College of Liberal Arts

Alvin H. Nielson, Dean
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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
I. Basic Program

A. THE TRIAD:

1. Language, Literature, and the Arts
2. Science and Mathematics
3. History and Society

B. The TRIAD: Language, Literature, and the Arts

The TRIAD program is designed to provide a broad foundation by taking courses which will satisfy TRIAD requirements in the first two years, thus releasing most of the final year for in-depth study in the area of concentration. Elective courses may be taken at any time.

Advisers in the Liberal Arts Advising Center (220 Ayres Hall), 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.

Note: Students are advised to consult the University’s degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

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 credit hours in courses numbered 3000 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 department and 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 satisfied 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 36 credit hours in the area of concentration at The University of Tennessee, Knoxville.

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 effec-
tively and coherently, in one of the following four ways:

(i) By completing English 1510-20 or 1510-21 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 a normally socialized proficiency examination in writing, administered by the Department of English in cooperation with the Committee on Writing Standards.

(iv) By completing 4 hours of freshman English followed by a minimum 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 from 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 in English or in the Liberal Arts Advising Center.

(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 in the 2000-level or above. Pre-requisite to this option is intermediate-level competence in the language, demonstrated by diagnostic (non-credit) or proficiency (credit) examination or by 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 equivalent approved) 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 movements, 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 foreign language option 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.

**2 History and Society**

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

(a) One 8-hour sequence from the following 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 any two of the following 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 coursework in this area, including:

(a) One of the following two options:

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

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

(b) 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 offerings 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 and 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 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.

**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 the thought 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 in another college of the University (24 or more credit hours 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
- Black Studies
- Comparative Literature
- Latin American Studies
- Bioethics
- Chinese
- Classics
- Comparative Literature
- Economics
- English
- French
- German
- Geography
- Geology
- Geophysics
- Geosciences
- Geophysics
- Geology
- History
- Human Services
- Zoology

*See Phi Beta Kappa requirements in Mathematics, page*
Minors may be developed in other colleges of the University, but they must be approved by the dean of the College of Liberal Arts. Minor programs offered by 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 a means of attaining a closer correlation between student needs and academic programs.

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 the other department or departments. 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, in 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 unduplicated scattering of courses will not be approved. For further information consult the program director, Harry Jacobson (Ayres 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 provisional until the 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; 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 be also eligible to submit research or creative writings for inclusion in the project-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 one or more 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 (Ayres Hall).

IV. Preparation For The Health Professions

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

Pre-medical 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, and pharmacy include the specified courses required for admission to the respective colleges of The University of Tennessee Center for the Health Sciences at Memphis (UCHTS), as well as those required for the Bachelor of Arts degree in the College of Liberal Arts at UT, Knoxville. The pre-medical technology program prepares students to undertake professional training during the fourth year of study at The University of Tennessee Center for the Health Sciences at Memphis. Other pre-health professional programs—dental hygiene, medical record administration, nursing, pharmacy, and physical therapy—are offered for those students who are planning to pursue professional training in health professional areas which lead to an undergraduate degree from UCHTS but not to a degree from UT.

NOTE: The Triad for the Health Sciences is a state-supported institution and by legislative intent is required to admit all qualified Tennessean students 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 alumnus or alumnna 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 course 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 professional 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 upon the curriculum 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 listed below. The requirement for a major is waived for those completing their fourth year at Memphis. Students in 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 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.

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<tr>
<th>Freshman</th>
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<tr>
<td>English 1510-20</td>
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<tr>
<td>Chemistry 1110-20-30</td>
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<tr>
<td>Mathematics (1520-1540-1550)</td>
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<tr>
<td>1840-50</td>
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<td>Triad I (Language, Literature &amp; the Arts)</td>
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<td>Triad II (History and Society)</td>
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<th>Sophomore</th>
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<tr>
<td>Biology 1210-20-30 or Zoology 1118-28-38</td>
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<td>Chemistry 2321-2322-2323</td>
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<td>3219-29-39</td>
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<tr>
<td>Triad I</td>
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<td>Triad II</td>
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<td>Elective</td>
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*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.
Junior
Physics 2210-20-30 ........................................ 12
Speech 2311 .................................................. 4
*Biology and/or Zoology ................................... 12
Triad I .......................................................... 4
Triad II .......................................................... 4
*Elective ...................................................... 4

(Total 135)

Senior
*Completion of major program and B.A. requirements ........................................... 45
Completion of one year at the UTCCHS

Total: 180 hours

2. The Pre-Medical Technology Program

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's Memphis 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.

Freshman

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<td>*Mathematics 1840-50</td>
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<td>Zoology 1118-28-38</td>
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<td>Chemistry 3211-21-31 &amp;</td>
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*Electives                |       | 15     |

(Total 135)

Senior

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| Completion of one year at the UTC Center for the Health Sciences Bulletins describing the pre-medical 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 on 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 UTC 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 UTC 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.

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PRE-MEDICAL RECORD ADMINISTRATION PROGRAM

Admission to the medical record administration program at the UTC Center for the Health Sciences, leading to a Bachelor of Science degree from UTCCHS 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 Advising Center 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.

Pre-Medical Technology Program

Students planning to seek admission to the medical technology course of study at the UTC 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. Applicants 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 the profession advisor in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office for 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.

PRE-NURSING PROGRAM

The minimum requirement for admission to the College of Nursing at the UT Center for the Health Sciences is 48 hours of prescribed courses in the College of Liberal Arts. The program at Memphis, which leads to the Bachelor of Science in Nursing from UTCHS, is three years in length.

Registered nurses who wish to work for a degree of Bachelor of Science in Nursing must complete 54 hours of prescribed courses to qualify for admission with advanced standing.

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

Note: A degree program in nursing is also available at the University of Tennessee, Knoxville, through the School of Nursing. Information may be obtained from the Dean of the School of Nursing.

PRE-PHARMACY PROGRAMS

The College of Liberal Arts offers three programs preparing students for the study of pharmacy at the UT Center for the Health Sciences in Memphis. The Bachelor of Science in Pharmacy degree is conferred by UTCHS upon completion of three years of professional study at Memphis following any of the three programs.

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. 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-year or four-year program must complete the last 45 hours of credit in residence at the University of Tennessee, the UT Center for the Health Sciences, before enrolling in the College of Pharmacy.

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1510-20</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Chemistry 1110-20-30</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Mathematics 1550-60 or 1640</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Psychology 2500</td>
<td>4</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triad I (Language, Literature &amp; the Arts)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Triad II (History &amp; Society)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 1210-20-30 or Zoology 1118-28-38</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Chemistry 3211-21-31 &amp; 3219-29-39</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Speech 2311</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Triad I</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Triad II</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
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</tbody>
</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 2110</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physics 2120</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Triad I</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Triad II</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Total 135)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Senior

Completion of major program and B.A. requirements: 45 or 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Or equivalent honors courses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*The College of Pharmacy requires a minimum of 6 hours of English or foreign language in addition to English 1510-20.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*The College of Pharmacy requires a minimum of 6 hours in social science in addition to Psychology 2500.</td>
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<td></td>
</tr>
<tr>
<td>The remaining hours may include courses chosen from economics, history, political science, psychology, or sociology.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Recommended electives include Classics 2710 and 2720 and courses in business administration, particularly Accounting, Economics and Marketing.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PRE-COMPUTER SCIENCE PROGRAM

Admission to the pre-computer science program at the UT Center for the Health Sciences, leading to the degree of Bachelor of Science in Computer Science 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-computer science program are encouraged to consult with a health professions advisor in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office for more information. Bulletins describing the pre-computer science program in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

Other Health Professions

Cytotechnology

Histotechnology

Optometry

Radiologic Technology

Veterinary Medicine

A library of materials about career opportunities in the health professions, including most allied health area, 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.

Bachelor of Fine Arts

The Bachelor of Fine Arts degree represents intensive study preparing the student for graduate programs and careers relating to the arts. 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

Transfer students are advised that a minimum of 28 credit hours in studio courses and eight upper division credit hours in art history must be earned on the Knoxville campus.

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

A minimum of 13 hours other art history courses

13 Studio:

*Art 1115 Studio Fundamentals:

Drawing and the Illusion of Space

*Art 1125 Studio Fundamentals:

Surface composition and color

*Art 1130 Studio Fundamentals:

Real Space and Volume

Art 2105 Introduction to Drawing

Art 2205 Introduction to Painting

Art 2405 Introduction to Sculpture

Art 2505 Introduction to Communication Design

Art 2815 Introduction to

*Prerequisite to 2000 level courses for B.F.A. program.

