and Plasma Physics (3, 3)
6610 Interaction of Electrons with Gases (3)
6620 Interaction of Electrons with Solids (3)
6630 Interaction of Radiation with Matter (3)
6710-20-30 Advanced Solid State Physics (3, 3, 3)
6810 Vibrational Problems in Molecular Spectra (3)
6820 Molecular Vibration-Rotation Theory (3)

Political Science (801)

Professors:
T. D. Unger (Head), Ph.D. Iowa; R. S. Avery, Ph.D. Northwestern; D. H. Carlisle, Ph.D. North Carolina; L. L. Dörsch (Emeritus), Ph.D. Chicago; L. S. Greene, Ph.D. Wisconsin; V. R. Irish, Ph.D. Chicago; D. D. Nimmo, Ph.D. Vanderbilt; N. Plas, Ph.D. Utah; N. M. Robinson, Ph.D. Syracuse; O. H. Stephens, Jr., Ph.D. Johns Hopkins; D. M. Weisbaden, Ph.D. Texas.

Associate Professors:
R. B. Cunningham, Ph.D. Indiana; J. W. Dodd, Ph.D. Tulane; A. A. Elliott, Ph.D. Columbia; A. H. Hopkins, Ph.D. Syracuse; P. S. Kronenberg, Ph.D. Pittsburgh; S. J. Koetsky, Ph.D. Columbia; T. McN. Simpson, III, Ph.D. Johns Hopkins; T. A. Smith, Ph.D. Ohio State.

Assistant Professors:
G. C. Evans, Ph.D. Columbia; B. P. Greene, Ph.D. Indiana; J. P. Jones, Ph.D. Tennessee; R. L. Peterson, Ph.D. Yale; R. E. Roson, Ph.D. Maryland; B. D. Rogers, Ph.D. Indiana; P. R. Schuman, M.A. Johns Hopkins.

Instructors:

*Bureau of Public Administration

Professors:
T. D. Unger (Director), Ph.D. Iowa; H. Pfleger (Associate Director), Ph.D. Illinois.

Associate Professor:
P. S. Kronenberg, (Associate Director, Nashville), Ph.D. Pittsburgh.

Assistant Professors:
B. P. Greene, Ph.D. Indiana; R. E. Roson (Assistant Director), Ph.D. Maryland; B. D. Rogers, Ph.D. Indiana.

Instructor:
F. R. Ingham, M.A. Suny.

Nashville.

UNDERGRADUATE

A major consists of forty hours: eight hours at the 2000 level or in Political Science courses not used for triad credit but included on the History and Society list; thirty-two hours in courses numbered above 3000. Upper division courses on the triad list may be counted in the latter group. The thirty-two hours should include at least one course in each of four areas of the discipline: United States government and politics/public administration, Comparative government and politics, International relations, Political theory and methodology.

A minor consists of twenty-four hours: eight hours as specified in the major statement, plus sixteen hours numbered above 3000. Upper division courses on the triad list may be counted in the latter group.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major and minor in the 1972-73 or earlier general catalog.

Public Administration. See pages 68 and 161.

American Studies. See Cultural Studies.

Asian Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

2020 Introduction to Political Science (4) A variety of the basic substantive concepts and concerns of political science.

2510-20 United States Government and Politics (4, 4)
2510—Foundations: the Constitution, federalism, separation of powers, campaigns, and elections, parties, interest groups, the media, public opinion. 2520—Institutions: Executive, legislative, judiciary, and bureaucracy at national, state, and local levels.

2518-28 Honors: United States Government and Politics (4, 4) Honors course designed for students of superior ability and interest. Entrance into 2518 requires a B average; selected entering freshmen will be accepted on the basis of placement scores and high school record. A grade of B in 2518 is necessary for entrance into 2528.

2530 Tennessee Government and Politics (4)

3170-80 U.S. Foreign Policy Processes (4, 4)
Processes whereby U.S. foreign policies are made and implemented, focusing on interaction within federal bureaucracy and roles of the President, Congress, the press, and public opinion.

3545-46 United States Constitutional Law (4, 4)
3545—Analysis of judicial review, constitutional powers of President and Congress, federalism, sources of regulatory, and constitutional protection of political rights. 2510-20 desirable as a preceding course. 3546—Study of civil rights and liberties, with emphasis on judicial interpretation of First Amendment freedoms, rights of the accused, racial equality, and the right of privacy.

3555 Minority Group Politics in the United States (4) Content varies from quarter to quarter. May be repeated up to a maximum of 8 hours credit with permission of Department.

3557 Politics and the Environment (4) Examination of formulation and implementation of public policies relating to physical environment, with emphasis upon water and air pollution control.

3558 Introduction to Public Administration Organization and Management (4) Organization and decision-making theory, line and staff services, politics of organization, leadership, personnel and fiscal management, administrative responsibility. 2510-20 desirable as preceding course. (Same as Water Resources Development 3565).

3559 Public Administration and the Policy-Making Process (4) Public bureaucracies and the policy-making process, their political environments, administrative problems associated with policy-making. 2510-20 desirable as preceding course.

3615-16 Dynamics of Black African Politics (4, 4)
3621-22 Politics of Asian States (4, 4)
3625-26 Latin American Government and Politics (4, 4)
3630 Administration of Government Enterprises (3) Problems of special government enterprises, such as TVA.

3631-32 Government and Politics of the Soviet Union (4, 4)
3635-36 Politics in Western Democracies (4, 4)
Political culture, patterns, and institutions of Western democracies.

3641-42 Government and Politics of Middle East and North Africa (4, 4)
3655 Political Change in Developing Areas (4) Characteristics and problems of political changes, with primary focus on developing areas.

3701-02 Introduction to International Relations (4, 4)
3701—Methodology and background. 3702—International processes and organizations including war, diplomacy, law and organization.
3705 Contemporary Diplomatic and Military Problems (4) Analysis of current international events.
3710-20-30 State, Regional, and Local Government (3) The study of state, regional, and local governmental institutions and political structure. 3720—Government organs and their relationships; 3730—Functions and administration.
3715 Contemporary Problems of Soviet Foreign Policy (4)
3801-03-05-09 Studies in Political Thought (4, 4, 4) 3801—Classical Greek and Roman political thought. 3862—From Augustine to Luther: Emphasis on problems and theories of religion and politics. 3863—Machiavellian through the Enlightenment. 3864—Political theories of industrial and technological societies; 19th and 20th centuries.
4101 Foreign Study (1-16) See page 162.
4102 Off-Campus Study (1-16) See page 161.
4103 Independent Study (1-16) See page 162.
4140-20 Administrative Law (3, 3) Powers of, procedures of, controls over administrators.
4535-36 Political Attitudes, Opinions and Communication (4, 4) Nature, development, formation and distribution of political relevant attitudes and opinions; role of leadership, persuasion, and communication in opinion-policy process.
4540-50 Presidency, Congress and Public Policy (4, 4) The Presidency and Congress within framework of policy-making process.
4545-46 The Judicial Process (4, 4) The study of courts as components of political systems, and public policy formulation through judicial decision-making. 2510-20 desirable as preceding courses.
4575 Special Topics in United States Government and Politics (4) May be repeated up to a maximum of 6 hours credit with permission of Department.
4580-90 The Urban Policy (4, 4) Analysis of political institutions and processes in metropolitan areas; urban problems and policies.
4610 The Budgetary Process (3) Fiscal planning, budget and expenditure processes in government, their policy and administrative implications.
4620 Public Personnel Administration (3) Development of the merit system in government, career systems, public personnel management functions, organization for personnel management.
4630 Problems in Public Management (3) Selected problems in the national and state level of government. 4630—Internal and external communication and information systems in government and public access to information.
4665-86 Policy-Making in Democracies (4, 4) Comparative approach to theory and process of making public policies.
4675 Special Topics in Comparative Government and Politics (4) May be repeated up to a maximum of 6 hours credit with permission of Department.
4701-02 International Organization (4, 4) 4701—The League of Nations; 4702—The United Nations. 4702—Functional and regional organizations.
4711 International Law (4)
4740-50-60 Politics and Elections (3, 3, 3) 4740-50—Structure and function of party system; nominations and campaigns. 4760—Voting behavior of the electorate.
4815 Contemporary Soviet Marxism-Leninism (4) Soviet applications of Marxist-Leninist theory.
4831-32-33 The Systematic Study of Politics (4, 4, 4) Scope, methods and procedures of analysis in political science, intended primarily for seniors intending to pursue graduate work and entering graduate students who have not had such a course.
4875 Special Topics in Political Thought (4) May be repeated up to a maximum of 8 hours credit with permission of Department.
4900 Aspects of Urban Environment I (3) Interdisciplinary course in urban problems. Prereq: Permission of one instructor. (Same as Architecture 4900, Human Services 4900, Psychology 4900, and Real Estate 4900).
4975 Proseminar in Political Science (4) Selected research for seniors; primarily for majors. May be repeated up to a maximum of 8 hours with permission of Department.
GRADUATE
The Master's Program
See requirements in the Graduate School Catalog.
The Doctoral Program
General requirements for the degree of Doctor of Philosophy are described in the Graduate School Catalog.
5000 Thesis
5110-20 Seminar in Political Theory (3, 3)
5210-20-30 Seminar in World Politics (3, 3, 3)
5211 Directed Readings in Political Science (3)
5250 Seminar in African Politics (3)
5270-80-90 Seminar in Politics of Development (3, 3, 3)
5310-20-30 Seminar in Comparative Government (3, 3, 3)
5340-50-60 Seminar in Latin American Government (3, 3, 3)
5370-80 Seminar in Soviet Politics and Government (3, 3)
5410-20-30 Seminar in Public Law (3, 3, 3)
5440-50 Theory and Analysis of U.S. Foreign Policy Processes (4, 4)
5510-20 Seminar in International Organization (3)
5540 Seminar in Comparative Public Administration (3)
5550 Seminar in Administration in Developing Countries (3)
5600 Public Administration (3)
5605 Research and Methodology in Public Administration (3)
5610-20 Seminar in Organization Theory (3, 3)
5611-21-31 Seminar in State-Local Administration (3, 3, 3)
5630 Seminar in Technology and Public Policy (3)
5640-50-60 Seminar in Metropolitan Areas (3, 3, 3)
5641 Seminar in Contemporary Public Policies (3)
5670-80 Seminar in Policy Analysis (3, 3)
5710 Seminar in Politics of Administration (3)
5740 Seminar in Organizational Analysis (3)
5750 Seminar in Public Management (3)
5760 Seminar in TVA Public Personnel Management Practices (3)
5770 Pracicum in Public Administration (3)
5780 Seminar in Fiscal Management (3)
5810 The American Political Process (4)
5820 The American Political Process (4)
5910-20-30 Methodology and Bibliography (3, 3, 3)
6000 Doctoral Research and Dissertation
6210 Advanced Studies in International Politics (3)
6310 Advanced Studies in Political Theory (4)
6410 Advanced Studies in International Organization (3)
6430 Advanced Studies in Jurisprudence (3)
6440-50-60 Advanced Studies in Comparative Politics (3, 3, 3)
6510-20-30 Advanced Studies in American Constitutional Law (3, 3, 3)
6610-20-30 Advanced Studies in Public Administration (3, 3, 3)
6710 Directed Research in Political Science (3)
6810-20-30 Advanced Studies in the Political Process (3, 3, 3)

Psychology (830)

Professors:
W. H. Calhoun (Head), Ph.D. California (Berkeley); G. M. Burghardt, Ph.D. Chicago; J. F. Byrne, Ph.D. Tennessee; E. E. Curton (Emeritus), Ph.D.; D. Colston; H. J. Fink, Ph.D. Syracuse; L. Handler, Ph.D. Michigan; J. F. Lubar, Ph.D. Chicago; E. L. Milton (Director Research Center), Ph.D. Michigan; K. R. Newton, Ph.D. Tennessee; H. R. Pollio, Ph.D. Michigan; J. M. Porter, Ph.D. Yale; N. L. Rasch; Ph.D. Pennsylvania; F. Samesnia; Ph.D. Keio (Japan); R. R. Shrader, Ph.D. Tennessee; W. S. Verpland; Ph.D. Brown; R. G. Wahter, Ph.D. Washington; J. A. Weibler, Ph.D. Syracuse.

Associate Professors:
H. S. Bacon, Ph.D. Tennessee; C. P. Cohen, Ph.D. Kansas; L. F. Droopmam, Ph.D. Catholic; H. R. Friedman, Ph.D. Tennessee; S. J. Handel, Ph.D. Johns Hopkins; W. G. Morgan, Jr., Ph.D. Tennessee; W. M. Simmons, M.S.S.W. Tennessee; A. S. Webster, Ph.D. Tennessee.

Assistant Professors:

UNDERGRADUATE

Major: (Concentration in General Psychology). Designed to give students a broad and current background in the science and application of psychological methods and principles. It is particularly suited for students who desire a liberal education concentrating on psychology. This emphasis will consist of Psychology 2500, 8 hours from 2520-30-40, Psychology 3150, at least 2 hours of laboratory, field, or practicum courses, and 32 or more hours of upper division psychology courses.

(Concentration in Academic Psychology). Designed to prepare students for advanced work in the scientific, professional, and college level teaching areas of psychology. Course work will consist of Psychology 2500 plus one course from 2520-30-40, Psychology 3150, and 8 hours of laboratory, field, or practicum courses, and 20 or more hours of upper division psychology courses of which at least 12 hours should be at the 4000 level. Prerequisites are Biology 1200-30 and Mathematics 1540-50-60 or 1840-50-60 or equivalents. It is strongly suggested that Triad and elective courses also be taken in other areas of the behavioral sciences such as sociology, anthropology, and political science.

Minor: A minor in Psychology shall consist of Psychology 2500 and 20 additional hours from 3000 and 4000 level courses.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Honors Program in Psychology. A two-year (Junior-Senior) program leading to the B.A. degree. Objective of the Honors Program is to enable superior students to accelerate development of his grasp of science of
Eligibility: Selection of participants is determined by departmental Undergraduate Honors Committee. The student should apply to the Psychology Department. Successful applicants usually have a G.P.A. of at least 3.0 and have completed Psychology 2500, 2520 or equivalent. Requirements: 3150 and two quarters of laboratory psychology 4948-58-68 and Psychology 4978-88-98. Completion of 4996 is dependent upon submission of an acceptable Honors research thesis and passing of a final Honors Examination.

2500 General Psychology (4) An introduction to concepts, methods, and major findings in the field of psychology. Prerequisite required. Department.

2518-28 Honors: General Psychology (4, 4) First quarter an enriched survey of general psychology. Second quarter participation in psychological research, either individually or group arranged. Prereq, for 2518: Minimum ACT Composite 28; GPA 3.2. Prereq, for 2528: admission by permission of the department.

2520 Biological Foundations of Behavior (4) A survey of the functional attributes of behavior. Prerequisite recommended. General Psychology.

2530 Introduction to Social Psychology (4) human beings as social creatures. Emphasis upon social behavior and individual responsibility. Prereq, 2510: consent of instructor.

2540 Psychology of the Individual (4) Study of individuals, their behavior, and the progressive changes in behavior that occur in natural environments. Prereq, 2510: consent of instructor.

3106 Undergraduate Field Work in Psychological Services (1-4) Supervised fieldwork experience in community agencies. Prereq, 2510: consent of instructor. May be repeated for credit to maximum of 8 hours. No more than 6 credit hrs may be applied toward major. Prereq, 9 hrs upper division psychology and permission of instructor. Prereq, 3100: consent of instructor.


3129 Laboratory Psychology Laboratory (2) Prereq, 3120: consent of instructor.

3150 Psychological Statistics (4) Introduction to basic statistical methods used in psychological science. Prereq, 3120: consent of instructor.

3210 Learning and Thinking (4) Study of theoretical and empirical basis of learning and thinking. Required, General Psychology recommended.