General Curriculum:

In addition to the core program, B.F.A. candidates must fulfill the following general requirements:

A. Triad Courses

1. Language, Literature and the Arts

A minimum of 8 hours English Composition

2. History and Society

A minimum of 8 hours

3. Science and Mathematics

A minimum of 8 hours

24 hours

B. Philosophy 3910

4

C. Non-Art Electives

A minimum of 20 hours. Students entering with a high school language deficiency must take a minimum of 8 hours of a foreign language.
MUSIC THEORY

Freshman
English 1510-20 ........................................... 3
Music 1111-21-31 ........................................... 3
Music 1113-23-33 ........................................... 3
Music 1340 .................................................. 3
Music 1110-20-30 ........................................... 3
Applied Music ............................................. 3
Ensemble ..................................................... 3
Liberal Arts Electives ..................................... 3
Music 2000 .................................................. 0

Sophomore
Music 2111-21-31 ........................................... 3
Music 2113-23-33 ........................................... 3
Music 2310-20-30 ........................................... 3
Music 2599 .................................................. 6
Applied Music ............................................. 6
Ensemble ..................................................... 6
Liberal Arts Electives ..................................... 6
Music 2000 .................................................. 0

Junior
Applied Music ............................................. 3
Music 3111-21-31 ........................................... 9
Music 3113-23-33 ........................................... 9
Music 4112 or 4115 ........................................... 9
Music 4112 or 4114 ........................................... 9
Ensemble ..................................................... 9
Music History/Literature (3000-level and above) ........ 6
Electives ..................................................... 6
Music 2000 .................................................. 0

Senior
Music 4100 .................................................. 3
Music 4111 .................................................. 3
Music 4112 or 4115 .......................................... 3
Music 4121 or 4114 .......................................... 3
Music 4131 .................................................. 3
Applied Music ............................................. 3
Ensemble ..................................................... 3
Music Electives ............................................ 6
Liberal Arts Electives ..................................... 6
Electives ..................................................... 6
Music 2000 .................................................. 0

TOTAL: 180 hours

COMPOSITION

Freshman
English 1510-20 ........................................... 8
Music 1111-21-31 ........................................... 8
Music 1113-23-33 ........................................... 8
Music 1340 .................................................. 8
Music 1110-20-30 ........................................... 8
Applied Music ............................................. 8
Ensemble ..................................................... 8
Liberal Arts Electives ..................................... 8
Music 2000 .................................................. 8

Sophomore
Music 2111-21-31 ........................................... 9
Music 2113-23-33 ........................................... 9
Music 2310-20-30 ........................................... 9
Music 2599 .................................................. 9
Applied Music ............................................. 9
Ensemble ..................................................... 9
Liberal Arts Electives ..................................... 9
Music 2000 .................................................. 9

Junior
Music 2340 .................................................. 3
Music 3111-21-31 ........................................... 3
Music 3112-22 ............................................. 3
Music 3113-23-33 ........................................... 3
Music 3599 .................................................. 3
Applied Music ............................................. 3
Liberal Arts Electives ..................................... 3
Electives ..................................................... 3

Senior
Music 4111 .................................................. 3
Applied Music ............................................. 3
Music 4112 or 4114 .......................................... 3
Music 4112 or 4114 .......................................... 3
Applied Music ............................................. 3
Liberal Arts Electives ..................................... 3
Electives ..................................................... 3

TOTAL: 180 hours

PIANO LITERATURE

Freshman
English 1510-20 ........................................... 8
Music 1111-21-31 ........................................... 8
Music 1113-23-33 ........................................... 8
Music 1340 .................................................. 8
Principal Applied Study ................................ 8
Music 3699 .................................................. 8
Applied Music ............................................. 8
Liberal Arts Electives ..................................... 8
Music 2000 .................................................. 8

Sophomore
Music 2111-21-31 ........................................... 9
Music 2113-23-33 ........................................... 9
Music 2310-20-30 ........................................... 9
Principal Applied Study ................................ 9
Music 3699 .................................................. 9
Music Electives ............................................ 9
Liberal Arts Electives ..................................... 9
Music 2000 .................................................. 9

Junior
Music 2340 .................................................. 3
Music 3113-23-33 ........................................... 3
Music 3040-50-60 .......................................... 3
Principal Applied Study ................................ 3
Music 3699 .................................................. 3
Music History/Literature (3000-level and above) ........ 3
Liberal Arts Electives ..................................... 3
Music 2000 .................................................. 3

Senior
Music 4111 .................................................. 3
Applied Music ............................................. 3
Music 4112 or 4114 .......................................... 3
Music 4112 or 4114 .......................................... 3
Applied Music ............................................. 3
Liberal Arts Electives ..................................... 3
Electives ..................................................... 3

TOTAL: 180 hours
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Theatre 2121</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Music 2000</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Senior</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Music 3012-22-32</td>
<td>9</td>
<td>0</td>
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<tr>
<td>Music 4012-22-32</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Principal Applied Study</td>
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<td>0</td>
</tr>
<tr>
<td>Ensemble</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Senior Recital</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Foreign Language (French, Italian, or German)</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Music 2000</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL: 180 hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Preparation For Other Professions

Law
Students who plan to study law should consult the statement regarding admission to the College of Law (page 154) and discuss their programs with advisers 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 40 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 elect 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.

Senior
Political Science 4610-20 .................................. 6
Political Science 4640-20 .................................. 6
Economics 3410 ............................................. 3
Accounting 3510 ............................................. 3
Finance 4350-60 ................................................ 6

Degree requirements in the above courses and the curriculum in public administration may be obtained in the office of the Department of Political Science.

*Offer equivalent honors courses.

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 pages 41-42. 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 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 1977-78 academic year must apply by December 31, 1976.

Curricula for students seeking teacher certification must 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 choice 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
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.

Satisfactory/No Credit Courses

A few courses in the College are offered only on a S/NC/No Credit basis and students may elect to take others on this basis, except in areas where the option is specifically prohibited. Such courses, if successfully completed, will count as hours for graduation although neither S nor NC grades will be calculated in the student's grade point average. Satisfactory is defined as C or better work on the traditional grading scale and No Credit is defined as less than C. The following regulations apply:

(1) S/NC courses, except those offered only on this basis, may not count for Triad requirements or major and minor requirements unless specifically permitted by petition. This restriction applies also to major or minor prerequisites or corequisites.

(2) The maximum number of S/NC elective hours which may be counted toward graduation is 30, exclusive of courses offered only S/NC, physical education courses and/or satisfactory hours earned by examination, military service, etc.

(3) A student who desires to take a course S/NC should indicate that intention at the time of registration. A change from S/NC grading to regular grading or from regular grading to S/NC will not be permitted beyond the add deadline in each quarter. (Exception: Students who register for a course S/NC in a restricted area will be required to change to regular grading when the error is discovered.)

(4) A transfer student who has more than 30 S/NC or equivalent hours earned prior to admission to the University of Tennessee, Knoxville, may count all of these hours toward graduation but may not elect additional S/NC hours.

(5) A transfer student with S/NC or equivalent credit earned prior to admission to the University of Tennessee, Knoxville, in a course which satisfies a Triad requirement may count it for that purpose. In the case of a course which satisfies a major or minor requirement, statement (1) applies.

The option of taking courses on a S/NC basis is provided to encourage the able student to venture beyond the limits of those courses in which he usually does well and, motivated by his own intellectual curiosity, to explore subject matter in which his performance may be somewhat less outstanding than his work in his preferred subject fields.

Note: Students planning to seek admission to graduate or professional schools (especially in the health sciences) should discuss with their advisers possible limitations on exercise of the S/NC option before registering for courses on this basis.

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, workshops, political campaigns, etc. Credit per quarter will vary from 1-6 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 member and the department concerned prior to embarking upon 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 the 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 with approval enroll 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 under the foreign study number 4101. The nature of this work as well as credit for it must be negotiated by students prior to departure with the appropriate Liberal Arts departments. Credit will be awarded only after completion of all agreed upon 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 instructors 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 the academic 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 Center for the Health Sciences. Each quarter the Student Academic Affairs Office issues the Liberal Arts Quarterly Bulletin to inform students 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, 812 Volunteer Blvd., cooperates with the various departments and colleges of the University with respect to the development of curricular changes which incorporate the Black experience into academic and extracurricular programs of the institution, 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.