3219 Laboratory in Learning and Thinking (2)

3220 Motivation and Emotion (4) Current theories, approaches and their development.


3319 Laboratory Methods in Psychology, I (2) Laboratory methods in research investigation of individual behavior and in groups. Prereq or coreq, 3120: consent of instructor.

3430 Psychology of the Consumer (4) Origins and principles of advertising and selling from standpoint of consumer choice. Prereq, 2530 recommended.

3550 Child Psychology (4) Origins and principles of behavior in infancy and childhood. Prereq, 2530: consent of instructor.

3559 Laboratory in Child Psychology (2) Field and laboratory study of child development. Coreq, 3550.

3616-26 Human Relations (0, 4) Experience and study of human relations in dyadic, small and large group situations. Primarily experiential. No credit until course is completed. Prereq, 3559.

3650 Abnormal Psychology (4) Constitutional and environmental factors in abnormal behavior; diagnostic techniques; therapeutic methods. Prereq, 3559.

3660 Sociopsychological Approaches to Abnormal Behavior (4) Social learning approaches to abnormal behavior. Prereq, 3550.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4107 Experience in Individualized Instruction (2) Supervised participation as a tutor in individualized instruction. Prereq, permission of instructor. May be repeated once. Prereq, 3559.

4109 Undergraduate Research (1-6) Permission of instructor. Prereq, 3559.

4120 Topics in Social Psychology (4) Intensive study of a selected topic. Prereq, 3559 or Sociology 3120. (Same as Sociology 4120)

4230 Sensory Processes and Perception (4) Survey of sensory and perceptual processes with emphasis on audition and vision. Prereq, 3559: consent of instructor.

4239 Laboratory in Sensory Processes and Perception (2) Prereq, 4230.

4340 Human Factors in Man-Machine Systems (4) Organizational-Industrial Psychology (3) Same as Industrial Management 4460.

5150 Personality Theories (4) Prereq, 3550: consent of instructor.

5159 Research in Personality (4) Discussion and demonstration of research on individual behavior related to major theoretical issues and to substantive areas of research. Prereq, 3550: consent of instructor.

5220 Personality and Social Systems (4) Prereq, 3559: consent of instructor.

5450 Psychology of Aging (4) Behavioral changes from maturity through old age. Prereq, 3550: consent of instructor.

4610 Group Processes (3) Study of group behavior and the development of group processes. Prereq, 3550: consent of instructor.

4670 Psychological Tests and Measures (4) Theory and construction of individual and group measures for assessment of intelligence, personality, special abilities, and educational achievement. Prereq, 3550.

4650 Symbolic Processes (4) Logic of symbols and systems, structure and function of memory, problem-solving, and concepts of nature; use, and development of language. Prereq, 3550.

4710 Physiological Psychology Laboratory (4) An introduction to the study of nervous system and its physiological correlates of behavior. Prereq, 1 year of Biology or Zoology and Psychology 2520.

4719 Physiological Psychology Laboratory (4) Laboratory studies of nervous system and its physiological correlates of behavior. Prereq, 4710.

4720 Comparative Animal Behavior (4) Methods and principles. (Same as Zoology 4720.)

4729 Comparative Animal Behavior Laboratory (4) Laboratory and field studies. Coreq, 4720. (Same as Zoology 4729.)

4750 Evolution and Ontogeny of Social Behavior (4) Developmental, ecological, and development processes as they apply to social organization and dynamics of vertebrates. Prereq, permission of instructor.

4830 History and Systems of Psychology (4) Prereq, 6 hours of Upper Division psychology.

4850 Learning Theories (4) Historical and theoretical development of learning models. Prereq, 3210.

4850 Programmed Learning (3) Same as Education 3686.

4870 Contemporary Research in Behavior of Women (4) Study of interaction of cultural and biological factors in determining the behavior of women, with emphasis on physiological mechanisms involved.

4880 Afro-American Psychology (4) Review and analysis of psychological literature on Afro-Americans. Prereq, 4520 and/or permission of instructor.

4890 Differential Psychology (3) Nature and sources of individual differences in behavioral characteristics, and differences between racial, ethnic, socioeconomic, sex, and other groups. Prereq, 4640.

4900 Aspects of Urban Environment I (3) Interdisciplinary course in urban problems. Prereq, permission of instructor. (Same as Architecture 4900, Human Services 4900, Political Science 4900, and Real Estate 4900.)

4910 Senior Seminar in General Psychology (4) Integrative review of major problems in psychology. Intensive examination of selected topics. Prereq, permission of instructor.

4948-58-68 Honors: Reading and Research (4, 4, 4) Honors candidates only.

4978-88-98 Honors: Senior Reading and Research (4, 4, 4) Honors candidates only.

GRADUATE
The Master's Program
See requirements in the Graduate School Catalog.

The Doctoral Program
General requirements for the degree of Doctor of Philosophy are described in the Graduate School Catalog.

5000 Thesis
5019-29-39 Laboratory Techniques in Experimental Psychology (3, 3, 3)
5070 Seminar in College Teaching (2)
5079 Practicum in College Teaching (2)
5080 Current Topics in Applied Psychology (3)
5100 Developmental Psychology (3)
5110 Clinical Aspects of Human Sexuality (3)
5111-12-13 Seminar in Current Issues in School Psychology (1, 1, 1)
5140-50 Educational Assessment (3, 3, 3)
5259-59-69 Practicum in School Psychology I (2, 2, 2)
5170-80-90 Seminar in Organizational Psychology (3, 3, 3)
5210 Readings in Psychology (1)
5220 Readings in Psychology (2)
5230 Readings in Psychology (3)
5240 Readings in Psychology (4)
Prospective majors are encouraged to begin to construct their own plans of study as early as possible. Some may desire eventually to pursue graduate study in religion, philosophy, history, literature or professional theological training. It is advisable to begin coordinating one's course work early in this case. Other students may desire a broad, comprehensive program of undergraduate courses combining humanistic and social-scientific studies, looking forward to entry into such careers as government service, social work, medicine, journalism, law, urban planning or personnel work. Whatever the long-range goal may be, students are urged to formulate their own plans of study, in consultation with department faculty. Further details are available in the departmental office.

Minor: Twenty-four hours of courses at the 3000 level and above. It is suggested that students minor in Religious Studies discuss their programs with a member of the department faculty.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

HISTORY AND LITERATURE OF RELIGIONS

3011 Phenomenology of Religion (4) Examination of recurrent forms, themes and patterns in history of religions, such as high gods, cultural heroes, initiations and ascensions.

3021 Religious Myth, Symbol, and Ritual (4) Study of interrelationship of myths, symbols, and rituals among preliterate peoples through a specific motif, such as solar, lunar, and communal.

3061-71 History of Western Religious Thought and Institutions (4, 4) 3061—First Century to the Thirteenth Century. 3071—Thirteenth Century to 1900. (Same as History 3061-71.)

3110 Ancient Israel's Historical and Religious Traditions (4) Political, religious and cultural history and traditions of ancient Israel from earliest period to Exile.

3120 The Rise of Judaism (4) Political, religious and cultural history and traditions of exilic and post-exilic Israel and early Judaism through 135 A.D. Later literature of Old Testament, Apocrypha, and Dead Sea Scrolls.

3210-30-30 Greek and Roman Mythology (3, 3, 3) (Same as Classics 3210-30-30.)

3270 Russian Philosophical and Theological Thought (4) (Same as Russian 3270 and Philosophy 3270.)
PROBLEMATIC OF RELIGION

3600-10 Religious Ethics (4, 4) Historical and critical survey of religious ethics; basic theories and their application in social problems.

3611 Religious and Philosophical Issues in Medical Ethics (4) Explores ethical issues in medicine such as abortion, euthanasia, human experimentation, fairness in health care delivery and the doctor-patient relationship. (Same as Philosophy 3611).

3620 Topics in Religious Ethics (4) Examination of particular theoretical issues and social problems from perspectives in religious ethics. May be repeated once for credit.

3690 Philosophy of Religion (4) (Same as Philosophy 3690).

3715 Religious Thought in the Nineteenth Century (4) Major problems and themes in European and American religious thought between 1800 and the beginning of World War I.

3720 Contemporary Religious Thought (3) Major themes, issues, and thinkers.

3740 Issues in Science and Religion (3) Relation of religion to history, methods, and theories of science.

3750 Theology and Literature (3) Exploration of issues raised by religious figures of literature. Relation of religious and moral considerations to problems of literary criticism. Relation of religious figures to certain forms of human expression (symbol, metaphor, myth, image) identified in study of literature.

3760 Eastern Religions and Western Thought (3) Critical consideration of influence of Hindu and Buddhist philosophy on Western thinkers.

3780 The Literature of Dissent (3) Critique of religion in Western thought. Aspects of atheism, rebellion, and revolution in such thinkers as Lucretius, Spinoza, Voltaire, Feuerbach, Marx, Nietzsche, Russell, and Carnap.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4111-21 Modern Religious Philosophies (4, 4) Examination of the religious implications of major thinkers and movements, 4111—Nicolas of Cusa to Hume, 4121—Kant and the nineteenth century. Prereq: 9 or other than logic. (Same as Philosophy 4111-21).

4370-71 Theoretical Issues in Medical Ethics (4, 4) (Same as Philosophy 4370-71).

4410 American Religious Thought (4) Selected figures, movements and problems in American religious thought from colonial period to present.

4610 Topics in Western Religious Thought and Institutions (4) Selected figures, issues, and institutions. Seniors and graduate students only, except by permission of Department. Prereq: 3061-71. May be repeated for credit to a maximum of 12 hours.

4810-20-30 Readings and Research in Religious Studies (3, 3, 3)

4960 Tradition, Change and Modernity in Asia (4) Comparative study of processes of religious and social change seen in historical context in Asian societies. Comparative focus of course will vary each year (e.g., China and Japan, India and South Asia, etc.). May be repeated once for credit.

RELATION LANGUAGE STUDIES

3141-51 Elementary Classical Hebrew (4, 4) 3141- 51: Basic elements of Hebrew phonology, script, morphology and syntax. 3151-Continued grammar study and selected reading and translation. Introduction to basic elements of text, literary form, historical, and tradition criticism.

3170-80-90 Intermediate Classical Hebrew (3, 3, 3) 3170-Torah and Former Prophets, 3180-Prophets, 3190-Writings and Mishnaic Hebrew. Prereq: 3151 or permission of instructor.

4740-50-60 Elementary Sanskrit (3, 3, 3) Phonology, morphology, syntax of classical Sanskrit. Readings from the Mahabharata and the Hitopadesa.

4770-80-90 Classical Sanskrit (3, 3, 3) Reading, analysis, and critical interpretation of the Bhagavad Gita and Svarakasinsa's Sankhyakarika together with commentary of Gaudapada. Prereq: 4740-50-60 or equivalent.

4840 Readings in Selected Languages Related to Religious Studies (3) Prereq: Permission of instructor. May be repeated for credit. Maximum 9 hrs.

Romance Languages

Professors:

Assistant Professors:

Placement Examination: Students who have had two or more years' work in French, Italian, or Spanish in high school or one year's work in another college should register in French, Italian, or Spanish 2510. During the first week of the quarter a placement test will be given, and students will be advised if a change in registration is indicated.

Proficiency Examinations: Students who have acquired a knowledge of French, Italian, or Spanish through private study, tutoring or courses in foreign countries, or the like should initiate a request for a proficiency test in the Office of the Dean of Admissions. A student earning a grade of C or better on such a test will receive credit for a limited number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits.

Note to Majors and Minors in French, Italian, or Spanish: Students who have completed nine hours of upper division courses in French, Italian, or Spanish literature at The University of Tennessee, or equivalent work at other
institutions, must either (1) have a minimum grade point average of 2.0 in French, Italian, or Spanish before being accepted for a major's program, or (2) qualify by demonstrating, during the first week of the quarter, not less than a minimum ability equivalent to a grade of middle C on the current examination in French, Italian, or Spanish 2520.

All majors must take upper division courses under more than one instructor, and must have an acceptable pronunciation and an adequate reading knowledge of the language.

Major: (Majors in French, Italian or Spanish) must take at least 36 hours in courses numbered 3000 or above (except French 3010-20-30, Italian 3010, and any course in English translation which is offered by the department). All students must have the following courses or their equivalent (with permission of the department): 8 hours of a survey (or "aspects") of literature, 3510-20 (French majors may take 3610-20); 3 hours of conversation and composition (3410); 3 hours of phonetics (French 3420, Italian 4310, Spanish 4210). Students whose primary interest is literature would complete the major with 9 hours of literature at the 4000-level; 3 hours of language (3420 or 3430) and 9 hours of composition, French language, or civilization. Students whose primary interest is language would complete the major with 9 hours of language (3420-30 or 4220-30 in French or Spanish, French (Spanish) 4250, 4260, 4270, or Italian 4350) 6 hours of literature at the 4000-level; 6 hours of language, literature, or civilization. With permission of the department, students may substitute Foreign Study (4101) for certain courses in this program; students with a special interest, such as Comparative Literature, may make certain substitutions with permission of the department.

Minor: (Any of the Romance languages). Consists of 24 hours in courses numbered above 3000. All 24 hours will be the same restrictions as for the major concentration. All students pursuing a minor must take the same 14 hours which are prescribed for students who are taking the major. The remaining 10 hours of the minor may be selected from either the track described in the major concentration for the student with a primary interest in literature, or 10 hours from the track described in the major concentration for the student with a primary interest in language. Students pursuing a minor are strongly advised to consult with a departmental advisor. There is no major in Portuguese, but a minor is offered.

Students enrolled in the College of Liberal Arts prior to Fall Quarter 1972, who are under the previous B.A. or B.S. curricula will find requirements for the various majors or minors in the 1972-73 or earlier general catalog.

Latin American Studies. See Cultural Studies.

Certification for Teaching French or Spanish in Tennessee
Consult Certification Clerk, Room 212
Clauson Education Building.

UNDERGRADUATE

Arabic (127)

1510-20 Spoken Arabic (4, 4) Must be taken in sequence. Discretion of major instructor. Class meetings and 2 laboratory periods.
2510-20 Elementary Modern Standard (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
4101 Foreign Study (1-16) See page 162.

French (405)
1510-20 Elementary French (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
1518-28 Honors: Elementary French (4, 4) Honors course for students of superior ability. 1518 not open to students who have taken French in high school. Freshmen are admitted on the basis of a diagnostic test or conversation and composition. The Age of Reason school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. This class will cover the normal French program for the first year, but will be enriched whenever possible. Students will be expected to spend the normal amount of time in preparation. Those who find the course too difficult may be transferred to a regular class. Potential majors and minors in French are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.
2510-20 Intermediate French (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
2518-28 Honors: Intermediate French (4, 4) Honors course for students of superior ability in French. Designed for students who want an A or B in 3028 automatically receive credit for French 3000. Prereq: French 1510-20, 1518-28, or equivalent.
2610-20 Panorama of French Culture (4, 4) 2610—From Roman times to the Revolution: Einhard's Cyclades, Song of Roland, St. Louis, Joan of Arc, Montaigne, Moliere, Louis XIV, Rousseau, 1820—The Modern Age. Stendhal, Zola, Sartre, developments in the arts.
3000 French Transition (2) Development of literary and linguistic skills necessary for satisfactory work in courses above 3000. Recommended for all students intending to take upper-division French, especially those intending to major.
3010-20-30 Elements of French for Upper Division and Graduate Students (3, 3, 3) For graduate students preparing for language examinations, and upper division undergraduates desiring knowledge of second foreign language. Prereq: Two years of some foreign language in college or permission of the department. This class does no credit. No credit for students having had 1110-20-30 or equivalent. No auditors.
3240 Women in French Culture (4) Influential role of women in shaping French history and culture.

Feminists (George Sand); royal mistresses (Mme. de Maintenon, Mme. de Stael); actresses (Sarah Bernhardt); scientists (Marie Curie) will be among the important figures studied.
3410-20-30 Intermediate Composition and Conversation (3, 3, 3) Grammatical analysis of modern French. Preparation for the teaching of grammatical principles and their application in translations from English to French, both written and oral; exercises in free composition. Prereq: 2130.
3510-20 Aspects of French Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors.
3610 Survey of French Literature (4, 4) May be taken in place of 3510-20. Prereq: 2520 or equivalent.
4010 Masterpieces of French Literature in English Translation (3) No foreign language credit.
4020 Masterpieces of French Drama in English Translation (3) No foreign language credit.
4101 Foreign Study (1-16) See page 162.
4110-20-30 French Literature of the Seventeenth Century (3, 3, 3) Prereq: 2130 or equivalent.
4150 Theatrical French (1-3) Performance in one or more French plays. May be repeated for credit with permission of department. Prereq: 2130 or equivalent and permission of the instructor.
4160-70-80 Advanced Conversation (2, 2, 2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: completion of 9 hrs of courses on 3000-level.
4210-20-30 Phonetics and Advanced Grammar (3, 3, 3) Prereq: 2130 or equivalent.
4250 Introduction to Descriptive Linguistics (3) Phonetics and phonology, morphology and syntax. Types of languages, linguistic groups, dialects and dialect geography. Application of descriptive linguistics—field linguistics, dialect, study; its practical use in learning languages and in language teaching. Introduction to transformational grammar. Prereq: 9 hrs of upper division English, or 9 hrs of upper division courses in a modern or ancient language (exclusive of German and French 3010-20-30, courses in literature in translation, and general courses in Latin and Greek requiring no knowledge of these languages), or permission of department. (Same as Spanish, German and Russian 4250.)
4260 Introduction to Historical and Comparative Linguistics (3) (Same as Spanish, German and Russian 4260.)
4270 Romance Linguistics (3) Development of classical Latin through various Italian and other major Romance languages. (Same as Spanish 4270.)
4310-20-30 French Literature of Eighteenth Century (3, 3, 3) Prereq: 2130 or equivalent.
4350-60-70 Medieval French Literature (3, 3, 3) Medieval works in modern French texts. Prereq: 2130 or equivalent.
4410-20-30 French Civilization (3, 3, 3) Prereq: 2130 or equivalent.
4510-20-30 French Literature of Nineteenth Century (3, 3, 3) Prereq: 2130 or equivalent.
4618-28 Honors: Readings in French Literature (3, 3) For students who have completed 3130 or equivalent and who have at least 3.0 on all university work. No credit for grading less than B.
4840-50-60 French Literature of Sixteenth Century (3, 3, 3) Prereq: 2130 or equivalent.
7140-20-30 French Literature of Twentieth Century (3, 3, 3) Prereq: 2130 or equivalent.

GRADUATE

The Master's Program
See Graduate School Catalog for requirements.

5000 Thesis
5011 Techniques in Literary Analysis (2)
5110-20-30 Old French (3, 3, 3)
5151-61-71 Bibliography and Methods of Research (1, 1, 1)
5210-20-30 French Literature of Sixteenth Century (3, 3, 3)
5310-20-30 French Directed Readings (3, 3, 3)
5550-60-70 The Philosophes (18th Century) (3, 3, 3)
5410-20-30 The French Novel (3, 3, 3)
5450-60 Lyric Poetry of Nineteenth Century (3, 3, 3)
5510-20-30 The French Drama (3, 3, 3)
5610-20-30 Trends in Contemporary French Literature (3, 3, 3)
5650-60 Advanced Syntax and Stylistics (3, 3)
5670 Problems in Romance Linguistics (3)
5710-20-30 Seminar in French Literature (3, 3, 3)
5910 Literary Criticism: Foundations of Romance Criticism (3)

Italian (554)

UNDERGRADUATE

1510-20 Elementary Italian (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2510-30 Intermediate Italian (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2610-20 Panorama of Italian Culture (4, 4)
2610—Survey of Italian culture from Roman era through the 17th Century. 2620—Survey of Italian culture in the 18th, 19th, 20th Centuries.

2800 Italian Transition (2) Development of literary and linguistic skills necessary for satisfactory work in courses above 3000. Recommended for all students intending to take upper-division Italian, especially those intending to major.

3120-20-30 Civilization and Culture (3, 3, 3) Prereq: 2130 or equivalent.

3130-20-30 Italian Literature in English Translation (3, 3, 3, 3) 3310—Sicilian School, the Florentine School, Dante, Petrarch, Boccaccio, Machiavelli, Ariosto, Tasso. 3320—From the Baroque through Nineteenth century, commedia dell'arte, Vico, Leopardi. 3330—Twentieth century, Carducci, Pirandello, Quasimodo, D'Annunzio, Croce, Moravia.

3410-20-30 Advanced Grammar, Composition, and Conversation (3, 3, 3) Laboratory work, drills, and tapes. Prereq: 2130 or equivalent.

3510-20 Aspects of Italian Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors.

4010-20 Italian Drama in English Translation (3, 3)
4010—La commedia dell'arte and major works of Machiavelli, Metastasio, Alfieri, Goldoni. 4020— Twentieth century theatre: operetta drama, the Grottesca, Pirandello, De Filippo, Frati.

4050-60-70 Dante and Medieval Culture (3, 3, 3)
Readings and lectures in English for students majoring or minoring in other departments. Readings, reports, and term papers in Italian for students majoring or minoring in Italian. (Same as Comparative Literature 4050-60-70.)

4101 Foreign Study (1-16) See page

4110-20-30 Anthology of Italian Literature (3, 3, 3)
Prereq: 3130 or equivalent.

4150 Theatrical Italian (1-3) Performance in one or more Italian plays. May be repeated for credit with permission of department. Prereq: 2130 or equivalent and permission of instructor.

4160-70-80 Advanced Conversation (2, 2, 2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: completion of 9 hrs of courses on 3000 level.

4220 Petrarch (3) Prereq: 3130 or equivalent.

4230 Boccaccio (3) Prereq: 3130 or equivalent.

4320 History of Italian Language (3) Prereq: 3130 or equivalent.

4410-20-30 Literature of the Rinascimento (3, 3, 3) From Pulci to Tasso, the Quattrocento and the Cinquecento. Prereq: 3130 or equivalent.

4510-20 Literature of the Ottocento (3, 3) From Fosco to D'Annunzio. Prereq: 2130 or equivalent.

4530 The Modern Novel (3) Prereq: 2130 or equivalent.

4540 The Modern Theater (3) Prereq: 2130 or equivalent.

4610 Contemporary Theater (3) Prereq: 2130 or equivalent.

4620 Contemporary Poetry (3) Prereq: 2130 or equivalent.

4630 Contemporary Prose (3) Prereq: 2130 or equivalent.

GRADUATE

See Graduate School Catalog for requirements.

5000 Thesis
5011 Techniques in Literary Analysis (2)
5151-61-71 Bibliography and Methods of Research (1, 1, 1)
5610-20-30 Readings in Italian Literature (3, 3, 3)
5710-20-30 Seminar in Italian Literature (3, 3, 3)

Portuguese (811)

UNDERGRADUATE

1510-20 Elementary Portuguese (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2510-20 Intermediate Portuguese (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2810-30-20 Aspects of Portuguese Literature (4, 4)
Prereq: 2520 or equivalent. Recommended for literature majors.

4011 Foreign Study (1-16) See page

4310-20-30 Directed Readings in Brazilian and Portuguese Literature (3, 3, 3) May be repeated with permission of instructor.

Spanish (924)

UNDERGRADUATE

1510-20 Elementary Spanish (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

1518-28 Honors: Elementary Spanish (4, 4) Honors course for students of superior ability. 1518 not open to students who have taken Spanish in high school. Freshmen are admitted on the basis of a diagnostic test or conference with the instructor, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. This class will cover the normal Spanish program for the first year, but will be enriched whenever possible. Students will be expected to spend only the normal amount of time in preparation. Those who find the course too difficult may easily transfer to a regular class. Potential majors and minors in Spanish are urged to take this course. Students who pass 1518 with a grade of B or higher may take 1528 instead of 1520.

2510-20 Intermediate Spanish (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2518-28 Honors: Intermediate Spanish (4, 4) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. Students will follow an enriched program with continuing emphasis upon speaking ability and with special emphasis on reading, including literary selections. Must be taken in sequence. Students who earn an A or B in 2528 automatically receive credit for Spanish 3000. Prereq: Spanish 1518-28, or equivalent.

2610-20 Panorama of Hispanic Culture (4, 4)
2610—Peninsular Spain from Roman invasion through 19th Century, including Colonial period in Latin America. 2620—Highlights of 20th Century culture in both Latin America and Spain.

3000 Spanish Transition (2) Development of literary and linguistic skills necessary for satisfactory work in courses above 3000. Recommended for all students intending to take upper-division Spanish, especially those intending to major.


3410-20-30 Intermediate Composition and Conversation (3, 3, 3) Not offered for graduate credit.

3510-20 Aspects of Spanish Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors. Not offered for graduate credit.

3610-20 Survey of Spanish Literature (4, 4) May be taken in place of 3510-20 or 3710-20. Prereq: 2520 or equivalent.

3710-20 Aspects of Spanish American Literature (4, 4) May be taken in place of 3510-20 or 3610-20. Prereq: 2520 or equivalent.

4030 Masterpieces of Spanish Literature in English Translation (3) No foreign language credit.

4040 Spanish Drama in English Translation (3) No foreign language credit.

4050-60-70 Hispano-Arabic Literature and Culture (3, 3, 3)

4101 Foreign Study (1-16) See page

4110-20-30 Spanish Literature of the Golden Age (3, 3, 3) The picaresque novel; Cervantes, the Comedia.

4150 Theatrical Spanish (1-3) Performance in one or more Spanish plays. May be repeated for credit with permission of department. Prereq: 2130 or equivalent and permission of instructor.

4160-70-80 Advanced Conversation (2, 2, 2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: completion of 9 hrs of courses on 3000 level.

4210-20-30 Phonetics and Advanced Grammar (3, 3, 3) Prereq: 2130 or equivalent.

4250 Introduction to Descriptive Linguistics (3) (Same as French, German and Russian 4250.)

4260 Introduction to Historical and Comparative Linguistics (3) (Same as French, German and Russian 4260.)
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4270 Romance Linguistics (3) (Same as French 4270.)

4410 Spanish Civilization (3) Prereq: 2130 or equivalent.

4420-30 Latin American Civilization (3, 3) Prereq: 2130 or equivalent.

4450-60-70 Studies in Modern Spanish Style (3, 3, 3) Prereq: 3410-20-30 or permission of instructor.

4510-20-30 Spanish Literature of Nineteenth Century (3, 3, 3) Prereq: 2130 or equivalent.

4518-28-38 Honors: Readings in Literature (3, 3, 3) For students who have completed 3130, 3330, or equivalent and have at least 3.0 on all university work. No credit for grade less than B.

4710-20-30 Spanish Literature of Twentieth Century (3, 3, 3) 4710—Nondramatic Prose. 4720—Drama. 4730—Lyric Poetry. Prereq: 2130 or equivalent.


GRADUATE

The Master's Program

See Graduate School Catalog for requirements.

5000 Thesis

5011 Techniques in Literary Analysis (2)

5110-20-30 Old Spanish (3, 3, 3)

5151-61-71 Bibliography and Methods of Research (1, 1, 1)

5210-20-30 The Early Spanish Novel (3, 3, 3)

5211-20 Don Quijote (3, 3)

5231 The Exemplary Novels, Peralles y Siglamunda (3)

5250-60 The Generation of '98 (3, 3)

5270 The Contemporary Novel (3)

5310-20-30 Directed Readings (3, 3, 3)

5311-21-31 Special Topics in Spanish or Spanish American Literature (3, 3, 3)

5510-20-30 Spanish Theatre After the Golden Age (3, 3, 3)

5550-60-70 Golden Age Theater (3, 3, 3)

5610 Spanish American Prose to 1900 (3)

5611-21 Spanish American Lyric Poetry (3, 3)

5620-30 The Modern Novel in Spanish America (3, 3, 3)

5631 Spanish American Essay (3)

5650-60 Advanced Syntax and Stylistics (3, 3)

5670 Problems in Romance Linguistics (3)

5810-20-30 Spanish Lyric Poetry (3, 3, 3)

5910 Literary Criticism: Foundations of Romance Criticism (3)

6000 Doctoral Research and Dissertation

6210-20-30 Seminar in Spanish Literature (3, 3, 3)

6310-20-30 Seminar in Latin American Literature (3, 3, 3)

Russian

See Germanic and Slavic Languages.

Russian and East European Studies

See Cultural Studies.

Sociology (915)

Professors: J. A. Black (Head), Ph.D. Iowa; D. J. Champion, Ph.D. Purdue; W. E. Cole (Emeritus), Ph.D. Cornell; L. E. Dotson, Ph.D. Vanderbilt; L. Eberste (Vice Dean of the Arts and Administration), Ph.D. Pennsylvania; W. B. Jones (Emeritus), Ph.D., Vanderbilt; J. B. Knox (Emeritus), Ph.D., Harvard.

Associate Professors: D. M. Bier, Ph.D. Michigan State; D. Clelland, Ph.D. Michigan State; D. W. Hestings, Ph.D. Massachusetts; T. C. Hood, Ph.D. Duke; S. E. Wallace, Ph.D. Minnesota; P. L. Wiipeben, Ph.D. Wisconsin.

Instructors: S. H. Ambler, M.A. Ohio State; D. Harris, M.A. Tennessee; T. J. Wehrlh, M.A. Wisconsin (Madison).

UNDERGRADUATE

Major: Consists of 36 upper-division hours in sociology. Eight lower-division hours in sociology are prerequisite to a major. The minor shall consist of 24 upper-division hours. Eight lower-division hours in sociology are a prerequisite to a minor.

Students who are enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Social Work. Students contemplating entrance into the field of professional social work will have an opportunity to plan their upper division programs to this end. Suggested course offerings for students planning a social work career can be obtained from the Graduate School of Social Work catalog. The address and general information on the School are given on page 43.

Students who contemplate professional training in social work should discuss their upper division programs with the Knoxville campus representatives of the School of Social Work.

American Studies. See Cultural Studies.

Latin American Studies. See Cultural Studies.

1510 General Sociology (4) Social origins, structures, forces, processes, and products.

1520 Sociology of Social Problems (4)

3010 Collective Behavior (3) Processual analysis of such collective phenomena as crowd behavior, social epidemics, fads, fashions, popular crazes, and mass movements; nature of the public, functional analyses of public opinion; problems of democracy as viewed from standpoint of organizing collective action.

3020 Advanced Principles of Sociology (3) Consideration of basic sociological concepts and principles with attention to their empirical validity and research utility.

3030 Political Sociology (4) Sociological analysis of American political system. Attention given to consideration of concept of power, elitist-pluralist controversy, end-of-ideology debate, and related topics.

3120 Social Psychology (3) Social basis of human behavior; socialization; social status and social roles; personality; social adjustment.

3140 Deviance and the Social Order (3) Examination of relations between deviance and social order. Various types of social deviance considered, with focus on their structure, social factors related to process of becoming deviant, and consequences of deviant conduct.

3150 Sociology of Sex Roles (3) Sociological examination of the structure of current American sex roles utilizing various theoretical perspectives, e.g., role theory and bargaining. Development and effects of organized reactions to sex role expectations and social movements such as feminism are considered.

3160 Sociology of Medicine (4) Introduction to sociological approach to study of health and medicine. Emphasis on relationship of demographic characteristics to the prevalence of disease; organization of health care facilities and staff-patient relationships.

3220 The Family (3) Origin and ethnology of the family; background of modern American family; the normal family; social changes and the family; social pathology of the family; reorganization and future of the family system.

3320 Sociology of Mass Communication (3) Sociological dimensions of mass communication and mass media, nature of mass communications organizations as bureaucratic structures, and effects of mass communication on social behavior are examined.

3330 Prejudice and Racism in the United States (3)

4000 Special Topics (3) Student-generated course offered at convenience of Department upon student initiative. Scope of subject matter determined by student and instructor with approval of Department. Elective credit only. Prerequisite determined by Department.