Black Cultural Center
The Black Cultural Center represents one effort by the University to promote greater awareness of the nature of the Black experience and the contribution of Black America to the national past. The Center seeks to fulfill this role through a variety of programs and occasions. Typical of its cross-campus work is sponsorship of Black History Week, and the Black Arts Festival. Within the Center itself exhibits related to the Afro-American past, small group lectures, group study sessions, and a tutorial program aimed especially at minority students are a few of the ongoing activities.

The Center is located at 812 Volunteer Blvd. All members of the University community are invited to visit this location and utilize the opportunities provided by the Center. The Center provided knowledge about the Black experience.

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 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 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), Hesler (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 studies.

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; J.B. Gregg, M.D. Iowa; R.M. Greer, O. Michigan; P.W. Parmalee, Ph.D. Texas A&M.

Associate Professors: C.H. Faulkner, Ph.D. Indiana; I. Harrison, Ph.D. Syracuse; R.L. Janz, Ph.D. Michigan; M.C. McCollough, Ph.D. Pennsylvania.

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


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.

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 America.

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.

3070 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. 2530 recommended.

3440 Religion of Primitive Peoples (3) Religions of nonliterate peoples. Place of religion in their social and cultural systems. 2530 recommended. (Same as Religious Studies 3440.)

3450 Community Studies in Complex Culture (3) Review of cross cultural comparative urban and village communities and methodologies used in community studies. 2530 recommended.
3490 African Religions (4) (Same as Religious Studies 3490 and Black Studies 3490)

3510 Peoples and Cultures of Mainland Asia (3) Anthropological survey of indigenous cultures of mainland Asia. Cultural diversity and human ecology in a real perspective. 2530 recommended.

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. 2530 recommended.

3540 North American Indians (3) Ethnographic survey of cultures of Arctic, Southwest, Plains and Eastern areas. Emphasis on cultural differences of peoples occupying these areas during pre-colonial period. 2530 recommended.

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.

3610 Archaeology of United States and Canada (3) Survey of prehistoric peoples north of Mexico from initial occupation to European contact. 2530 recommended.

3620 European Prehistory I (3) Cultural developments during Paleolithic, Mesolithic, and Neolithic periods. 2530 recommended.

3630 European Prehistory II (3) Cultural development from Neolithic through Iron Age. 2530 recommended. 3620 and 3630 should be taken in sequence.

3640 Ancient Civilization of Mesoamerica (3) Introduction to the history and areas of areas of advanced Indian culture in Mexico and Central America beginning with earliest cultures and proceeding to contact with Europeans. 2520 recommended.

3710 European Folk Culture (3) Traditional aspects of life as expressed in technology, beliefs, arts, 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. 2530 recommended.

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 anthropol. 2510 recommended.

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 race formation; analysis of studies concerning blood groups, race mixture, constitution growth and nutrition. 2510 recommended.

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

4101 Foreign Study (1-16) See page 167.

4102 Off Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

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

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

4240 Applied Cultural Anthropology (3) Applications of anthropological theory, methods and findings in pre-existing community and national development, public health, international aid, and military assistance. Examination of roles of anthropologists, questions of values and ethics in intervention schemes, and of organization of planned change in applied programs. Intensive analysis of selected case studies. Prereq: 2530.

4250 Medical Anthropology: Lecture (3) Survey of medical anthropology. Emphasis on Western and non-Western cultural aspects 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 anthropological majors with senior standing. Others by permission of instructor. May be repeated to a maximum of 9 credit hrs.

4340 Field Work in Archaeology (3-9) Practicum for archaeological field survey, excavating, processing, and analyzing of data; intensive reading. Prereq: 2510-20-30, and permission of instructor. May be repeated to a maximum of 9 credit hrs.

4350 Field Work in Cultural Anthropology (3-9) Practicum involving fieldwork methods, ethnographic fieldwork reporting, survey and interview techniques, and devising and carrying out of fieldwork projects. Prereq: 2510-20-30 and permission of instructor. Strongly recommended for 2510. 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 influences influence cultural 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.

4480 Current Trends in Anthropology (3) Analytical integrative review in symposium of current debates, research directions, theories, fieldwork methods, and general assumptions of the four subfields of anthropology, archaeology, physical anthropology, linguistics, and cultural anthropology. Required of anthropology majors in senior year. Prereq: Senior standing.

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 degree of tolerance for sexual deviation in various cultures.

4500 Peoples of China: Chinese Society Before 1839 (3) An introduction to the social structure 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 intense Western contact, rejection of the West, and development of modern, communist Chinese society and culture. Prereq: 2530 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 Amerind 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 Perspectives (3) Character, factors, and motivations in Asian immigration to North, Central and South America. Assimilation pattern and enclaves communities 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.

4600 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.

4610 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.

4640 Zooarchaeology (3) Basic osteological studies of vertebrae 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.

4650 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: 4960 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)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5140 Seminar in Zooarchaeology (3)

5149 Laboratory Studies of the Vertebrate Skeleton (4)

5160 Seminar in Archaeology (3-9)

5210 Community Anthropology: The Local Community (3)

5340 Fieldwork in Archaeology (3-9)

5400 History of Anthropological Theory (3)

5440 Peasant Societies (3)

5450 Comparative Social Organization (3)

5460 Quantitative Methods in Anthropology (3)

5510 Seminar in Entomology 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)

5640 Archaeological Resource Management (3)

5660 Seminar in Prehistoric Lithic Technology (3)

5670 Seminar on Aboriginal Lithic Resources (3)

5700 Theory in Folk Culture Studies (3)

5710 Problems in Folk Culture Studies (3)

5910 Measurement of Man (3) Prereq: 2510 or permission of language.

5920 Advanced Physical Anthropology (3)

5930 The Human Skeleton in Forensic Medicine (3)

5940 Skeletal Biology of Early Human Population (3)

5945 Comparative Primate Anatomy (4)

5950 Paleopathology (4)

5960 Dermatoglyphics (3)

5970 Emergence and Early Evolution of Man (3)

5980 Neandertal Man and Human Evolution (3)

5990 Human Variation (3)

6000 Doctoral Research and Dissertation

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:
C.K. Ewing (Head), M.A. Carnegie Institute of Technology; R.A. Clarke, M.S. Wisconsin; D.G. Cleaver, Ph.D. Chicago; W.F. Loy, M.F.A. Wichita; P.G. Nichols, M.F.A. Michigan; W.H. Stevens, M.F.A. Illinois

Associate Professors:

Assistant Professors:

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

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

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

UNDERGRADUATE

B.A. 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. Graduates normally requires a knowledge of at least two foreign languages.

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

Minor: none offered.

For information regarding the Bachelor of Fine Arts degree, see page 163.

1115-25 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 hours.

2105 Introduction to Drawing (4) Prereq: 1115.

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

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

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

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 hours.


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, outdoor advertising. Non-art majors only.

2545-55-65 Photo-Graphic (4, 4, 4) Introduction to art of Photography.

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

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

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

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

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. 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 Typography (4) Theories and techniques of typography and printing as a fine art medium. 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: 2525.


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: 1500-1600 (4) Painting and printmaking of the low countries, France, Germany, and England. Includes international style manuscripts, van Eyck, Bosch, Durer, 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 Manners.

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, Valdiviez, Zurbaran, and Montaflés, 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 Oriental Art (3) 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 167.

4102 Off-Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

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 II (2) Political, social, economic, and moral problems of contemporary designer. Prereq: 4515.

4615 Eagles 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)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

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

5140 Drawing and Composition (3, 3, 3)

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

5310-30 Watercolor Painting (3, 3, 3)

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

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

5510-20-30-40-50 Communication Design (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. Mandel, Ph.D. Washington; H.A. Peterson, Ph.D. Illinois; B. Silverstein, Ph.D. Purdue.

Associate Professors: P.J. Carney, Ph.D. Iowa; C.G. Maisel, M.Ed. Texas; I.V. Nabelek, Ph.D. Czech Technical, Prague.

Assistant Professors: S.B. Burchfield, Ph.D. Michigan State; T.O. Davidson, M.A. Tennessee; C.J. Ferrell, M.A. Tennessee; T.P. Marquardt, Ph.D. Washington.