4010 History of Sociological Thought (3) Introductory survey of development of field of sociology to its emergence as a separate discipline. Major emphasis will be on work of leading sociologists to time of Comte.

4020 Sociological Theory (3) Survey and analysis of development of sociological theory from time of Comte to present.

4030 Society and Law (3) General treatment of social origins and consequences of law and legal process. Particular emphasis is placed on problems of law and social change, and on structure and functioning of legal sanctions. Some attention is paid to law and law-like phenomena in formal organizations and primitive societies.

4040 Current Topics in Social Psychology: Theory and Research (3) Problems, topics and issues in current research and theory in social psychology. Particular topics for quarter to be determined by instructor.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4110 Population Problems (3) Demographic factors and social structure; trends in fertility, mortality, population growth, migration, distribution, and composition; population policy.

4120 Topics in Social Psychology (4) (Same as Psychology 4120.)

4130 Sociology of Punishment and Corrections (3) Traces development of correctional movement, develops a critical sociological perspective on contemporary correctional programs, and provides overview of evaluative research in corrections.

4140 Introduction to Social Research (3) Scientific method applied to social phenomena; formulating research hypotheses; techniques for collecting data; measuring social variables; interpreting research findings. Lectures and laboratory.

4150 Elementary Statistical Methods (3) Statistics used in social research, elementary descriptive techniques, measures of central tendency, dispersion; elementary statistical inference; tests of significance for parametric and non-parametric data.

4170 Cross Cultural Studies in Demographic Research (3)

4180 Selected Issues in Methodology (3) Compares and contrasts various sociological approaches to research and analysis.
4310 Criminology (3)
4320 Urban Problems (3) Crises and the urban conscience; urban problems and interventions; housing, urban renewal and neighborhood conservation; the urban poor, the dispossessed and alienated; planning for urban youth; the urban elderly; the social and physical planning process; new trends.
4330 Urban Ecology (3) Form and development of urban areas, internal structure of the city, Metropolitan region and social characteristics of fringe and suburban areas: Sustainability, organization, demographic, geographical, and technological variables: Social processes underlying a real change: Methodology in ecology and interpretation of data relative to spatial distribution of urban phenomena.
4410 Educational Sociology (3) (Same as Education C41 4410)
4510 Urban Society (3) Urban concept; evolution of the city; location of cities, growth of cities in modern times and various causes of urban growth; scientific study of urban population from point of view of social patterning and mobility, and effect of urbanization upon social institutions, social relations, and national economy.
4520 Juvenile Delinquency (3) Critical assessment of nature of the delinquency problem, major sociological causes and their implications for control, and administration of juvenile justice.
4530 Community Organization (3) Structure; function; linkages; change and development and impact of community; community interaction and communication; emphasis on sociological analysis, not on implementation of change.
4540 Social Change (3) Critical review of historical and contemporary social theories and methods employed in study of social change. Attention given to both macro and micro group change.
4550 Social Stratification (3) Study of economic class, prestige, life style, and power hierarchies; causes and consequences of structured social inequality.
4560 Formal Organization (3) Analysis of bureaucratization process, division of labor, delegation of authority, channeled communication under system of rationality.
4610 Sociology of Occupations (3) Introduction to occupations and their relation to the individual and society; technology and occupations; unequal rewards and occupations; social organization and occupations.
4620 Occupations as Organizations (3) Occupations as interest groupings; their impact on work settings and the wider community.
4720 Society and Mental Disorders (3) Role of social factors in causes and development of mental illness, acquiring treatment, and efficacy of therapeutic techniques. Inferences for social policy.
4810 Comparative Study of Race and Intergroup Relations (3) Examination of race and intergroup relations in several selected countries to include the United States. Relations among various ethnic and racial groups within each country, and relations of these groups to social structure of the countries will be analyzed.
4820 American Minority Groups (3) Minority groups and social structure in American society; analysis of intergroup relations with attention given to both past and present relationships of selected groups to broader society.
4830 Sociology of Aging (3) The aged as social minority and subculture in society; role changes in middle age and in old age; significance of increase in proportion of aged in terms of employment, welfare, retirement, and politics.
4930 Social Movements (3) Development, organization, and function of social movements; attention is given to ideology, leadership and organization of political, religious and other types of social movements.
4940 Sociology of Religion (3) Interrelationship of society, culture, and religion.
4950 Family Systems (3) Examination of the family as a unit of interacting individuals.
4970 Senior Seminar (3) Recommended that course be taken during quarter of graduation. For sociology majors only. Prereq: Senior standing.
4980 Seminar on Poverty and Alienation (3) Factors contributing to condition of poverty and social consequences of being poor.
4988 Honors: Sociology (3) Intensive study and research under faculty direction, including writing of senior thesis. Course credit may be split into two quarters. Candidacy is open only to majors who have shown a marked capability for independent study and have grade point averages of at least 3.0 in the College of Liberal Arts and 3.2 in the Department. Prereq: Senior standing.

GRADUATE

Standards for graduate majors and minors are prescribed by the Graduate School and by the Department.

Students who do not have adequate preparation in sociology may be required to take additional courses at the undergraduate level prerequisite to graduate study.

The Master's Program

The general requirements for the Master's degree are given in the Graduate School Catalog. A detailed statement of requirements is given in the Department's graduate manual.

The Doctoral Program

General requirements for the degree of Doctor of Philosophy are described in the Graduate School Catalog. A detailed statement of requirements is given in the Department's graduate manual.

5000 Thesis
5040 Methodological Issues in Social Research (3)
5050 Seminar in Political Sociology (3)
5200 Seminar in Collective Behavior and Social Movements (3)
5210, 5420-30 Social Theory (3, 3, 3)
5220 Social Control (3)
5230 Seminar in Sociology of Medicine (3)
5240 Theory and Research in Human Migration (3)
5250 Selected Topics in Migration Research (3)
5310 Seminar in Methods of Sociological Research (3)
5320-30 Social Statistics (3, 3)
5520 Seminar in Criminological Theory (3)
5530-40 Seminar in Community (3, 3)
5550 Seminar on Community Power (3)
5560-70 Field Research in Deviance (3, 3)
5580 Sociology of Mental Disorders (3)
5590 Social Differentiation and Stratification (3)
5610-20-30 Seminar in Occupations (3, 3, 3)
5640 Social Structure and Personality (3)
5670 Social Organization (3)
5720 Small Group Theory and Research (3)
5730 Seminar in Research Problems in Intergroup Relations (3)
5810 Seminar in Race and Culture (3)
5910 Seminar in Urban and Regional Sociology (3)
5920 Seminar in Social Attitudes (3)
5930 Sociology of Law (3)
5950 Seminar in Population Theory (3)
5960 Demographic Techniques (3)
5970 Sociology of Development and Modernization (3)
6000 Doctoral Research and Dissertation
6040 Experimental Research (3)
6050 Experimental Methods in Sociology and Social Psychology (3)
6070 Problems in Field Research (3)
6080 Research Problems in the Study of Social Groups (3)
6090-6100 Survey Design and Analysis (3, 3)
6120 Selected Topics in Deviance and Law (3)
6130 Seminar in Mass Behavior and Related Topics (3)
6140 Advanced Reading in Sociological Theory (4)
6150 Advanced Reading in Sociological Methods (4)
6160 Advanced Special Social Investigation (4)
6170 Cross-cultural Aspects of Human Fertility (3)
6180 Theory and Method in Human Ecology (3)
6190 Advanced Special Social Investigation (4)
6300 Advanced Studies in Inter-group Relations (3)
6510 Advanced Issues in Criminological Theory (3)
6520 Sociology of Deviance (3)
6550 Advanced Studies in Community (3)
6610-20-30 Seminar in Formal Organization (3, 3, 3)
6710 Seminar in Class and Status (3)
6810 Advanced Studies in Social Psychology (3)
6840-50 Social Change (3, 3)
6940 Advanced Studies in Urban Sociology (3)

Spanish

See Romance Languages.

Speech and Theatre


Associate Professors: T. P. Cooke, Ph.D. Florida State; R. Cochrane; J. F. Fields, M.A. Ohio State; N. W. Henshaw, Ph.D. Pittsburgh.

Assistant Professors: R. S. Ambler, Ph.D. Ohio State; J. E. Buckley, Ph.D. Northwestern; N. C. Cook, M.A. Alabama; M. Custer, M.F.A. Wisconsin; R. C. Field, M.A. Miami (Ohio); S. L. Fish, Ph.D. Oklahoma; R. W. Glenn, Ph.D. Northwestern; A. J. Harris, Ed.D. Tennessee.

UNDERGRADUATE

**Major:** The major, Speech and Theatre, offers three areas of concentration as follows:

**Concentration in Speech:** Eight hours from Speech 1211, 1221, Speech and Theatre 1441 are prerequisite to a concentration which consists of 8 hours from Speech 2021, 2311, or 3551 by permission), 2331, 2351; thirty additional hours in Speech courses numbered 2000 and above, twelve hours of which may be in cognate areas approved by the Department.

**Concentration in Theatre:** Theatre 1520-30 is prerequisite to a concentration which consists of Theatre 2111, 2211-21, 3252-53-54; twenty-four additional hours of Theatre courses numbered 2000 or above, twelve hours of which may be in cognate areas approved by the Department.

**Concentration in General Speech:** Designed for students who anticipate teaching in broadly based high school programs or who desire a wide exposure to the whole discipline of Speech. Prerequisite is a minimum of six hours selected from Audiology and Speech Pathology 3040, Broadcasting 2750, Communications 1110, Speech 1211, 1221, and Theatre 1441, Theatre 1510. The concentration consists of Speech 2311 (or 3551 if such placement); four hours selected from Speech 2021, 2331, 2351; thirty-six additional hours in courses numbered 2000 and above, no more than twenty of which can be in any one department or division (Audiology and Speech Pathology, Broadcasting, Speech, and Theatre, or Theatre). At least twenty-four hours must be earned in courses numbered 2000 and above.

In each program at least twenty hours must be earned in courses numbered 3000 and above.

**Minors:** Two minors are offered, Speech and Theatre. Speech 1211-21 is prerequisite to a minor in Speech which consists of 24 hours in Speech courses numbered above 2000. Theatre 1520-30 is prerequisite to a minor in Theatre which consists of 24 hours in Theatre courses numbered above 2000.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

**Certification for Teaching Speech or Speech and English.** Consult Certification Clerk, Room 212 Claxton Education Building.

GRADUATE

The Department of Speech and Theatre offers the Master of Arts (M.A.) and Master of Arts in College Teaching (M.A.C.T.) degrees. Requirements for these degrees are described in the Graduate School Catalog.

**Speech (494)**

UNDERGRADUATE

1211 Introduction to Rhetoric and Public Address (4) Major theories of communication from Plato to present; methods for describing and evaluating public address.

1221 Introduction to Speech Communication (4) Fundamental theories and practices with particular reference to interpersonal communication, persuasion, semantics, psycholinguistics; legal and ethical dimensions of communication.

2021 Voice and Diction (4) Voice production; attention to individual speech problems.

2311 Public Speaking (4) Basic principles of speech preparation and delivery.

2331 Argumentation and Debate (4) Recommended:

2341 Deliberation in Assemblies (4) Various techniques for coming to collective decisions; parliamentary procedure.

2351 Interpersonal Communication (4) Communications theory and its application to informal, face-to-face situations.

2410-20-30 Intercollegiate Forensics (1, 1, 1) Supervised work in tournament debate. Prereq: Permission of instructor.

3011 Persuasion (4) Persuasive discourse: its psychological, sociological, and cultural dimensions.

3021 Group Communication (4) Communication theory in its application to small groups, especially discussion groups; Communication barriers, non-verbal communication, verbal communication.

3410-20-30 Intercollegiate Forensics (1, 1, 1) Continuation of 2410-20-30. Prereq: Permission of instructor.

3541 Rhetorical Theory and Criticism (4) Survey of Western rhetorical theory; contemporary approaches to criticism of public address. Recommended: 1211.

3551 Advanced Public Speaking (4) Speech forms; principles and practice of speech composition.

422 Advanced Argumentation and Debate (4) Prereq: 2331 or permission of instructor.

461 Quantitative Research Methods in Speech Communication (4) Designing experiments; planning field studies; using statistical analysis.

4551 Southern Oratory (4) Historical and critical study of public address in the South.

4560 Rhetoric of the Women's Rights Movement (4) Historical and critical study of public address in campaign for women's rights from the 1830's to the present.

4571 British Oratory (4) Historical and critical study of British public address.

4582 Public Discussion of Race (4) History and criticism of racial advocacy in America.

4591 Persuasive Uses of Imaginative Literature (4) Topics in social and political uses of novels, plays, and poems.

4811 Advanced Phonetics (4) Phonetic aspects of contemporary dialects of the English language. Prereq: Permission of instructor.


4999 Colloquium in Speech Communication (1) May be repeated for credit.

GRADUATE

5140 Communications Theory (3)

5210 Studies in Group and Interpersonal Communications (3)

5220 Quantitative Projects in Speech Communications (3)

5430 Studies in Tennessee Oratory (3)

5440 Problems in Industrial Communications (3)

5450 Studies in Collection and Use of Recorded Discourse (3)

5550-60-70 Studies in Persuasion (3, 3, 3)

5750-60-70 Studies in Rhetoric (3, 3, 3)

**Theatre (976)**

UNDERGRADUATE

1510 Introduction to Theatre (4) Theatre as escape, manipulation and technique. Non-technical introductory course for general student, not available for credit to theatre majors.

1520-30 Fundamentals of Play Production (4, 4) 1520—Play analysis and arts of performance (acting and directing); 1530—Arts of performance and physical production.

2111-21 Acting (4, 4) Readings, Improvisations, and scene study; voice and movement for the stage; basic rehearsal techniques. Prereq: permission of instructor for 2111.

2211-21 Stagecraft (4, 4) 2211—Techniques of scenery construction, 2221—Fundamental methods of stage lighting. Crew assignments on major productions.

2311 Basic Stage Costuming (4) Costume history and its application to the stage; basic techniques in costume construction.

3111-22 Advanced Acting (4, 4) Prereq: permission of instructor.

3151-52 Major Productions (4, 4) Supervised work on departmental productions. Available for credit only to theatre majors or with consent of Department. Prereq: permission of instructor.

3153 Outdoor Repertory Productions (4) Supervised work on productions at Hunter Hills Theatre. Available only to members of summer company by permission of instructor.

3221-22 Introduction to Scene Design (4, 4) Descriptive drawing as an approach to three-dimensional design; theatrical graphic standards; problems in stage design with reference to lighting, movement, scale, and style. Prereq: 2211-21 or permission of instructor. Must be taken in sequence.


3262-63 History of the American Theatre (4, 4) Development of the theatre as social institution in American life. 3262—From its beginnings to 1900. 3263—From 1900 to present.

3281-22 Introduction to Lighting Design (4, 4) Mechanics of stage lighting; elementary theory; problems in basic lighting practice. Must be taken in sequence. Prereq: 2211-21 and permission of instructor.

3451-52 Play Directing (4, 4) Must be taken in sequence. Prereq: 2211.

3511-12 Introduction to Costume Design (4, 4) Costume as expression of character on stage; the application of costume history to specific design projects. Prereq: 2231 or permission of instructor.

4133-34 Special Problems in Acting (4, 4) Advanced exercises in voice and movement; preparation of major role under performance conditions. Prereq: 3111-22 and permission of instructor.

4151-52 Major Productions (4, 4) Continuation of 3151-52. Available for credit only to theatre majors. Prereq: permission of instructor.

4153 Outdoor Repertory Productions (4) Continuation of 3153. Available only to members of summer company by permission of instructor.

4241-42 Advanced Scene Design (4, 4) Play interpretation through scenic means; setting as environment for dramatic action. Must be taken in sequence. Prereq: 3221-22 and permission of instructor.
University Studies (984)

(Non-Departmental)

University Studies deal with important contemporary topics which are sufficiently comprehensive to require study and attention of students and faculty from more than one college. They are open to all qualified members of the university community.

3010 Technology and Society (3) Interdisciplinary lectures and discussions concerning science and technology, their interaction with contemporary social and political institutions and their impact upon human society. May be repeated for credit to a maximum of 9 hours.

4100 Energy Needs and Our Environment (3) Problems of present and projected energy resources and demands, economic, behavioral, legal, technical, and environmental opportunities and constraints; regional impacts of energy production and consumption. Topical focus will change from quarter to quarter. May be repeated with approval of instructor.

Women's Studies

See Cultural Studies.

Zoology (995)

Professors:
J. C. Daniel, Jr. (Head), Ph.D. Colorado; D. L. Bunding, II, Ph.D. Oklahoma State; G. G. Rallison, Ph.D. Pennsylvania; A. C. Cole, Ph.D. Ohio State; C. C. Csongor, M.D. Michigan; R. C. Fraser, Ph.D. Minnesota; N. Gangolli, Ph.D. Wisconsin; B. Hochman, Ph.D. California (Berkeley); J. C. Howell, Ph.D. Cornell; A. W. Kistler, Ph.D. Virginia; C. M. Ketchel, Ph.D. Harvard; J. N. Liles, Ph.D. Ohio State; C. A. Shivers, Ph.D. Michigan State; J. T. Tanner, Ph.D. Cornell; S. R. Tipton (Emeritus), Ph.D. Duke.

Associate Professors:
R. M. Bagby, Ph.D. Illinois; K. D. Burnham, Ph.D. Iowa; D. A. Ehrl, Ph.D. Minnesota; K. W. Jeon, Ph.D. London (England); J. R. Kennedy, Ph.D. Iowa; H. Welch, Ph.D. Florida; M. C. Whiteside, Ph.D. Indiana; G. L. Whiston, Ph.D. Iowa.

Assistant Professors:
B. B. Coulson, Ph.D. Illinois; D. J. Fox, Ph.D. Johns Hopkins; M. A. Hulke, Ph.D. Kansas State; A. M. Jungreis, Ph.D. Minnesota; J. A. McCabe, Ph.D. California (Davis); G. E. Schleger, Ph.D. Wisconsin; G. L. Vaughan, Ph.D. Duke.

Alumni Distinguished Service Professor.

UNDERGRADUATE

Prerequisites to upper division courses:
Biology 1210-20-30 is a prerequisite for all upper division courses, with the exception of 3090 and 4940. Additional prerequisites are included with course descriptions. Courses numbered in the 4000's are no more advanced than those in the 3000's as may be indicated by prerequisites.

Major: Consists of Biology 2110, 2120, 2130, 18 hours of upper-division Zoology courses (except 3010-20-30), and 12 hours of Chemistry at the 2000-level or above. Prerequisites to this major are: Biology 1210-20-30 or Zoology 1110-20-30 or 1816-28

Zoology 1110-20-30 was discontinued in 1972, but if previously taken, may count toward graduation. Students with 2 years of high school biology and satisfactory ACT scores may enroll by permission of the department, on the basis of the freshman year sequence and enroll Biology 2110, 2120, 2130 directly (see course listing under Biology).
3071 Immunology (3) (Same as Microbiology 3071.)
3080 Principles of Animal Physiology (5) Physiology of
organ systems of animals including man. Prereq: 
Biological Chemistry 3221, Physics 2210-
20-30 recommended. 3 hrs and 1 lab.
3090 Biology and Human Affairs (3) (Same as 
Botany 3090.)
3110 General Entomology (5) Introduction to in-
sects; basic structure, development, behavior;
classification of insect orders and representative
families; interpretation and use of keys. Prereq: 
Biology 2130, or permission of instructor. 3 hrs and 2
labs.
3150 Invertebrate Zoology (5) Biology of in-
vertebrates (except insects) with emphasis on
ecology and behavior. Prereq: Biology 2130. 3 hrs and 2
labs.
3220 Physiology of Reproduction (3) (Same as 
Animal Science 3220.)
3320 Histology (4) Study of animal tissues. Prereq: 
Biology 2120. 3 hrs staff members. Prereq: Junior or
senior standing and prior permission of
instructor.
4110-20-30 Undergraduate Research Participation 
(2, 2, 2) Experience in active research projects under
supervision of faculty members. Prereq: Junior
or senior standing and prior permission of
instructor.
4140 Practicum in Zoology (1-3) Participation in a
practicum assignment with emphasis on field
methods. Prereq: permission of instructor
and completion of prerequisite courses. 1-3
credits.
4160 Mammalogy (4) Classification, evolution, distinc-
tion, reproduction, populations, behavior,
2 hrs and 2 lab or field periods. Prereq: 1100.
4200 Ichthyology (5) Classification, collection and
identification; distribution; life histories, and
economic importance of fishes. Prereq: Biology
2130, or permission of instructor. 2 hrs and 2 lab
or field periods. (Not open to students with credit for
3220.)
4210 Cell Physiology (5) Development of modern
concepts in cell physiology from point of view of
intercellular and intracellular communication; kinetics and
integration of cellular activities. Prereq: Cell Biology or
any Physiology, and Organic Chemistry.
Biology 3222, 3223 recommended. 5 lectures and 1 lab.
4240 Animal Ecology (4) Environmental factors
determining population, reproduction, numbers of animals,
intra-specific relations; problems and methods.
Prereq: Biology 2130. 3 hrs and 2 labs.
4250 Comparative Animal Physiology I (3) Environ-
mental physiology. Survey of physiological
mechanisms and their relation to ability of animals to
survive in diverse physical environments. Prereq: 
3090. 3 hours.
4259 Comparative Animal Physiology Laboratory, I
(1) Prereq: 3080 and permission of instructor. 
Coreq: 4250.
4260 Comparative Animal Physiology, II (3)
Sensory, effector and integrative physiology. Prereq: 
3090.
4269 Comparative Animal Physiology Laboratory, II 
(1) Prereq: 3080 and permission of instructor.
Coreq: 4260.
4280 Comparative Endocrinology (5) Comparative 
analysis of the physiology and morphology of
dermocrine glands in vertebrates and invertebrates.
Their role and interaction in maintenance of
the organism. Prereq: 3080 or 3260. 3 hrs and 1
(3 hr) lab.
4290 Herpetology (4) Classification, distribution, life
histories, collection and identification of amphibians
and reptiles, primarily of local species. 2 hrs and 2
lab or field periods. (Not open to students with credit
for 3210.)
4300 Ornithology (4) Morphology, physiology, behav-
ior, reproduction, populations, evolution, field
identification. 2 hrs and 2 labs or field periods. (Not
open to students with credit in 3230.)
4310 Animal Cytology (4) Structure and function of
cells and their components; emphasis on mitosis
and meiosis. 2 hrs and 2 labs. Recommended: 
Biology 2110.
4320 Microtechnique (4) 3320 recommended. 2 hrs
and 2 labs.
4369 General Genetics Laboratory (2) Mainly
Drosophila experiments designed to illustrate basic
principles of inheritance. Prereq: Biology 2110. 2
labs.
4380 Organic Evolution (3) Modern concepts of
animal evolution. Prereq: 2110. 2 labs.
4390 Human Genetics (3) Principles and problems
4410 General Parasitology (4) Morphology, tax-
onomy, and ecology of parasitic worms and
protozoa, with emphasis on host-parasite
relationships. 3 hrs and 1 lab. Prereq: Biology 2130
or permission of instructor.
4430 Medical Entomology (4) Distinctive morpho-
logical features, distribution, life histories, and
control of arthropods that parasitize man or
serve as vectors of human pathogens. Prereq: 
Agriculture Biology 3210 or Biology 2130. (Not
open to students with credit for 3430.)
4450 Protozoology (4) Morphology, taxonomy, and
physiology of protozoa in relation to fundamental
biological concepts. Recommended: Biology 2120. 2
hrs and 2 labs.
4510 Freshwater Fishery Biology (4) (Same as
Agriculture Biology 4510.)
4610-20 Comparative Animal Pathology (2, 2)
Abnormal morphological changes and their
causes. 4620—Cell and tissue changes. 4620—Organ,
organ system and organ systems. Recommended: 
3080, 3320, 3060.
4619-20 Comparative Animal Pathology Laboratory
(2, 2) 4619—Cell and tissue changes. 4620—Organ,
organ system, and organ systems changes. Coreq: 4610-
20.
4680-70 Limnology (4, 4) 4680—Effects of origin,
age, and location of lakes on their physical and
chemical nature. 4780—Lake communities,
productivity and pollution. Prereq: Chemistry 1110
20-30 and Biology 2130; Botany 1110-20 and
Physics 1210-30 recommended. 3 hrs and 1 lab
(4680). Must be taken in sequence, except with permission of instructor.
4700 Arachnology (4) Biology of spiders, mites,
scorpions, and relatives. Prereq: 3110 or 3150. 2 hrs
and 2 labs.
4720 Comparative Animal Behavior (4) Methods
and principles. (Same as Psychology 4720.)
4729 Comparative Animal Behavior Laboratory (4)
Laboratory and field studies. Coreq: 4720 (Same as
Psychology 4729.)
4810-20-30 Insect Morphology and Taxonomy (4, 4)
4810—Internal morphology of both generalized
and specialized forms. 4820—Taxonomy of major
orders. 4830—Taxonomy of minor orders and
immature forms. Prereq for 4820-30: 3110, or
permission of instructor. 2 hrs and 2 labs.
4840 Physiology of Exercise (4) Functions of body
in muscular work; physiological aspects of fatigue,
training, and physical fitness. Prereq: 2920-30, or
3080. 3 hrs and 1 lab. (Not open to students with
credit for 3340.)
School of Nursing

Sylvia E. Hart, Dean

The School of Nursing at The University of Tennessee, Knoxville, was established in July, 1971, in response to a long recognized and well-established need for nurses prepared at the baccalaureate level and as a part of a state-wide comprehensive plan approved for The University of Tennessee system by the Board of Trustees and for the State by the Tennessee Higher Education Commission.

The program offered by the School of Nursing is fully accredited by the National League for Nursing. It combines the unique resources of the University with those of several cooperating health agencies in a manner which enables both faculty and students to become aware of and responsive to an evolving dynamic culture, rapid scientific and technological advances and changing concepts of health, of human beings and of society.

The baccalaureate nursing program has as its central focus and frame of reference human being, society and health. It is based on the belief that nursing has equal concern for the prevention of illness, the promotion of health, and the care of the sick.

General education courses, nursing courses and electives are organized in a manner designed to promote creative thinking and innovative approaches at both the theoretical and practical levels. General education courses are incorporated into the nursing curriculum at both lower and upper division levels. Certain aspects of general education, primarily in the natural and behavioral sciences, are prerequisite to any courses in the nursing major. Other supporting courses are taken concurrently with nursing courses.

Since nursing is a humanistic science and an art, nursing courses provide theoretical content which draws heavily from the theories and principles of related sciences and disciplines. This content is organized, integrated and synthesized in a manner which promotes a comprehensive understanding of the life process from conception through senescence. In nursing practice, this knowledge and understanding is combined with intellectual judgments, practical skills and human compassion. Opportunities to develop this kind of expertise in a variety of settings and situations are integral components of all nursing courses.

A broad base of general education, a thorough study of human behavior, emphasis on health maintenance and promotion and a strong family and community orientation are essential components of baccalaureate education in nursing. It is these characteristics which differentiate it from other types of basic nursing education.

Because of the expanding role of the professional nurse, the increasing complexity of health care delivery and the ever changing health needs of society, the goals of the program are to prepare graduates who are able to:

1. Assume beginning leadership positions in nursing in a variety of settings.
2. Work collaboratively with other health professionals.
3. Function as socially conscious and contributing citizens.
4. Pursue advanced education on either a formal or an informal basis.

GENERAL REQUIREMENTS:

In order to obtain a Bachelor of Science Degree in Nursing, 12 quarters of full-time study or their equivalent are required. Students may enroll in nursing courses following successful completion of 90 quarter hour credits in prescribed general education courses. These courses may be taken at The University of Tennessee or at any accredited junior or senior college or community college. One hundred eighty-nine quarter hour credits must be successfully completed in order to be awarded the Bachelor of Science in Nursing Degree.

GRADING POLICY:

The Satisfactory- No Credit option is not permitted for any nursing course.

The minimum acceptable grade for any required Nursing course is a "C." Any course in which a grade of "D" or "F" is achieved may be repeated once. If a grade of "D" or "F" is achieved on the second attempt, the student will be required to withdraw from the program.

Any student who achieves a grade of "D" or "F" for more than two clinical nursing courses will be required to withdraw from the program even if the courses in which the grades of "D" or "F" were achieved have been repeated and a grade of "C" or better has been removed from the "D" or "F." If a student receives an "Incomplete" in a required nursing course the "Incomplete" must be removed before the student may enroll in any other required nursing courses.

If a student's clinical laboratory performance for any nursing course is deemed unsatisfactory, the grade for that course will be an "F" regardless of any grades related to the theoretical component of the course. If the unsatisfactory clinical performance is characterized by dangerous, inappropriate or irresponsible behavior, behavior which actually or potentially places the patient's or family's welfare in jeopardy, the student will be required to withdraw from the program.

ADMISSION PROCEDURE

1) Nursing students must achieve a course grade of "C" or better in all required lower division courses, exclusive of electives.
2) When the student has completed all
required lower division courses, having met the above stated grade requirement, he or she must submit a petition for admission to upper division courses to the Progression Committee in the School of Nursing. The Progression Committee will review the record of each student who has submitted a petition in order to verify that the student has successfully completed all lower division requirements. The School of Nursing will then notify, in writing, those students who are eligible to begin upper division nursing courses.

Student petitions for admission to upper division courses must be submitted to the Progression Committee during the Spring Quarter which immediately precedes the Fall Quarter in which they expect to enter the upper division. The deadline for submitting a petition is the drop deadline date for each Spring Quarter.

3) Students who expect to enroll in The University of Tennessee, Knoxville School of Nursing, once they have completed lower division requirements elsewhere, should contact the Student Advising Coordinator at the UTK School of Nursing as soon as they begin their lower division courses. Transfer students who believe they have met lower division requirements should submit a petition to begin upper division courses as soon as they are admitted to the University.

4) Transfer students who have been accepted by the University must complete all course requirements identified in the School of Nursing curriculum. Transcripts will be evaluated on an individual basis. Students are free to take proficiency or challenge examinations in order to determine whether it is necessary for them to enroll in a course or whether they have met those course requirements in another way.

5) Registered nurses seeking a baccalaureate degree in nursing must also apply for admission to the University and must be accepted on the same basis as others. They must complete all prerequisites and all required courses identified in the nursing curriculum. They may also take challenge or proficiency examinations in required courses whenever these are appropriate and available.

**COURSE LOAD**

The maximum credit hours per quarter allowed for any student without special permission is 18.

**BACHELOR OF SCIENCE IN NURSING CURRICULUM**

The following curriculum leads to the Bachelor of Science in Nursing Degree. A minimum of 189 quarter hours of credit is required.

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<thead>
<tr>
<th>Freshman</th>
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<tr>
<td>Chemistry 1510-20-30</td>
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<td>English 1510-20</td>
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**TOTAL: 189 hours**

*At least 18 of the elective hours must be in Humanities courses.*

**Faculty**

Professor: S. E. Hart (Dean), Ph.D. New York.

Associate Professors: K. J. Kant, Ph.D. Illinois; B. M. Reid, M.S.N. Columbia; J. A. Thompson, M.S.N. Indiana.

Assistant Professors: S. S. Blowers, M.Ed. Rochester; M. T. Boynton, M.S.N. Emory; P. A. Brown, M.S.N. Indiana; E. S. Caro, M.S.N. N. Carolina; K. P. Cotton, M.S.N. S.U.N.Y. Buffalo; D. H. Goodfellow, M.S.N. S.U.N.Y. Buffalo; V. M. Kraemer, M.S. Colorado; B. W. Lowe, M.S. Tennessee; J. N. Molding, M.S.N. Emory; D. R. Odle, M.S.N. Emory; K. L. Palmer, M.S. VCU; D. A. Pierce, M.P.H. Tennessee; E. J. Rice, M.S.N. Emory; B. J. Riley, M.S. Ohio State; S. L. Sugg, M.S.N. Pennsylvania; J. W. Wagner, M.S.N. Yale.