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 or 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, 4320, 4460, 4470, 4560, 4730, 4750, 4940, 4990; Psychology 2500, 2520.
B. Concentration in Aural Rehabilitation. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 3310, 3400, 4060, 4450, 4610, 4710, 4720, 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, 3070, 3200, 3310, 4040, 4049, 4060, 4310, 4320, 4330, 4340, 4400, 4610, 4710, and 4720.

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 CFS 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, 4330, and 4610.

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.

3060 Speech Science I (3) Nature of speech science; basic outline of communication; acoustic characteristics 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 4040 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 for majors. (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 167.

4102 Off Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

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 integration. Review of psychotherapy and counseling procedures. (Same as Special Education 4310.)

4320 Clinical Practice in Speech Pathology (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 (1-6) Prereq: 3040, 3050, 3310, 4040, and permission of instructor. Satisfactory-No Credit. (Same as Special Education 4330.)

4330 Clinical Practice in Speech Pathology (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 (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 a 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 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 Audiology Laboratory. Prereq: Permission of instructor. Undergraduate credit only. (Same as Special Education 4719.)

4720 Audiology (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 (1-6)

5050 Practicum in Aural Habilitation and Rehabilitation (1-6)

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)

5320-30 Advanced Clinical Practice in Speech Disorders (1-6, 1-6, 1-6)

5350-60 Advanced Clinical Practice in Speech Diagnosis (1-6, 1-6, 1-6)

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)

5503 Seminar in Advanced Audiological Procedures (3)

5520 Seminar in Speech Pathology (3, 3, 3)

5540 Seminar in Language Pathology (3)

5550 Special Problems in Speech Pathology (1-3)

5560 Independent Study in Speech Pathology (1-3)

5600 Independent Study in Audiology (1-6)

5610 Practicum: Language Pathology in Children (3)

5651 Seminar in Language Differences (3)

5790 Seminar in Psycholinguistic Concepts in Speech Pathology (3)

5950 The Verbo-intonal System (3)

6000 Doctoral Research and Dissertation

6010 Experimental Phonetics (3)

6020 Psychoacoustics (3)

6060 Applied Anatomy and Physiology of Speech Mechanism (3)

6070 Experimental Techniques in Cochlear Physiology and Neurophysiology (3)

6080 Seminar in Speech Science (3)
6090 Seminar in Hearing Science (3)
6110 Experimental Design in Speech and Hearing (3)
6117 Theories of Hearing (3)
6500 Advanced Seminar in Audiology (3)
6520 Advanced Seminar in Speech and Language (3)
6560 Directed Research (1-8)
6570 Directed Study in Speech Pathology (1-3)
6580 Directed Study in Audiology (1-3)
6590 Directed Study in Speech Science (1-3)
6600 Directed Study in Hearing Science (1-3)

Bacteriology
See Microbiology.

Biochemistry (188)

Professors: J.W. Greenanwalt (Head), Ph.D. Purdue; J.E. Church, Ph.D. (University of Virginia); K.J. Monty, Ph.D. Rochester; T.P. Salo, Ph.D. Michigan.

Associate Professor: J.G. Joshi, Ph.D. Poona (India).

Assistant Professors: R.H. Feinberg, Ph.D. California (Berkeley); S.W. Hawkins, Ph.D. Chicago; B.C. Kline, Ph.D. Michigan State.

UNDERGRADUATE
No major is offered, although course work in Biochemistry is applicable to majors in Biology and Chemistry.

For the Bachelor of Arts Degree with a minor in biochemistry, the following courses are required: Chemistry 2140-49, 3211-21-31, 3219-29-39, and Biochemistry 4110-20 and 4119. Additional credits from Biochemistry 4210-20-30 and/or 4510-20-30 are desirable.

4110-20 Cellular and Comparative Biochemistry
Electrolyte behavior; chemistry and structure of proteins; enzyme behavior and biological function; catalysis, energy capture, synthetic metabolism; nucleic acid function, protein synthesis and biochemical genetics; regulation of biological processes. Must be taken in sequence. Prereq: Chemistry 3211-21-31 and an introductory course in biology (i.e., Biology 1210-20-30 or Botany 1110-20-30). Three lectures and discussion.

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-Huckel model; electrochemistry; membrane permeability. 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 biology.

4230 Introduction to Physical Biochemistry
Physical characterization of macromolecules; polarized light, absorption and fluorescence, sedimentation and transport hydrodynamics, electrophoretic mobility, light scattering, and structural x-ray crystallography of proteins and nucleic acids. Prereq: 4220 or Chemistry 3430, or equivalent.

4500 Independent Research in Biochemistry
Special experimental problems under direction of staff member. Limited to undergraduates, and by permission only. May be repeated for credit. Prereq or coreq: 4110-20, 4119.

1 Or equivalent honors courses.

GRADUATE
The Master's Program
Master's degree requirements are found in the Graduate School Catalog. Candidates usually should offer an undergraduate major in either biology or chemistry.

The Doctoral Program
Requirements for the Doctor's degree are found in the Graduate School Catalog. An incoming student must present an undergraduate major in either chemistry or biology.

5000 Thesis
5010 Biochemical Techniques (2)
5110 The Metabolism of Nitrogen Containing Compounds
5120 Membranes, Compartmentation, and the Regulation of Energy Metabolism (3)
5130 Protein Structure and Enzyme Function (3)
5220 Structures and Functions of the Nucleic Acids (3)
5230 Protein Synthesis and Its Role in Metabolic Regulation (3)
5300 Graduate Research Participation (3-9)
5310-20-30 Experimental Techniques (2, 2, 2)
5450 Special Topics (1-3)
6000 Doctoral Research and Dissertation
6110 Enzyme Kinetics and Mechanisms of Enzyme Action (1)
6120 Functions of the Vitamins (1)
6130 Functions of the Trace Elements (1)
6210 Structure and Function of Macromolecules (1)
6220 Biochemical Genetics (1)
6230 Metabolic Regulation (1)
6310 Biological Energy Transformations (1)
6320 Antigen-Antibody Interactions (1)
6330 Biochemistry of Specialized Physiological Processes (1)
6410-20-30 Current Topics in Biochemistry (2, 2, 2)

Biology (190)

Coordinator: K.J. Monty

A major in Biology may be met by completing one of the two following concentrations:

A. Concentration in Cell Biology
Consists of Biology 3110-20-30, Chemistry 3211-21-31, 3219-29-39, Biochemistry 4110-20, and 12 hours from approved upper division courses in Biochemistry, Botany, Microbiology, and Zoology. 1 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.

1 Biochemistry 4119, Botany, any 3000- or 4000-level courses (except 3050, 3070, 3090); Microbiology 3000-09, 3071-79, 4111-21, 4210-20-30, 4521-29, 4811-19, Zoology 3050, 3080, 3090, 3150, 3320, 4010, 4050, 4110-20-30, 4250, 4280, 4310, 4369, 4380, 4450, 4610-20. (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.

1210-20-30 General Biology (4, 4, 4) Principles of Biology 1210—Origin and diversity of living systems. 1220—Control systems, the biological power structure. 1230—Environmental biology. Students who receive credit for 1210-20-30 may not also receive credit for Botany 1110-20-30.

3110 General Genetics (4) Classical and modern principles of heredity. Prereq: 1210-20-30 or Botany 1110-20 or the equivalent of two years of high school biology and satisfactory ACT scores; Chemistry 1110-20-30. 3 hrs and 1 additional class meeting. May be taken in any sequence or combination with 3110 and 3130.

3120 Cell Biology (4) Organization and function of the cell. Prereq: Same as 3110. 3 hrs and 1 additional class meeting. May be taken in any sequence or combination with 3110 and 3130.

3130 General Ecology (4) Relations between organisms and their environment, including human environmental problems. 3 hrs and 1 additional class meeting. Prereq: Same as 3110. May be taken in any sequence or combination with 3110 and 3120.

College of Liberal Arts 173
Black Studies
See Cultural Studies.

Botany (198)

Professors:
R.W. Holton (Head), Ph.D. Michigan; E.E.C. Clebsch, Ph.D. Duke; H.R. DeSelm, Ph.D. Ohio State; W.R. Herndon (Vice Chancellor for Academic Affairs), Ph.D. Vanderbilt; L.R. Hester (Emeritus), Ph.D. Cornell; G.E. Hunt, Ph.D. Cornell; L.W. Jones Ph.D. Texas; J.F. McCormick (Director of Ecology Program), Ph.D. Emory; F.H. Norris, Ph.D. Ohio State; J.S. Olson, Ph.D. Chicago; R.H. Peterson, Ph.D. Columbia; A.J. Sharp (Emeritus), Ph.D. Ohio State; P.L. Wine, Ph.D. Texas.

Associate Professors:
C.C. Arundae, Ph.D. Colorado; S.L. Bell, Ph.D. Chicago; J.D. Caponetti, Ph.D. Harvard; A.M. Evans, Ph.D. Michigan; A.S. Heilman, Ph.D. Ohio State.

Assistant Professors:

Instructor:

Lecturer:
J. Witherspoon, Ph.D. Tennessee

ORNL

UNDERGRADUATE

Major: Consists of Biology 3110, 3120, 3130; 23 upper division hours of Botany including 3210 and 4710-20-30; plus 4 hours of upper division courses from a related biological science (Zoology, Microbiology, Biochemistry, Agricultural Biology, Forestry, or Plant and Soil Science). Not more than 3 hours from 3050, 3070, 3090 allowed for minor credit. Prerequisites to this major are Botany 1110-20-40 or 1118-28 or Biology 1210-20-30' and Chemistry 1110-20. Corequisites are Math 1840-50 or Math 1550-60, Physics 1210-20-30 or Physics 2210-20-30 or Chemistry 3211-21-31, 3219-29-39 or Geology 1510-20 plus 4 additional hours in Geology.

Minor: Consists of Biology 3110-20-30 and 15 upper division hours in Botany. Not more than 3 hours from 3050, 3070, 3090 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).

1 Students with 2 years of high school biology and satisfactory ACT scores may, with the permission of the department, omit the freshman year sequence and enter Biology 3110-20-30 directly (see course listings under Biology).

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-tutorial 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 natural science section of American College Testing Program, and sophomores who have a cumulative grade point average of 3.25 or (3.5 in the sciences) or who are approved through an interview with member of botany faculty. Students receiving C or D in 1118 must transfer to 1120. 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 angiospermae; emphasis on evolutionary relationships, morphology and development. Not for botany graduate credit. Prereq: 6 hrs in biological sciences.

3030 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.

3031-32 Field Botany (4, 4) Emphasis on fall and winter flora, respectively. Prereq: 3030. Need not be taken in sequence.

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 implications 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.)

3130 Introductory Plant Pathology (4) Same as Agricultural Biology 3130.

3210 Introductory Plant Physiology (4) Organismal physiology of plants; water relations, mineral nutrition, morphogenesis, elements of metabolic processes, effects of age, light, natural rhythms, 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 approval only. May be repeated with permission of Department.


4240 Paleobotany (4) (Same as Geology 4240.)

4310 Plant Ecology (4) Interactions between individuals, species communities and their environments. Circulation of energy and matter in ecosystems. Weekly field trips or laboratory periods, and at least two week-end field trips. Prereq: 3030 or equivalent.

4410-20-30 Undergraduate Research Participation (2, 2, 2) Experience in active research projects under supervision of staff members. Prereq: Junior or senior standing, minimum grade average 3.0, permission of instructor.

4550 Botanical Microscopy (4) Theory and methods of preparing living and preserved plant materials for light microscopy, employing fixation, staining and sectioning. Data recording by graphic and photomicrographic techniques.

4710-20-30 Senior Seminar (1, 1, 1) Required of all botany majors. Prereq: Senior standing.

GRADUATE

5000 Thesis

5011 Mycology (4)

5012 Morphology and Evolution of Phycocyes (4)

5013 Morphology and Evolution of Ascomycetes (4)

5017 Field Mycology (4)

5021 Bryology (4)

5022 Lichenology (4)

5031 Vascular Plant Taxonomy (4)

5061 Phyiology (4)

5070 Principles of Biological Illustration (3)

5080 Pteridology (4)

5090 Morphology and Evolution of Basidiomycetes (4)

5120 Agrostology (4)

5150 Advanced Morphology of Flowering Plants (4)

5160 Biosystematics (4)

5210 Advanced Plant Physiology I (3)

5220 Advanced Plant Physiology II (3)

5290 Quaternary Problems (4)

5310-20-30 Special Problems in Botany (1-6, 1-6, 1-6)

5340 Plant Geography (4)

5350 Analysis of Plant Communities (4)

5410-20-30 Seminar in Teaching of College Botany (1, 1, 1)

5510-20-30 Systems Ecology (3, 3, 3)

5780 Plant Cytology (4)

5800 Experimental Cell Biology (4)

5810 Cytogenetics (4)

5820-21-22-23-24 Methods and Instrumentation in Laboratory Investigations (1, 1, 1, 1, 1)

5830 Field Methods in Plant Ecology (4)

5840 Microbes in Ecosystems (3)

5850-51-52-53-54 Methods and Instrumentation in Field Investigations (1, 1, 1, 1, 1)

5910-20 Developmental Plant Morphology (3, 1)
6010 Advanced Topics in Morphology of Vascular Plants (2-4)
6060 Advanced Topics in Cryptogamic Botany (2-4)
6210 Photobiology (2)
6310 Advanced Topics in Cytology and Cell Biology (2-3)
6320 Ecosystems of the World (3)
6420 Advanced Topics in Genetics (2-4)
6620 Seminar in History of Botany (2)
6630-50 Radiation Ecology (2, 2, 2)
6820 Advanced Topics in Plant Physiology (2-4)
6830 Advanced Topics in Ecology (2-4)
6930 Advanced Topics in Systematic Botany (2-4)

Chemistry (235)

Professors: D. A. Shirley (Head), Ph.D. Iowa State; N. S. Bowman, Ph.D. Princeton; C. A. Buehner (Emeritus); Ph.D. (Emory); D. D. D. C. Collins, Ph.D. Northwestern; J. A. Dean, Ph.D. Mich. State; J. F. Eastham, Ph.D. California (Berkeley); W. H. Fletcher, Ph.D. Minnesota; C. W. Keenan (Associate Dean), Ph.D. Texas; A. DeMolle, Ph.D. Princeton; M. H. Liezke, Ph.D. Wisconsin; G. Mamontov, Ph.D. Louisiana State; A. D. Melven (Emeritus); Ph.D. (Emory); D. D. O'Kelley, Ph.D. California (Berkeley); G. W. Schaller; W. D. Illinois; G. R. Smith, Ph.D. Virginia; H. A. Smith (Vice Chancellor for Graduate Studies and Research), Ph.D. Harvard; W. T. Smith (Emeritus), Ph.D. Ohio State; J. A. Van Hook, Ph.D. Johns Hopkins; J. T. Williams, Ph.D. London (England); J. H. Wood (Emeritus), Ph.D. North Carolina.

Associate Professors: J. E. Bloom, Ph.D. Manchester (England); J. Q. Chambers, Ph.D. Kansas; C. A. Lane, Ph.D. California (Berkeley); J. W. Larsen, Ph.D. Purdue; R. M. Magid, Ph.D. Yale; R. J. Peterson, Ph.D. California (Berkeley); E. L. Whrey, Ph.D. Purdue.

Assistant Professors: J. L. Addock, Ph.D. Texas; R. G. Gaubner, Ph.D. Stanford; F. A. Grimm, Ph.D. Cornell; W. J. B. Hart, Ph.D. Purdue; J. R. Kinslie, Ph.D. Aiken; L. I. Magid, Ph.D. Tennessee; R. M. Magid, Ph.D. Scholl; Ph.D. Indiana; C. Woods, Ill; Ph.D. N. Carolina State.

Alumni Distinguished Service Professor.

For information regarding the Bachelor of Science in Chemistry degree and the cooperative program in chemistry, see page 166.

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

1. 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, Geochromistry, etc. This program has similarities to that leading to the degree of Bachelor of Science in Chemistry, (page 166), but with more opportunity for selection of electives outside the department and outside of 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.

The prerequisites consist of Chemistry 2140, 2149, 3211-21-31 or 3511-21-31 (latter recommended), 3219-29-39 or 3219, 3529-39 (latter recommended), 3410-30-30, 4329 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 specifically 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 ecology. 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 elective hours which may be employed in fields which are related to Chemistry. Concentration B is not appropriate for students intending to become professional chemists.