**3000 History and Philosophy of Nursing (3)** Survey of the history of the health care delivery and nursing practice. Examination of various philosophical systems which have had an impact upon nursing education and nursing practice.

**3010 Nursing Process (6)** Theory and related laboratory experiences necessary for the development of basic nursing skills. Includes exploration of the expanding role of the professional nurse, the life process in man, the health-illness continuum, determinants and indices of health, and the principles underlying the more common skills associated with nursing practice. 3 hrs, 1 lab. For nursing majors only.


**3150 Basic Nursing and Family Health (6)** Nursing needs of families in childbearing and childrearing phases of development. Principles of human growth and development and family dynamics. Laboratory experiences in a variety of clinical, community, and home settings with focus on family health assessment with opportunity for planning, implementing and evaluating nursing care for women in various stages of uncomplicated pregnancy and for their newborn infants. 3 hrs, 3 lab. PreReq: 3010, Coreq: 3110. For nursing majors only.

**3210 Basic Nursing of the Acutely Ill Child and Adult (8)** Theory and clinical laboratory experiences related to nursing care of patients whose health problems require hospitalization. Physiological and behavioral deviations which underlie or are associated with the more common, relatively uncomplicated acute illnesses of children and adults. Clinical laboratory experiences with opportunity to apply knowledge and skill to care of patients in acute care settings as well as to provision of continuity of care for those patients and their families. 3 hrs, 3 lab. PreReq: 3010, 3110. For nursing majors only.

**3330 Nursing in Psychosocial Disturbances (6)** Nursing needs of patients and families whose primary health problems are psychosocial or behavioral. Equal emphasis on prevention, promotion and rehabilitation. Principles from the behavioral and developmental sciences are reinforced. Expansion of the role in the hospital and community setting and opportunities for the application of these principles to the care of individuals and families with actual or potential behavioral health problems. 3 hrs, 3 lab. PreReq: 3010, 3110. For nursing majors only.

**4220 Advanced Nursing of the Acutely Ill Child and Adult (8)** The more serious and complicated health problems requiring hospitalization. Analysis of physiological and behavioral deviations which underlie or are associated with more complex and critical illnesses. Laboratory experiences with opportunity to apply increasing knowledge and skill to care of acutely ill patient with more complex
health problems as well as to provision of continuity of care for these patients and their families. 3 hrs, 3 lab. Prereq: All 3000-level nursing courses or their equivalent. For nursing majors only.

4420 Nursing Patients with Long Term Health Needs (8) Nursing needs of patients with long term, congenital, developmental, or other chronic health problems. Focus on development of knowledge and skills needed to achieve total patient and family involvement in rehabilitative process. 3 hrs, 3 lab. Prereq: All 3000-level nursing courses or their equivalent. For nursing majors only.

4440 Scientific Inquiry in Nursing (3) Introduction to language of research, types of research designs, methodological approaches, sampling, data analysis and significance of findings. Evaluation of existing and ongoing nursing research studies. Prereq: Psychology 3150, senior standing. For nursing majors only.

4560 Nursing in the Community (6) Content and laboratory experiences with focus on health patterns, needs and problems of the community. Particular emphasis on the health assessment of small and large groups, comparison of variations in health needs for families and communities, involvement in preventive and promotive community health education programs and evaluation of community health programs at the national, state and local levels. 3 hrs, 3 lab. Prereq: All 3000-level nursing courses or their equivalent. For nursing majors only.

4680 Professional Nursing Seminar (3) Critical examination of legislative, ethical, social and educational issues and trends which have immediate or long-range implications for professional nursing practice. Prereq: Senior standing. For nursing majors only.

4760 Management of Health Care (4) Theories of administration, supervision, organization, management, and leadership as they apply to the delivery of health care services. Emphasis on role of the nurse in health care management and delivery. Laboratory experiences to develop skills necessary to function as an effective member of the health team. 2 hrs, 1 lab. Prereq: Senior standing. For nursing majors only.

4770 Comprehensive Health Assessment (4) Principles and theories underlying health screening of children and adults, including health history, interviewing and physical examination. Practicum included. 2 hrs and 2 labs. (4 hrs. each). Prereq: all 3000 level nursing courses or their equivalent or permission of instructor.

4880 Independent Study in Nursing (3) In-depth study of some aspect of nursing in which student has developed special interest. Study is pursued independently, utilizing guidelines developed by the student with appropriate faculty guidance, supervision and evaluation. Prereq: Senior standing. For nursing majors only.
Independent Departments

Department of Air Force Aerospace Studies (094)

Air Force ROTC Program

Professor of Air Force Aerospace Studies: 
Colonel S. C. Back (Head) M.S. George Washington.

Assistant Professors:
Major G. D. Johnson, M.B.A. George Washington; 
Major B. P. Lilly, M.A. Middle Tennessee State; 
Capt. J. D. Howell, Sr., M.B.A. Eastern New Mexico; 
Capt. W. L. Pendergrass, M.B.A. Tennessee; Capt. W. C. Shearer, M.A. Newark State.

GENERAL INFORMATION

Any student may enroll voluntarily in Air Force ROTC at the same time as registration for other undergraduate courses. There is no active duty obligation resulting from enrollment in the first two years of AFROTC classes unless the student is on AFROTC scholarship.

AIR FORCE ROTC SCHOLARSHIP PROGRAM

Scholarships are available to qualified students who enroll in the four-year cadet program. These scholarships cover full tuition, all fees, and reimbursement for all required books. In addition, cadets are paid $100.00 per month during the entire period of the scholarship. Scholarships are awarded to cadets on a competitive basis for two through four years at all levels of the Air Force ROTC program, including college freshmen, sophomores, and juniors. High school seniors should contact their guidance counselors to apply for four-year scholarships not later than 31 December each year. Applicants for two- or three-year scholarships should contact the Professor of Air Force Aerospace Studies early in their freshman year on campus.

PURPOSE OF THE AIR FORCE ROTC

The Air Force ROTC Program is designed to qualify for commissions those college men and women who desire to serve in the United States Air Force. The program provides education that will develop skills and attitudes vital to the professional Air Force officer. Upon graduation from the University and the Department of Air Force Aerospace Studies, students are commissioned second lieutenants in the United States Air Force Reserve. Opportunities exist throughout the initial period of active duty for the graduate to receive a Regular Commission in the Air Force and to pursue commissioned service as a career.

UNIVERSITY CREDITS

The following credits are granted for Air Force Aerospace Studies work and are creditable toward a degree in some colleges. See respective PAS for further information.

- Aerospace Studies 1000 series (Freshman) — 6 quarter hours per year
- Aerospace Studies 2000 series (Sophomore) — 6 quarter hours per year
- Aerospace Studies 3000 series (Junior) — 9 quarter hours per year
- Flight Instruction Ground School — 3 quarter hours
- Aerospace Studies 4000 series (Senior) — 9 quarter hours per year

COURSES AVAILABLE

The first two years (freshmen and sophomores) of the Air Force Curriculum are known as the General Military Course. The last two years of the curriculum (junior and senior) are known as the Professional Officer Course.

- Flight training is offered free of charge to qualified male pilot applicants who are senior AFROTC cadets. The cadet receives twenty-five hours of flight instruction. University credit is granted for the Ground School portion of the Flight Instruction Program.

- Field Training is offered at Air Force bases across the country. Normally, this is the cadet's first extended exposure to an Air Force environment. It is here that the cadet receives junior officer and leadership development training. Also at this time, the Air Force has an opportunity to personally evaluate each cadet as a potential member of its officer corps. Four-year ROTC members are required to complete a four-week session and two-year applicants attend a six-week session, adding two intensive weeks of academics comparable to the academics taught in Aerospace Studies 1000 and 2000 courses. Credit is granted for this two-week period; provided the student registers for credit, attends five one-hour pretraining sessions before attending Field Training, and attends two one-hour seminars conducted during the Fall Quarter following completion of Field Training.

ELIGIBILITY FOR THE PROFESSIONAL OFFICER COURSE (FOR PURPOSE OF EARNING A COMMISSION)

(Junior and Senior Years)

All cadets enrolled in the Professional Officer Course (junior and senior years) of the Air Force ROTC (for purpose of earning a commission) must:

- Have either completed the General Military Course (freshman and sophomore years), or the off-campus, six-week Field Training; or have the required amount of prior military service.

- Have two academic years of college remaining (either graduate or undergraduate).

- Execute a written agreement with the Government to complete the program, contingent upon remaining qualified and in school; and to attend the off-campus, four-week Field Training between the sophomore and junior years and to accept an Air Force Reserve Commission, if tendered.

- Be selected by the Professor of Air Force Aerospace Studies and the President of the University or his duly authorized representative.

- Meet certain specified age, mental, and physical requirements.

EXEMPTIONS FOR PREVIOUS ROTC, PREVIOUS ACTIVE MILITARY SERVICE, OR CERTAIN CIVIL AIR PATROL AWARDS

A student may request exemption from portions of the General Military Course on the
following bases: (1) previous honorable active military service in any branch of the Armed Services; (2) at least two years of high school ROTC; or (3) holds certain awards in the Civil Air Patrol. Each will be on an individual basis, and no University credit is given for those hours or portions of the General Military Course exempted.

PAY AND ENTITLEMENTS
All cadets enrolled in AFROTC are furnished texts and uniforms by the Government through the Air Force Material Command, University of Tennessee. Enrollees are required to deposit $35.00 as security to the University against loss or damage of uniforms or equipment for which the University is accountable to the Government. At the completion of AFROTC, or when the student withdraws from the program, with the exception of nominal fee covering the cost of shoes, the deposit is returned to the student provided he obtains a proper clearance for uniforms and equipment. Professional Officer Course cadets receive a subsistence allowance of $100.00 per month, or the equivalent, to last 20 months. In addition they are paid mileage to and from Field Training, plus pay commensurate with active duty rates for the six-week session. A four-week Field Training is normally required between the sophomore and junior years for those students enrolled in the four-year program. A six-week camp is required for two-year applicants.

ACTIVE DUTY COMMITMENTS
Commissioned graduates will be required to serve five years active duty with the Air Force after completion of flying or navigator training. Nonflying officers will be required to serve four years of active duty.

CONDUCT, ORGANIZATION, AND ADMINISTRATION
Air Force Regulations provide for the following: "For the effective conduct of instruction at civilian colleges and universities, subject to coordination with general institutional regulations and arrangements and the approval of the head of the institution, the Professor of Air Force Aerospace Studies will be empowered to draft the rules and orders relating to the organization, control, and training of the members of the AFROTC and the appointment, promotion, and reduction of Cadet Officers and Cadet Non-Commissioned Officers.

The Department of Air Force Aerospace Studies sponsors the following organizations: (1) Arnold Air Society, a national honor society for outstanding AFROTC cadets. Named in honor of General "Hap" Arnold, (2) Angle Flight. National auxiliary of the Arnold Air Society. Composed of selected cadets who are interested in enhancing the espirit, morale, and appearance of the Air Force ROTC programs. (3) Arnold Team. Provides interested cadets an opportunity to serve as honor guard for all official Cadet Corps functions. (4) Air Command Flight. Provides opportunity for additional military training for those cadets volunteering to participate.

Curriculum
1210-20-30 Air Force Aerospace Studies (2, 2, 2) United States Military Forces in the contemporary world; history, function, and employment of U.S. Military and Defense systems. 1 hr and 1 lab (Corps Training).
1240 Air Force Aerospace Studies (3) United States Military Forces in the contemporary world; history, function and employment of U.S. Military and Defense Systems. Corps peuxables student to fulfill all freshman Air Force Aerospace Studies and requirements within one academic quarter. 3 hrs and 3 hrs of lab (Corps Training).
2210-20-30 Air Force Aerospace Studies (2, 2, 2) Survey of development of Air Power; nature of military conflict; air power as an element of national security; concepts and doctrine governing employment of air power; changing mission of defense establishment; employment of air power in military, non-military, and strategic operations. 1 hr and 1 lab (Corps Training).
2235 Air Force Aerospace Studies (3) Department of Defense and role of military in national policies; nature and principles of war; assessment of military policies and strategies of Soviet Union and China. Role of alliances in U.S. defense policies. Course fulfills all sophomore Air Force Aerospace Studies requirements within one academic quarter. 3 hrs and 3 hrs of lab (Corps Training).
2240 Field Training (Academic Program) (1-4) Role of United States Military Forces in contemporary world, with particular attention to United States Air Force, its organization and mission, various components of the U.S. military power, organization of America's defense structure, policies of major powers, and elements and processes in making of defense policy. Conducted at Field Training bases in the country. Approximately 60 class hrs.
3210-20-30 Air Force Aerospace Studies (3, 3, 3) The role and function of the professional officer in a democratic society; socialization process, public attitudes, and value orientations associated with professional military service; requirements for maintaining national security forces; decision-making processes of Department of Defense; political, economic, and social constraints affecting formulation of U.S. defense policy; impact of technological and international developments upon strategic preparedness; emphasis on developing communication and writing skills.
3240 Flight Instruction Ground School (Private Pilot) (3) Part of Air Force ROTC Flight Instruction Program and is designed to prepare student to operate safely as a pilot. A secondary objective is to enable student to pass FAA private pilot's written examination. Thirty quarter hrs of classroom instruction. Seven subject areas covered are: Preflight Facts—Acquaints student with factors affecting flight; Meteorology—helps student in learning the weather phenomena affecting flight; weather information, and services available to pilots; Flight Computer, Navigation, and Radio Navigation—Covers the requirements to plan a cross-country, use of appropriate maps, charts, logs and navigational aids; Airman's Informational Manual and Federal Air Regulations—Covers rules and regulations that must be known to operate safely and legally.
3250 Flight Instruction Ground School (Instrument) (3) Modified Sanderson Ground School course consisting of audiovisual aids in instruction. Discussion of Federal Aviation Agency (FAA) Instrument Flight Rules Exams and emphasizes safety in operation of small aircraft. Course is based on the Cessna-150 aircraft; however, it can be applied to other aircraft. Provides necessary instruction for Federal Aviation Agency (FAA) written examination for instrument pilot's license. Concurrent flight training is not necessary, but is advisable, and can be arranged through local flight instructors or certified flight instructors.
3255 Commercial Pilot (3) Audio and visual presentation, supplemented with discussion of following topics: Advanced Flight Computer; Advanced Meterology; Advanced VFR Navigation and Radio; Commercial Pilot Federal Aviation Regulations and Examinations; Alcohol, Drugs, and Flight Effects; Oxygen, Altitude, and the Body; Weight and Balance, and Oxygen Systems. Course provides necessary instruction to take Federal Aviation Agency (FAA) written examination for Commercial Pilot's License.
4210-20-30 Air Force Aerospace Studies (3, 3, 3) Air Force leadership at junior officer level, including theoretical, professional, and legal aspects, with attention to command and control, military management functions, principles, and techniques are covered. 3 hrs and 1 lab (Corps Training).

Department of Military Science (688)
Army Reserve Officers' Training Corps
Professor of Military Science: Colonel W. G. Quinon (Head), M.B.A. Alabama.
Assistant Professors of Military Science: Lieutenant Colonel G. L. Moeller, M.S. Troy State; Majors J. W. Camp, M.B.A Tennessee; N. K. Carey, M.S. Tennessee; N. D. Hay Fitchburg State; W. F. Martin, B.S. Nebraska (Omaha); J. S. Shumaker, M.A. Nebraska (Omaha); Captain V. C. Pangile, M.S. Tennessee.

UNIVERSITY ROTC PROGRAM
The University of Tennessee offers a voluntary ROTC program leading to appointment as an officer in the United States Army.