The general requirements 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; (b) Geology 1510-20; (c) Biology 1210 or (d) Biochemistry 3110-20 and Microbiology 3000, 3008, (e) Botany 1110-20. The concentration consists of Chemistry 2140, 2149, 3211-21-31 or 3511-21-31 (latter recommended), 3219-29-39 or 3219, 3529-39 (latter recommended), 4190-30-30, 4929 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 major courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences:

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

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 needs to complete the 1110 series after having complete 1510 or 1610 may obtain permission to substitute either 1510 or 1610 for 1110. Such permission is obtained through the Chemistry Department and then he may take 1110 followed by 1130. However, no quarter of the 1510 or 1610 sequences may be substituted for the 1110. The student 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 student who has already made considerable progress in science. Selection is based on placement test scores and the high school chemistry grade. A grade of A or B in 1118 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 130 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 to the head of the department for permission to take a proficiency examination in one or more quarters of freshman chemistry. If a satisfactory grade 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 of theoretical and descriptive chemistry, 1110—Modern atomic theory, chemical bonding, stoichiometry and quantitative treatment of gas laws. 1120—Quantitative aspects of solution chemistry (kinetics, chemical equilibria, and thermodynamics). 1130—Descriptive chemistry of nonmetallic and metallic elements, electrolytic conductivity, and the chemical properties of gas formation. 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. 3 hrs and 1 lab.

1420 Chemistry for Nurses 4 Agricultural and biochemical chemistry. Prereq. 1410. 3 hrs and 1 lab.

1510-20-30 General Chemistry 4, 4, 4 Introductory course with emphasis on topics relating to living systems. 1510—Bonding and molecular structure, gas laws, liquid and solid state, solutions, colloids. 1520—Acids and bases, oxidation and reduction, kinetics and equilibria. Introduction to organic chemistry, alkenes, unsaturated and aromatic hydrocarbons. 1530—Structure and reactions of various organic functional groups. Introductory biochemistry—amino acids and proteins, carbohydrates, lipids, nucleic acids. Must be taken in sequence. 3 hrs and 1 lab.

1610-20 Chemistry and Society 4, 4 Chemistry for non-science majors. Basic principles of chemistry, particle nature of substances, their structures and chemical changes. Must be taken in sequence. 3 hrs and 1 lab.

1630 Chemistry and Society 4 The impact of chemistry on modern society, with selected topics in areas of geochemistry, biochemistry, organic chemistry and radiochemistry. Prereq. 1 year of General Chemistry or 1620. 3 hrs and 1 lab.


2149 Analytical Chemistry 1 Experiments on topics discussed in 2140. Prereq or coreq: 2140. 1 lab.

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

3000 Searching the Chemical Literature 2 Use of abstracts, journals, reference, compendia, books, chemical journals and other sources of chemical
information. 2 hrs. Open only 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. Corresponding laboratory (3212-29-39) 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.
3429-39 Physical Chemistry Laboratory (1, 1) Gases, liquids, chemical equilibria, solutions, phase equilibria, reaction kinetics and electrochemistry. The corresponding courses (3429 and 3430) are corequisites.
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 spectroscopy and physical techniques to elucidate reaction mechanisms. Recommended for chemistry majors and students planning a career in biological or biomedical sciences. Must be taken in sequence. Prereq: 1110-20-30. Corresponding laboratory: 3219-29-39 or 3219, 3529-39 is a corequisite, latter is recommended.
3529-39 Organic Chemistry Laboratory (1, 1) Experiments on topics discussed in 3211-21-31. Similar to 3229-39 except designed for students who have need for operating knowledge of various spectroscopic and chromatographic 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. Prereq: Math 1500 or equivalent. 1 yr of General Chemistry.
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 had one year of physical chemistry.) 4160—The three laws of thermodynamics, phase equilibria and solutions, and chemical equilibria. 4170-Gases and 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; spectrophotometric techniques. Prereq: 2140-40.
4219 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4210. Coreq: 4210.
4220 Advanced Analytical Chemistry (3) Electroanalytical methods of analyses (including potentiometry, coulometry, polarography, voltammetry); magnetic resonance methods; mass spectrometry; x-ray absorption and fluorescence techniques. Prereq: 2140-49, 3420 or 4620 recommended.
4229 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4220. Coreq: 4220.
4420 Physical Inorganic Chemistry (3) Theoretical concepts leading to an understanding of inorganic chemistry; quantum theory of the atom, principles of molecular structure, and elementary nuclear chemistry. Prereq: 3410-20-30, 4110.
4430 Intermediate Inorganic Chemistry (3) Application of theoretical concepts to inorganic elements, their chemical states, and their reactions. Prereq: 4420.
4510 Organic Qualitative Analysis (3) Identification of pure organic compounds and mixtures. Prereq: 3211-21-31, 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 applications 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. Prereq: 3211-39 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. Prereq: Physics 2310.
4710-20-30 Research in Chemistry (2, 2, 2) Open to senior majors with permission of department head. Written reports must be submitted to research director at termination of project.
4910-20 Biophysical Chemistry (3, 3, 3) Physicochemical principles with applications to biological systems. Must be taken in sequence. Not open to students having 3410-20-30. 4910—Gas laws, first, second and third laws of thermodynamics; equilibria. 4920—Solution chemistry; electrochemistry; kinetics; nuclear chemistry; 4930—Elementary quantum chemistry; optical and magnetic spectroscopy, light scattering, macromolecular properties. Prereq: 1110-20-30, Math 1540-50 or equivalent.
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 prereq for 4929. 4930 is coreq or prereq for 4939. 1 lab.

GRADUATE

Students majoring in chemistry for the M.S. or Ph.D. degree are required to present 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, 3)

5129 Advanced Organic Chemistry Laboratory (3)

5140 Introductory Polymer Chemistry (3)

5150 Kinetics of Polymerization (3)

5160 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)

5340-50-60 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)

6160 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)

6460 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)

6750 Molten Salt Chemistry (3)

6810 Vibrational Problems in Molecular Spectra (3)

6820 Molecular Vibrations-Rotation Theory (3)

6811 Selected Topics in Nuclear Chemistry (3)
Classics (257)
Professors: H.C. Rullidge (Head), Ph.D. Ohio State; A. Rapp (Emeritus), Ph.D. Illinois.
Associate Professor: M.L. Henbest, M.A. Arkansas.
Assistant Professors: G.C. Gesell, Ph.D. North Carolina (Chapel Hill); B.J. Levy, Ph.D. Texas; P.J. Nassen, Ph.D. Ohio State; J.E. Shelton, Ph.D. Vanderbilt.

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, 3320, 3330. 4101 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: Classics 3210-20-30, 3310, 3320, 3330.

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) Must be taken in sequence.
2511-21 Intermediate Latin (4, 4, 4) Prereq: 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.
3140 Ovid (3) Prereq: 3 or 4 years of high school Latin or 2521.
3150 Plautus and Terence (3) Prereq: 3 or 4 years of high school Latin or 2521.
3150 Catullus (2) Prereq: 3 or 4 years of high school Latin or 2521.
3440 Livy (3)
3450 Pliny and Martial (3)
3460 Elegiac Poets (3)
4110 Seneca, Essays and Letters, or Tragedies (3)
4120 Horace, Satires and Epistles (3)
4130 Catullus; Martial (3)
4140 Cicero and Techniques of Latin Prose Composition (4) Recommended for Latin majors and minors, especially those intending to teach or pursue graduate work. Works of Cicero studied as models for prose composition.
4310 Selected Readings from Latin Literature (3)
4320-30 Selected Readings from Latin Literature (3, 3) May be repeated for credit.
4340 Horace, Odes (3)
4350 Tacitus (3)
GRADUATE
5000 Thesis
5110 Seminar in Caesar (3)
5140-20-30 The Latin Epic. Lucretius, Virgil, Lucan (3, 3, 3)
5510-20-30 Roman Comedy. Plautus, Terence (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. 4101 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.

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.
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.

3030 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 programming or permission of instructor.

3150 Introduction to Numerical Algorithms and Programming (3) Roots of equations, systems of linear equations, least-squares data fitting, numerical integration, numerical methods for ordinary differential equations. Prereq: Coreq: Math 2860. 2 lectures and 1 two-hour lab; 3150 and 3155 may not both be taken for credit; students with no knowledge of FORTRAN should take 3155. (Same as Math 3150).

3155 Introduction to Numerical Algorithms (3) Roots of equations, systems of linear equations, least-squares data fitting, numerical integration, numerical methods for ordinary differential equations. Coreq: Math 2860. 3 lectures; 3150 and 3155 may not both be taken for credit; students with no knowledge of FORTRAN should take 3150. (Same as Math 3155).


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 computable functions, graph theory and its applications to computer systems; set theoretical characterization of computing machine languages and languages. Prereq: 3150 or permission of instructor.

4020 Introduction to Algorithms, Languages, and Automata (3) Introduction to finite automata; effective procedures and languages; formal machine models and grammars. Prereq: 4010 or equivalent.

4035-45 Introduction to Numerical Linear Algebra (3, 3) Floating-point numbers and arithmetic on modern digital computers, numerical algorithms for solving systems of linear equations; linear least-squares methods and eigenvalue computations. Prereq: 3150 or 3155. (Same as Math 4035-45).

4225-35 Introduction to Numerical Analysis (3, 3) (Same as Math 4225-35).

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 2100 or equivalent. 3 lectures. Not for credit for persons who have credit for a computer course.

4320 File Management and Data Processing (3) Applied computer programming. Error analysis of FORTRAN programs; overlay structures, maintenance of tape and direct access information storage files, use of utility programs, sort and merge. Not for credit for Partial Differential Equations majors. Prereq: one course in FORTRAN program.

4330 Special Problems in Applied Programming (3) Applied programming in area of student's primary interest, using the digital computer. To be directed jointly by Computer Science faculty and students' faculty advisers. Oral and written reports. Prereq: 4320 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 of digital computers. Assumes knowledge of FORTRAN programming language. Prereq: 2010, 3150, or 3030 or permission of instructor.


4430 Computer Organization and Programming III (3) Computer organization and advanced programming. Machine language and design of computers representation of information, software system, input/output systems, interpreters, macro assemblers, compiler techniques and language specifications. Prereq: 4420 or equivalent.

4510 Data Structures and Nonnumeric Programming (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, program languages for information structures. Prereq: 4420 or consent of instructor.

4510-20 Operating Systems (3, 3) Hardware interrupt systems and concurrency of input/output operations, simple input/output systems and program execution, 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, multiprocessors, 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; system implementation; system justification; personnel in systems, perspective on systems. Prereq: 4420 or consent of instructor.

4980-90 Special Studies in Computer Science (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)

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)

5455 Finite Difference Methods for Partial Differential Equations (3)

5485 Mathematical Aspects of the Finite Element Method (3)

5655-65-75 Numerical Mathematics (3, 3, 3)

5670-80 Advanced Operating Systems (3, 3)

5710-20 Automata Theory (3, 3)

5810 Information Organization and Retrieval (3)

5840-50 Introduction to Pattern Recognition (3, 3)

5910-20-30 Special Topics in Computer Science (1-3, 1-3, 1-3)

5940-50 Advanced Small Computer Systems (3)

5970-80-90 Seminar (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, Greco and Roman Civilization, Latin American Studies, Medieval Studies, and Russian and East European Studies. Minors are provided in Asian Studies, Black Studies, Comparative Literature, Latin American Studies, Medieval Studies, and Women's Studies.

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 2010-20,30, 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 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 as they are, drawing upon vast literature which deals with these questions.

4010 Topics in American Culture (3) Content varies. May be repeated once.

Asian Studies (145)

This concentration consists of 36 quarter-hours, including Asian Studies 2510-20 and at least eight hours from Asian Studies 3310-20-30-40. In addition to courses with Asian Studies numbers, courses from at least two other departments must be selected. The Asian Studies minor consists of 24 quarter-hours, including Asian Studies 2510-20 and at least four hours from Asian Studies 3310-20-30-40. Students completing the minor successfully will upon application to the program chairperson be awarded the Asian Studies certificate in acknowledgement of the work. In addition to courses with Asian Studies numbers, courses from at least two other departments must be selected from the list below.

For further information consult the chairperson of the Asian Studies Committee, Dr. Stephen Young.

Anthropology:
3510 Peoples and Cultures of Mainland Asia (3)
4500 Peoples of China I: Chinese Society Before 1839 (3)
4510 Peoples of China II: Chinese Society After 1839 (3)
4570 Peoples of Southeast Asia (3)
4590 Peoples of Japan (3)

Art
3775-77 History of Oriental Art (4, 4, 4)
4875-76-77 Studies in Oriental Art History (4, 4, 4)

Geography:
3870 Geography of Asia (4)

Music:
4260 Introduction to Ethnomusicology (3)

History:
3810-20-30 History of East Asia (3, 3, 3)
3780-90 History of the Middle East I, II (3, 3)
3795 Contemporary Middle East (4)
4811-21 History of Japan I, II (4, 4)
4870 Chinese History of China (3)
4880 History of Modern China (3)
4890 History of Contemporary China (3)

Political Science:
3621-22 Politics of Asian States (4, 4)
3641-42 Government and Politics of Middle East and North Africa (4, 4)

Philosophy-Religious Studies:
3630 World Religions (4)
3850 Philosophy and Religion in India (4)
3660 Buddhist Philosophy and Religion (4)
3670 Religion and Philosophy in China and Japan (4)

Religious Studies:
3680 Islam (4)
3760 Eastern Religions and Western Thought (3)
3770 Zen Buddhism (3)
4670 Topics in Eastern Religions (4)
4740-50-60 Elementary Sanskrit (3, 3, 3)
4770-80 Classical Sanskrit (3, 3)
4960 Transition, Change and Modernity in Asia (4)

Romance Languages
Arabic:
1510-20 Spoken Arabic (4, 4)
2510-20 Elementary Modern Standard (4, 4)
3510-20 Intermediate Modern Standard (4, 4)
3610 Islamic Literature in English Translation (4)

2510-20 Asian Civilization (4, 4) Introduction to Asian civilization by comparative study of development of religion, social institutions, and high culture in India, China, Japan, and the Islamic world. 2510-30 of classical civilizations 2520-traditional cultures and their modern developments.

2531-32 Elementary Chinese (4, 4) Must be taken in sequence.
3631-32 Elementary Japanese (4, 4) Must be taken in sequence.

3000 Selected Topics in Asian Studies (4)
3310-20-30-40 Asian Cultures (4, 4, 4, 4) Readings in translation from classical and modern literature together with study of religion/philosophy, society, art and music, 3310-India, 3320-China, 3330-Japan, 3340-Islam.

3531-32 Intermediate Chinese (4, 4) Prereq: 1521-22 or equivalent or permission of instructor; must be taken in sequence.
3631-32 Intermediate Japanese (4, 4) Prereq: 2821-22 or equivalent or permission of instructor. Must be taken in sequence.

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, 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)
3330 Prejudice and Racism in the United States (4, 4) Same as Sociology 3330.
3340 Sociology of Poverty and Inequality (4, 4) Same as Sociology 3340.
3490 African Religions (4, 4) Same as Religious Studies and Anthropology 3490.
3550 Religion and Racism in America (4, 4) Same as Religious Studies 3550.
3560 Black Religion in America (4, 4) Same as Religious Studies 3560.
3630-40 The Education of Black People (4, 4) Sequence will trace and analyze and interpret educational systems established for and by Blacks. Special emphasis will be given to colonial experience and the Washington-DoBois controversy in 3630; 3640 will deal with present urban educational problems of Blacks. Recent proposed remedies and solutions as integration, compensatory programs, decentralization, voucher systems. Black Studies and Freedom Schools will be discussed. 2010-20. History 1950-60 recommended. Prerequisite: consent of instructor.