PURPOSE AND OBJECTIVE
The purpose is to provide professional education which will prepare student for appointment as commissioned officer in the Regular Army or the United States Army Reserve.

Objectives of the program are to provide students with an understanding of the fundamental concepts and principles of military art and science; to develop in them a basic understanding of associated professional knowledge; to instill a strong sense of personal integrity, honor, and individual responsibility, and an appreciation of the requirements for national security; and to establish a sound basis for the students' future professional development.

ROTC draws young men and women for training from all geographical, economic, and social strata of our society as well as from the many educational disciplines required for the modern Army. The program insures that men and women educated in a liberal and broad spectrum of American institutions of higher learning are commissioned annually into the officer corps.

ARMY ROTC SCHOLARSHIP PROGRAM
The Army ROTC scholarship program offers financial assistance to outstanding young men and women in the Army ROTC program who are interested in the Army as a career. Each scholarship provides for free tuition, textbooks, and laboratory fees in addition to a subsistence allowance of $100 per month for the period that the scholarship is in effect. Scholarships may be awarded for either one, two, three or four years. High school seniors should contact their guidance

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counselors early in November or December of their senior year to apply for the four-year scholarship. One, two and three year scholarship applicants should contact the Professor of Military Science for further information. Certain other privately financed scholarships and grants are available to ROTC cadets.

UNIVERSITY CREDIT

The University of Tennessee grants the following credit for Military Science:
- Military Science I—3 quarter hours (MS 1110)
- Military Science II—6 quarter hours (MS 2110-20)
- Military Science III—12 quarter hours (MS 3110-20-30)
- Military Science IV—12 quarter hours (MS 4110-20-30)
- Army ROTC Summer Studies—6 quarter hours (MS 4000)

BASIC ACADEMIC REQUIREMENT FOR APPOINTMENT AS SECOND LIEUTENANT

Academic prerequisites for appointment as Second Lieutenant in the United States Army through the ROTC Program at The University of Tennessee, Knoxville, include the following minimum requirements. The sequence and selection of courses not specified will be determined by the adviser in concert with the head of the Department of Military Science. In cases where a student is pursuing a discipline which is narrowly restricted (excluding Military Science Core Curriculum) with few elective options, any conflict in scheduling or course selection will be resolved in favor of academic degree requirements.

MILITARY SCIENCE CORE CURRICULUM

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Basic Military Studies</td>
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<tr>
<td>MS 1110 Fundamentals of Military Organization Leadership and Management</td>
<td>3</td>
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<tr>
<td>MS 2110-20 Applied Leadership and Management</td>
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<table>
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<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tr>
<td>Advanced Military Studies</td>
<td></td>
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<tr>
<td>MS 3110-20-30 Advanced Leadership and Management</td>
<td>12</td>
</tr>
<tr>
<td>MS 4000 Army ROTC Summer Studies (Leadership and Management)</td>
<td>6</td>
</tr>
<tr>
<td>MS 4110-20-30 Seminar in Leadership and Management</td>
<td>12</td>
</tr>
</tbody>
</table>

TOTAL: 39 hours

Substitution

The following courses may be substituted for military courses with permission of adviser and ROTC department head: Industrial Management 4460 or Psychology 3450; or Psychology 4610; History 4380 for MS 4130.

Certain other upper division courses may be substituted with permission of PMS.

OTHER ACADEMIC COURSES

Since each degree field at UT is designed to provide a well-balanced education in diversified fields, no specific hour requirement is levied for courses outside the Military Science Core Curriculum.

Freshman and Sophomore Years

The University requirements for subjects in the field of communications (English grammar, composition, speech, etc.); physical, natural and biological sciences; humanities; social sciences; and applied sciences (engineering, mathematics, computer science, etc.) will satisfy the Army's desire for its officers to have a well-rounded liberal education.

Junior and Senior Years

The cadet is expected to pursue at least one quarter of upper division work in each of two different divisional course areas (other than major) as follows: mathematics; computer sciences; natural sciences; anthropology; economics; political science and international relations; history; psychology; sociology; foreign languages; management; urban studies; mass communications; or accounting.

Students seeking an Army commission are permitted to substitute military studies for non-technical electives, Social Studies, and/or Humanities to satisfy degree requirements. This substitution is at the sole discretion of the deans of the separate Schools and Colleges.

ENROLLMENT AND CONTINUANCE REQUIREMENT

The general requirements for enrollment and continuance in the ROTC program are:

1. Basic Course—MS I and II
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Be not less than eighteen years of age and have not reached twenty-three years of age at the time of enrollment.

2. Advanced Course—MS III and IV—All cadets applying for enrollment in the Advanced Course Army ROTC who seek a Commission must:
   a. Have either completed the Basic Course, or an off-campus six-week Field Training Course, or have the required amount of prior military service.
   b. Have two academic years of college remaining (either graduate or undergraduate).
   c. Be enrolled as a full-time student, either at UT or at a nearby institution in a cooperative program.
   d. Meet military training and physical requirements.

Regularly enrolled students who meet the academic prerequisites and do not desire a commission may take individual courses as electives with the permission of the department head and their academic adviser.

ADVANCED MILITARY STANDING FOR MILITARY TRAINING

On the basis of previous honorable active military service in any branch of the Armed Services, or participation in the Junior ROTC Program at Secondary Schools, a student may request exemption from portions of the Basic Course. Exemption allowed will be determined on the merit of academic adviser.

EMOLUMENTS

All students enrolled in the Army ROTC program are furnished certain texts and uniforms by the Army through the Military Property Officer at UT. Students enrolled in the ROTC Advanced Course receive an allowance of $100 per month during the academic year. While attending the ROTC summer studies, each cadet receives approximately $420 plus meals, clothing, and requisite special equipment.

SELECTIVE SERVICE STATUS

The Selective Service laws provide for certain deferments (draft exemption) for students seeking a commission in the Army through the ROTC curriculum.

COURSES AVAILABLE

The curriculum of the Army ROTC program is designed to qualify the cadet for appointment as an officer. Selection for assignment to the various branches of the Army is based upon:

a. The personal interests of the cadet.
   b. The major course of study.
   c. Academic accomplishment.
   d. Leadership potential.
   e. The needs of the Service.

Under this system a cadet may be commissioned in any branch for which he or she is qualified and in which a need for officers exists. After graduation and commissioning, the officer will attend a service school for further specialized military training which will qualify him or her for the Branch to which he or she is assigned.

Flight training, which includes 35 hours of ground instruction and 35 hours of flight instruction, is offered to physically qualified senior ROTC cadets. The cadet may qualify for a Federal Aviation Agency approved private pilot's license upon successful completion of the flight training course. This program is offered at no cost to the cadet.

Curriculum

1110 Fundamentals of Leadership and Management (3) Development of American military institutions, policies, and traditions in peace and war from colonial times to present. Historical examples of effective and ineffective leadership and application of principles of war. Practical exercise in leadership development.


2120 Applied Leadership and Management (3) Contemporary world scene and impact on the military. Planning, preparation, and presentation of briefings and continued development of leadership skills, through practical exercise. Discussion of ROTC Advanced Course. Prereq: 2110.

3110-20-30 Advanced Leadership and Management (4, 4, 4) Applied leadership to include operation of the military team, electronic communications, land navigation, small unit leadership and internal defense/development. Two field trips. Leadership Laboratory: Philosophy of organization and operation of military in tactical and administrative roles. Prereq: 2110.

4000 Army ROTC Summer Camp (6) Six-week encampment (forty hours of instruction are
scheduled each week) is a prerequisite to commissioning and normally scheduled upon completion of 3130. Camp is conducted at an Army installation with instruction presented by ROTC faculty from colleges and universities. Course of instruction is an extension of leadership and management curricula. Prereq: 3130.

4110 Theory and Dynamics of the Military Team (4) Organization and management of division military team, development and function of military staff, and coordination and planning of the military team. Leadership Laboratory: Staff and Tactical Planning, presentation of briefings, preparation, execution and supervision of plans. Prereq: 4000 or permission of instructor.

4120-30 Seminar in Leadership and Management (4, 4) Analysis of selected leadership and management problems involved in unit administration, military justice, Army Readiness Program, and officer-enlisted relationships. Leadership Laboratory. Prereq: 4110.

4140 Flight Instruction (0) Flight and ground instruction including fundamentals of air discipline, solo, dual, basic instrument and cross-country flying, meteorology, aerial navigation and radio procedures. Prereq: Enrolled in 4110 or permission of Department Head and physically qualified according to Army standards.
Division of Continuing Education

Vice President for Continuing Education:
Charles H. Weaver, Ph.D. Wisconsin

Associate Vice President for Continuing Education:
Kenneth D. Wright, Ph.D. Ohio State

The Division of Continuing Education is responsible for the operation of all statewide continuing education programs, both on campus and off campus. The Division is concerned with policies and programs required for effective offering of educational opportunities, including attainment of college level degrees, to qualified students of all ages and walks of life who pursue knowledge outside the traditional on-campus setting. All continuing education programs of the University are coordinated through the Division.

Information concerning continuing education programs of the various campuses is set forth in the respective catalogs. Information on continuing education programs of The University of Tennessee, Knoxville, is given on page 82 of this catalog.

Joint University Center (UT/MSU)

Director:
T. L. Weber, M.A. Memphis State.

Assistant Director:
H. Sammonds, B.S. Tennessee.

Assistant Professors (full time only):
P. A. Flowers, M.A., Ohio State; C. R. McEntire, M.S. Kansas State College.

Instructors (full time only):
P. Breland, M.A. Alabama; E.M. Brown, M.A. Memphis State; E. K. Miller, M.A. Alabama.

The Joint University Center is administered cooperatively by The University of Tennessee and Memphis State University, and the Division has coordinative and developmental responsibilities only.

Center For Extended Learning

Director:
C. W. Hartsell, Ed.D. Tennessee

Assistant Directors:

Correspondence Instruction: This statewide department extends instructional services of the University from all campuses to the citizens of the state. Courses are offered in the traditional correspondence format and in conjunction with Radio Services, Television Services, and the Teaching Materials Center. Courses may be started at any time.

College Credit Courses: The same courses with the same instructors as in resident classes on various campuses, offering full degree credit.

College Entrance Courses: To remove entrance deficiencies or to complete high school requirements.

Non-Credit Courses and Certificate Programs: In areas of general interest and in technical, business, or professional fields.

Send for a catalog giving information on enrollment, costs, books, and credit. Address: University Correspondence Instruction, The University of Tennessee, Knoxville, Tennessee 37916. Telephone (615) 974-5135.

Cable College: College credit courses offered via cable.

Clep Open Center: To administer College-level Examination Program tests each month.

Independent Reading: Contact staff in departments where courses are offered. This program offered through CEL.

Statewide Media Programs: Courses by radio and television for credit.

Undergraduate Cooperative Education:
Alternate periods of study and related work experience in all degree fields.

Head Start State Training Office

Director:
L. C. Biggs, M.S. Wisconsin

State Training Officer:
M. U. Cole, B.A. Tuscaloosa

Training Officers:
R. F. Blum, B.S. Bradley University; B. A. Chervin, B.S. Tennessee; D. A. Henry, M.P.S. Western Kentucky University; N. W. Moore, B.S. Northwestern

Coordinator:
A. M. Albrecht, M.S. Tennessee

Field Staff - Leadership Development:
R. Cathey, M.S. Lutheran Illinois University; R. C. Makut, B.S. University of Rhode Island; S. T. Teets, M.S. Tennessee

SUPPLEMENTARY TRAINING
Research Coordinator At UTC:
P. J. Pritz, M.A. Missouri

Training Officers:
V. H. Gayton, B.S. Tennessee; W. S. Judd, M.S. Tennessee

The State Training Office of Head Start is a program of services to the twenty area Head Start Programs in Tennessee. The services include organizing training programs for personnel of the various local programs, development of special workshops, publication of a newsletter, and organizational work with parents of children in the Head Start program. This office provides training through the coordination of the Leadership Development Program, Head Start Supplementary Training and the State Training Office grants.

Library Services

Director:
D. J. Harkness, M. A. Columbia.
This is a statewide service, administered by the system Division, and has four major facets.

**Package Library Service** provides material for use by clubwomen, teachers, librarians, and other individuals in preparing talks and papers and in doing special study and reference work. Books from the Extension Library and the University Library are loaned to individuals within the state and to students taking courses by correspondence. Study club outlines, bibliographies, suggestions for club yearbooks, reading lists, and information-reference service are provided.

**Club Program Service** includes a series of program manuals on historical, literary, and bibliographical subjects designed to help clubwomen, teachers, and librarians in their work and individuals in their reading and study in informal adult education.

**Drama Loan Service** makes it possible for directors of drama in schools, colleges, universities, Little Theatres, and church drama groups to borrow copies of one-act and three-act plays and materials for special days for reading and examination. Information on sets, costumes, and the original Broadway productions, along with material on playwrights, actors, and actresses, is also available.

**School Program Service** includes aid to teachers, librarians, and directors of speech and drama through package libraries, drama loans, and production aids.

**Publications**

Publications are a direct means of extending to Tennesseans the information resulting from studies by University departments and various extension materials designed for general enrichment of civic, cultural, and economic understanding. The *University of Tennessee Continuing Education Series* is used as an outlet for these materials. A list of available titles, most of them free to Tennessee residents, may be had upon request.

**Radio Services**

**Director:**

**Assistant Director:**
N. L. Dryer, B.M. Indiana.

**Staff:**

This department is under the system Division and conducts an extensive statewide program of adult education and information by radio, offering hundreds of different cultural and educational experiences. Its activities may be grouped into three categories:

1. **WUOT**, the University's 100,000-watt stereo FM station, operating eighteen hours a day every day of the year, with a high quality and varied program of music, public affairs discussion, drama, and documentation from local, state, national, and international sources. The station is a member of the National Public Radio Network.

2. A network of over 150 Tennessee radio stations which provide without charge the time for over 22,000 quarter-hour programs on subjects of public interest, with production, duplication on audio tape, and distribution accomplished by the department. Its close contact with all broadcasting, and its staff and facilities equip the department ideally for work with the other campuses in the production, duplication, and distribution of audio materials for educational use. It will upon request assist all of the campuses in communications development.

3. A technical service which includes high-speed duplication of reel-to-reel or cassette audio tapes for university departments, recording conferences and workshops, audio consulting, and educational radio consulting.

**Teaching Materials Center**

**Director:**
J. T. Benton, M.S., Tennessee.

This department, a system Division unit, provides educational films for the public schools, colleges, churches, civic clubs, and other interested organizations on a wide variety of subjects, ranging from agriculture to technical material on the space age, and also films for industrial use. Film councils throughout the state encourage the use of these materials for forum discussions and general adult education. An advisory service on effective film use is also provided by the department. Films, equipment, and other services are made available to the academic faculty for classroom instruction and experimentation; and educational films are provided for the students both on and off campus for student teaching, previews, and special projects.

**Television Services**

**Director:**
F. A. Lester, M.A., Tennessee.

**Production Manager:**

**Chief Engineer:**
D. L. Bower.

**Coordinator, VERM:**

**Producers:**

Television services, a system department, includes the complex closed-circuit administration and production work which results in many lower division resident classes being taught to some 8,000 students by television on the campus; the production of 196 half-hour programs each year on WSUK-TV, the State Department of Education station in East Tennessee; and instruction for three resident courses in broadcasting for the College of Communications. The department jointly administers an off-campus secondary school accelerated college entrance program by television tape and the Video Tape Electrowriter Remote Mode program of graduate studies in engineering.
The University Library

Richard W. Boss, Director  
Gene M. Abel, Associate  
Director/Public Services  
Susan Brynteson, Associate  
Director/Technical Services  
George W. Shipman, Associate  
Director/Administrative Services  

The books, periodicals, non-print and any other materials contained in the 6 UTK library units are available to all students, faculty and staff of The University of Tennessee, Knoxville. Included among the holdings are 1,175,000 books, more than 575,000 microforms, 2,500 audiotapes, 300 slide carousels, 100 video-cassettes, 5,700 phonodiscs, more than 1.5 million manuscripts, and various ephemeral materials.

The library in its 6 locations is open to all students and faculty, regardless of their fields of study. The James D. Hoskins Library at 1401 West Cumberland is the main library where administrative and technical services offices are located. The dictionary catalog, listing the library holdings for the entire campus, is in Main, as are the general and research collections, comprehensive reference, Interlibrary loan, documents, 4000/5000-level reserves, newspapers, and Special Collections, the last a repository of local and regional source materials.

The John C. Hodges Undergraduate Library, on Volunteer Boulevard at Andy Holt Ave., has a limited collection of 150,000 volumes selected to meet the needs of students in undergraduate courses. Reserve materials for 1000-3000 level courses are available in this library as is a large collection of audiotapes, slides, and video-cassettes.

Other libraries serving specialized areas are: Agriculture in Morgan Hall; Law in the Taylor Law Building; Music in the Music Building; and Science/Engineering in Dabney-Buehler.

The libraries are administered by a director, three associate directors (for public, technical, and administrative services) and a number of department heads. Questions and comments are invited in person or through the suggestion boxes located in each library. Ongoing evaluation and building of the collections is the responsibility of the Collections Development Librarian. While most materials are selected by faculty, recommendations for purchase are invited from all students and staff. Copies of Your Libraries, the general library handbook for students, and the Faculty Library Handbook are available at all libraries.
Urban and Public Affairs

Vice President for Urban and Public Affairs:
C. E. Smith, A.M. Peabody

Associate Vice President for Urban and Public Affairs:
A. B. Blacoë, Jr., Ph.D. Florida

Administrative Assistant:
C. C. Woods, J.D. Tennessee

Institute For Public Service

Executive Director
R. S. Hutchinson, M.B.A. Chicago

Assistant Director
L. R. Rogers, B.S. Tennessee

Manager of Information Services:
T. B. Ballard, B.S. Tennessee

Manager of Program Development And Evaluation:
B. S. Barker, M.A. Texas

Manager of Request-for-Service System:
W. S. Evans, B.S. Tennessee

Business Manager:
G. W. Baskette

The Institute for Public Service was established in 1971 within the office of the Vice President for Urban and Public Affairs. The purpose of the Institute is to coordinate and promote public service activities throughout the University system, excluding services provided through the Institute of Agriculture.

The basic goal of the University public service effort is to bring to the citizens of Tennessee— their business, their industry, and their governments—the problem-solving capabilities uniquely embodied within their statewide university system.

Public service at The University of Tennessee includes all services offered to those outside the University, including teaching in certain non-degree situations, technical assistance, and applied research which is conducted specifically at the request and for the benefit of non-University organizations in Tennessee.

The Institute provides: (1) a system-wide focal point for urban and public services; (2) a means to coordinate the various system-level public service activities; and (3) an organizational base for communication and program development that relates to both outside service clientele of the University and the campuses of the University system.

The Institute is headquartered in Knoxville and maintains regional offices in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Martin, Memphis and Nashville.

The Institute is comprised of the system-level public service operations listed below.

Government-Industry-Law Center

Executive Director:
R. S. Hutchinson, M.B.A. Chicago

Associate Director:
L. R. Rogers, B.S. Tennessee

R. J. Plummer, County Law Enforcement Consultant

The Government-Industry-Law Center was created as a division of the University by the Eighty-Third General Assembly (1963). The purpose of the Center is to serve as liaison between the State and local governments and the University, coordinating the needs of government and industry with the resources of the University. In addition to this coordinating function, the Government-Industry-Law Center serves as a clearinghouse for public service projects undertaken for the State by any unit of the University system.

County Technical Assistance Service

Executive Director:
R. J. Harris, B.S. Lambuth

Executive Assistant to Director:
D. A. Rizer, M.A. Arkansas

Director of Field Services:
J. H. Westbrook, Jr., B.S. Tennessee

Senior Legal Specialist:
T. W. Graham, J.D. Tennessee

Legal Specialists:
W. C. McIntyre, J.D. YMCA Law School, Miss C. D. Wiggins, J.D. Tennessee

Senior Law Enforcement Consultant:
G. L. White

Law Enforcement Consultant:
W. G. Hall, B.S. Middle Tennessee State

Financial Specialist:
T. D. McAnulty, M.A. Austin Peay State

Engineering Specialist:
C. R. Phebus, M.S. Vanderbilt

County Field Advisors:

The County Technical Assistance Service was established by the Board of Trustees at the 1973 mid-year meeting and began operation September 1, 1973. Establishment of the Service was authorized by the 85th General Assembly for the purpose of providing "studies and research in county government, publications, educational conferences and attendance thereat, and to furnish technical, consultative and field services to counties of the state in problems relating to fiscal administration, accounting, tax assessment and collection, law enforcement, improvements and public works, and in any and all matters relating to county government. This program shall be carried on in cooperation with and with the advice of counties in the state acting through the Tennessee County Services Association and its Board of Directors, which is recognized as their official agency or instrumentality."

The Service is headquartered in Nashville, with regional offices in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Knoxville and Martin.

Municipal Technical Advisory Service

Executive Director:
V. C. Hobday, Ph.D. Syracuse.

Assistant Director:
J. P. Hartman, M.P.A. Tennessee.

Specialist Consultants:
W. K. Joines, B.S. Tennessee Polytechnic (Finance and Accounting); J. Kerh, B.S. Tennessee (Municipal Information); F. E. Kirk, B.S. in C.E. Southern Methodist (Public Works); J. H. Leuty, B.S. Tennessee Polytechnic (Finance and Accounting); R. A. Lovelace, M.P.A. Kansas (Intergovernmental Affairs); J. A. Fitzgerald, B.A. Memphis State (Policing); A. C. Lock, Jr., B.S.C.E. Oklahoma State (Public Works); G. Musick (Police); D. W. Ownby, J.D. Tennessee (Ordnance Codification); W. D. Swanner, J.D. Tennessee (Ordnance Codification); E. Pueff, J.D. Tennessee (Municipal Law); J. M. Crabtree, Jr., B.S. Tennessee Tech (Personnel);
The Seventy-Fifth General Assembly (1949) established a Municipal Technical Advisory Service at The University of Tennessee. The legislation designated the purposes to be "studies and research in municipal government, publications, educational conferences and attendance thereat, and furnishing technical, consultative, and field services to municipalities in problems relating to fiscal administration, accounting, tax assessment and collection, law enforcement, improvements and public works, and any and all matters relating to municipal government." Services are currently provided in the fields of municipal law, municipal management, public works, finance and accounting, ordinance codification, municipal information, personnel, and police administration. The state is divided into nine districts and a Municipal Consultant is assigned to each district. Most of the staff are located in the headquarters office on the Knoxville campus; regional offices are maintained in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Knoxville, Martin and Memphis. This program is carried on in cooperation with the Municipal Township League.

Center For Industrial Services

Executive Director:
R. E. Harris, M.S., Tennessee, P.E.
Assistant Director:
E. S. Flensmehl, B.S., Tennessee, CM-AST&T.
Senior Field Engineers:
Field Engineers:
S. E. Clapp, M.B.A., Tennessee
P. L. Dannelley, M.B.A., Memphis State
R. E. Eddy, M.B.A., East Tennessee State
J. R. Ross, B.A., Geneva (Penn.)
C. R. Vandiver, B.S., Middle Tennessee State
Counselor:
J. Logan, M.B.A., Arkansas
Industrial Engineer:
T. C. Parsons, M.S., Tennessee
Reference Librarian:
L. C. Her, M.L.S., Peabody.

The Center for Industrial Services has the primary role of assisting Tennessee's manufacturing firms by providing technical and managerial assistance to those companies seeking assistance. By the Tennessee Public Acts of 1963, the assigned objectives for the Center are "to render service to the industries in this state by providing information, data, and materials relating to the needs and problems of industry which might be supplied and solved through research; by providing information about available research facilities and research personnel in Tennessee colleges and universities, and in governmental and private research laboratories; by keeping Tennessee's industries informed about the supply of and demand for trained qualified personnel; and by cooperating with the Governor's Staff Assistance for Industrial Development and the Tennessee Industrial and Agricultural Commission in carrying out its duties."

This statewide program encourages and assists managers of Tennessee firms to draw upon the intellectual resources of the colleges and universities to upgrade the firm's performance. Field engineers experienced in manufacturing operations take the initiative in encouraging the upgrading and expansion of Tennessee industry by counseling with management in their plant environment.

The Center for Industrial Services is headquartered in Nashville. Regional offices are maintained in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Knoxville, Martin and Memphis.

Center For Government Training

Director:
Associate Director:
Assistant Directors:
Program Administrator:
M. D. Traughber, B.S., Middle Tennessee State
Regional Managers:
R. H. Cummings, Jr., B.S., Tennessee; D. J. Edmonds, B.S., Tennessee; P. J. Giggon, B.S., Belmont; A. C. North, Jr., B.S., Middle Tennessee State.
State Program Consultant:
J. F. Roop, M.S., Indiana

The Center for Government Training has responsibility for providing professional assistance and establishing training and career development programs for state and local government employees throughout the state. Headquarters are maintained in Nashville, but decentralized programs are developed in various sections of the state. The Center is charged with identifying and analyzing needs for public service education and training at the state and local levels in Tennessee, and with developing and conducting programs for training of public agency employees, working with institutions of higher education in the state and other educational facilities. The Center acts as a clearinghouse for information relative to public service personnel education and training programs. In addition, the Center serves as the central administrative agency in a state-wide local government training network which includes four campuses of the University and the six senior institutions in the Board of Regents' system.

Technical Assistance Center

Director:
J. T. Brothers, B.A., Bellevue.

The Technical Assistance Center was created in March, 1970. It is funded in part by a grant from the Economic Development Administration of the U.S. Department of Commerce. The Center gives assistance to small businesses or industry, agriculture, labor-market services, and other small, local businesses. The Center is a cooperative program of the University of Tennessee and the U.S. Department of Commerce.

Civil Defense Education Program

Director:
H. V. Price, M.S., Tennessee.
Assistant Directors:

The purpose of the Civil Defense Program is to assist the state, county and municipal governments throughout Tennessee in the development of operational readiness to cope with disasters, natural or man-made. Activities include courses, conferences, consultations, workshops, simulation exercises and surveys, each designed specifically to meet local needs.

Community Service and Continuing Education Program under Title I of the Higher Education Act of 1965.

Title I, Higher Education Act of 1965 (State Agency)

Director:
P. R. Martin, Jr., A.B., Western Carolina.
Administrative Assistant:
Mrs. M. J. Harrell, M.S., Tennessee.
The Community Service and Continuing Education Program under Title I authorizes the allotment of federal funds to the States for the purpose of strengthening community service and continuing education programs of colleges and universities in order to assist people in the solution of community problems, with particular emphasis on urban and suburban problems.

The Governor and the President of UT have jointly appointed a 16-member State Advisory Council for Title I to work with the State Agency in implementing this program. This Council is composed of leaders from higher education, business, government, and the community.

Through the Tennessee State Plan and annual program amendments, the State Agency for Title I, with the advice of the Advisory Council, establishes priorities among problem areas, approves all project proposals from colleges and universities, and allocates available funds to qualified institutions of higher education.

Environment Center

Director:
J. H. Gibbons, Ph.D. Duke

Director, Appalachian Resources Project:
R. A. Bohm, Ph.D. Washington (Missouri)

The Environment Center was created to encourage and support UT faculty and students to become involved in interdisciplinary studies to provide alternative solutions to problems related to energy and the environment. The Center provides assistance to faculty interested in developing research and public service projects; manages research and development projects that involve several disciplines; and assists Tennessee government and industry in specific problems related to energy and environment. It also participates in the Statewide Consumer Education Program, especially in developing material.

An important part of the Center is the Appalachian Resources Project which was initiated to investigate the fiscal, environmental and human costs of coal production in Appalachia.

The Center is supported jointly by the Institute for Public Service and UT, Knoxville through the Office of the Vice Chancellor for Graduate Studies and Research.

Transportation Center

Director:
K. W. Hewitt, Ph.D. Northwestern

Associate Director:
F. W. Davis Jr., Ph.D. Michigan State

Assistant Directors:
D. H. Jones, M.S. Tennessee
R. L. Perry, M.S. Tennessee

The mission of the Transportation Center is to encourage and facilitate interdisciplinary research in all phases of transportation, to provide public service of a transportation-related nature, and to manage the research program for the Tennessee State Department of Transportation.

The Center works with all modes of transportation, including water, rail, air, highways and mass transportation, and with the movement of both goods and people in consideration of transportation's impact on the total environment as well as the technical aspects of a problem.

The Center is supported jointly by the Institute for Public Service and UT, Knoxville through the Office of the Vice Chancellor for Graduate Studies and Research.
THE UNIVERSITY OF TENNESSEE GENERAL SUMMARY 1973-1974

Administration

Trustees:
Appointed by the Governor ........................................ 16
Ex-Officio .......................................................... 5

Officers of Administration:
President ............................................................. 1
Vice Presidents ....................................................... 8
Assoc./Asst. Vice Presidents ...................................... 5
Chancellors ........................................................... 5
Vice Chancellors and Provost ..................................... 14
Assoc./Asst. Vice Chancellors ................................... 6
Deans and Directors ............................................... 132

Full-Time and Part-Time Faculty

<table>
<thead>
<tr>
<th></th>
<th>Center for the Health Sciences**</th>
<th>Chattanooga</th>
<th>Knoxville</th>
<th>Martin</th>
<th>Nashville</th>
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<td>Instructors</td>
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Instruction, Research, and Public Service

Officers of the Agricultural Experiment Station .......... 20
Officers of the Engineering Experiment Station .......... 2
Officers of the Agricultural Extension Service ......... 441
(Includes County Agents)
Lecturers .......................................................... 123
Graduate, Research, and Teaching Assistants, Fellows, Trainees .. 1,331
Officers of the Memorial Research Center and Hospital .. 51

*Includes three vice presidents as duplicates.
**Includes UTMRCI.
# STATEWIDE ENROLLMENT SUMMARY

**Summer 1973 - Spring 1974**

<table>
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<th></th>
<th>Fresh.</th>
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<td>KNOXVILLE</td>
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<td>OR Biomedical Science</td>
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**NOTE:** The enrollment data in this statewide summary of The University of Tennessee System represents an unduplicated count of students enrolled for degree credit. Students enrolled only on a non-credit or audit basis are not included.

*aDoes not include UT-K's student enrollment at the Memphis Joint University Center.
*bDoes not include 4,011 students (unduplicated) in correspondence courses during FY 1974."
American Studies, 172
Animal Science, 50, 56
Anthropology, 162
Arabic, 200
Architecture, 61
Army, 21, 211
Arrowmont School of Crafts, 144
Art: 164
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Exhibitions, 35
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Assistantships, 39
Astronomy, 193
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Automobile Regulations, 35
Average, Required, 20
Aviation Systems, 45
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Bachelor of Fine Arts, 152, 157
Bachelor of Music, 152, 158
Bachelor of Science in Chemistry, 153, 160
Bachelor's Degree, Requirements, 20, 153
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Banking, 65
Binary Engineering Program, 105
Biochemistry, 167
Biology, 167
Biology, Agriculture, 48, 54
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Business Administration, 72
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Business:
  Cooperative Program, 65
  Education, 66, 90, 102
  General, 66, 70
Calendar, 4
Carousel Theatre, 35
Center, University, 32
Center for Extended Learning, 214
Center for the Health Sciences, 15, 155
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Chemistry: 169
Cooperative Program, 180
Child Development, 136, 140
Choral Groups, 36
Church Centers, 34
Civil Defense Education Program, 218
Civil Engineering, 108, 113, 123, 124
Classics, 170
Classification of Students, 20
Clothing, Textiles and, 140, 146
College Scholars Program, 155
Communications, 80
Communications, College of, 78
Comparative Literature, 173
Computer Science, 171
Computing Center, 37
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