4101 Foregin Study (1-16) See page 167.
4102 Off-Campus Study (1-16) See page 167.
4103 Independent Study (1-16) See page 167.
4200 Senior Seminar on Pan-Africanism (4) Explores concepts and philosophers of Pan-Africanism and implication of this ideology for various societal institutions.
4310 Research in Black Studies (4) Deals with Black experience and research process.
4500 Current Issues and Topics in Black Studies (3-4) Problems, topics and issues in area of Black Studies. Content and credit determined by instructor. May be repeated. Maximum credit 12 hours.
4810 Afro-American Families (3) (Same as Child and Family Studies 4810).
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. Prerequisite: consent of instructor.
4880 Afro-American Psychology (4) Same as Psychology 4880.
Anthropology 3530 Peoples and Cultures of Africa (3)
Anthropology 3930 Biology of the Races of Man (3)
Art 2725 Black Art (4)
CFS 4310 The Afro-American Family (3)
English 2540 The Literature of Black America (4)
English 4610-20-30 Black Literature (3, 3, 3)
Geography 3830 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)

College of Liberal Arts 179
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 3560 Black Religion in America (4)
Sociology 3330 Race, Class, and Power (4)
Sociology 3340 Sociology of Poverty and Inequality (4)
Sociology 4820 American Minority Ethnic Groups (4)
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 Chairperson of Black Studies 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 carefully selected 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, Religious 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 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 4050-60-70 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 is 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 era; 2420-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 view 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 210 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 related to disciplines (for example, courses in the History of Art and Architecture). A minor in Medieval Studies consists of Medieval Studies 210 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, 1113 McClung Tower.
It is strongly recommended that students selecting the Medieval Studies concentration choose a foreign language option for the Triad requirement (Latin or Spanish). 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 below.

Category #1
History, Philosophy, Political Science and Religious Studies.

History 3061 History of Western Religious Thought and Institutions (4)
History 3411 Renaissance (3)
History 3710 History of Germany (3)
History 3780 History of the Middle East (3)
History 4011 European History Colloquium (3) (when subject is part of medieval culture and society)
History 4500 History of Medieval England (3)
History 4710-20-30 Medieval History (3, 3, 3)
Philosophy 4430 Medieval Philosophy (4)
Political Science 3802 Studies in Political Thought (4)
Religious Studies 3061 History of Western Religious Thought and Institutions (4)
Religious Studies 3411 Renaissance and Reformation (3)
Religious Studies 4610 Topics in Western Religious Thought and Institutions (4) (when subject is part of medieval culture and society)
Category #2 Language and Literature
Classic 4210 Selected Reading from Latin Literature (3) (readings in Latin)
Comparative Literature 4012-22-32 Special Topics in Comparative Literature (3, 3, 3) (when subject is part of medieval culture and society)
Comparative Literature 4050-60-70 Dante and Medieval Culture (3, 3, 3)
English 4410 Introduction to Study of English Language (3) (no language requirement)
English 4420 History of English Language (3) (no prerequisites)
English 4490-20 Chaucer (3, 3) (readings in Middle English)
French 4350-60-70 Medieval French Literature (3, 3, 3) (readings in French)
French 4410 French Civilization (3) (readings in French)
French 3210 French Literature in English Translation (3)
German 4310 History of German Language (3) (readings in German)
German 3210 German Literature in English Translation (3-4)
German 3240 Old Norse Literature in English Translation (3)
Italian 4050-60-70 Dante and Medieval Culture (3, 3, 3) (readings in English or Italian)
Italian 4330 History of Italian Language (readings in Italian) (3)
Italian 4010 Italian Drama in English Translation (or in Italian) (3)
Spanish 4050-60-70 Hispano-Arabic Literature and Culture (in English Translation) (3, 3, 3)

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

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 in some branch of government service. Prerequisites to this track are Russian 2510-20 and 2640-50. The track consists of Economics 4000C; 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, 3260. 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 Eastern Europe.

Prerequisites to this track are Russian 2510-20 and 2640-50. 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; and 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 interdisciplinary seminar on a selected topic using a comparative approach.

Women's Studies (594)

Minor: Consists of Women's Studies 2010-20 and 16 hours of 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 Kurth.

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.

Cultural Studies (265)

UNDERGRADUATE

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 167.

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 167.

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 167.

GRADUATE

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

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 basic and applied 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 this program are: (1) 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 Geography (4)
5350 Analysis of Plant Communities (4)
5510-20-30 Systems Ecology (3, 3, 3)
5830 Field Methods in Plant Ecology (4)

Economics
4260 Economics of Resources (3)
4700 Air Pollution-Air Resources Management (3)

Forestry
4005 Forest Ecosystems (3)

Game Mammals (4)
4460 Game Birds (4)

5210 Seminar in Wildlife Conservation (3)
5220 Seminar in Forest Tree Biology (3)
5240 Seminar in Forest Genetics (3)

5610 Selected Topics in Climatology (4)

Geology
5290 Quaternary Problems (4)

Plant and Soil Science
4320 Soil Formation, Morphology, and Classification (4)
5240 Soil Productivity and Management (3)
5250 Pedology (4)
5810 Crop Climatology (4)
5820 Advanced Crop Physiology and Ecology (4)
Psychology
5750 Ethological Psychology (3)
Zoology
4240 Animal Ecology (4)
4660-70 Limnology (4, 4)
5570 Animal Populations (3)
5850 Insect Aecology (4)
5860 Geographic Distribution of Animals (4)
5870 Insect Systematics (4)

Economics (283)
See Faculty list, page 75.

Economics courses offered in the Department of Economics of the College of Business Administration provide opportunity for a major or minor in Liberal Arts. See page 75 for description of the courses available.

Information regarding requirements for a major or minor in Economics under the revised B.A. curriculum may be obtained in the departmental office or in the Liberal Arts Advising Center, 220 Ayres Hall.

Latin American Studies.
See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

English (339)


Assistant Professors: J.M. Armatstead, Ph.D. Duke; L.H. Burghardt, Ph.D. Chicago; D.R. Cox, Ph.D. Missouri; B.J. Gaines, Ph.D. Wisconsin; R.T. Goode, Ph.D. Texas; D.F. Gostee, Ph.D. Yale; N.M. Gostee, Ph.D. Yale; J.A. Koger, Ph.D. Rice; M.P. Richards, Ph.D. Wisconsin; F.K. Robinson, Ph.D. Texas.


1Alumni Distinguished Service Professor.
2John C. Hodges Professor.
3Visiting.
4On 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, which should be taken as soon as possible after the student has elected English as a major.
2. (Upper Division) One course in English, either (a) by taking 15 hours in the British and American upper-division surveys (6 hours in English 4991-92 and 6 hours from English 3010-20) and the remaining 6 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; or (b) 5-9 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.

Honor Programs—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, 3710-20, 4410-20, 4410-20, 4510, 4730, 4850, 4860, 4910-20.


C. Nineteenth and Twentieth Century: 3030, 3070, 3080, 3140, 3150, 3210-20, 3411-21-20, 3930, 3940, 4060, 4210-20-30, 4320-30-40, 4620, 4652, 4656, 4660, 4680.
D. Advanced Writing: 3450, 3460, 3470, 3830, 4960. 
Minor: 24 hours, including at least 18 at the upper-division level.

American Studies. See Cultural Studies

Comparative Literature. See Cultural Studies.

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.

Note: English 1510-20 and English 1518-28 are offered on a grade system of A, B, C-No Credit.

1111 Written and Oral English for Foreign Students (6) 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 excused from it on basis of English Proficiency Examination required of every new foreign student. Meets 10 hours a week.

1122 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, not at intensive level of English 1111. Meets five hours a week.

1121 English Composition for Foreign Students (3) 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: 1121 or recommendation based on English Proficiency Examination.

1131 English Composition for Foreign Students (3) Typical writing problems encountered by foreign undergraduate and graduate students, with attention to library research and to writing of research papers. Open to graduate students. Prereq: 1121 or recommendation based on English Proficiency Examination.

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. A, B, C, No Credit grading.

1518-28 Honors: English Composition (4, 4) For students selected on basis of placement scores and high school record. Must be taken in sequence. A, B, C, No Credit grading.

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

2150 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, 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 eighteenth and nineteenth centuries.

2560-70-80 Literature of the Western World (4, 4, 4) 2560—Ancient and medieval. 2570—Renaissance 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 techniques 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.


3150 Melville (3)

3160 The Short Story (3) British and Continental European, with emphasis on Twentieth Century.

3170 The American Short Story (3) From nineteenth-century beginnings to present, emphasis on twentieth century.


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

3330 Introduction to Study of English Language (3)

3340 Varieties of English (3) Theories, methodologies, and findings of English and American dialectology.

3411-12-20-30 Modern Drama (3, 3, 3, 3) 3411—Contemporary to 1930. 3412—Contemporary 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 I Henry IV, Twelfth Night, and Hamlet. 4020—Later plays, 1601-1613, with emphasis upon tragedies and dramatic romances.

4050-60 American Novel (3, 3, 3) 4050—From earliest sentimental novels through Brown, Cooper, and Kennedy, and major figures to 1875. 4060—Henry James and Mark Twain through early works of Faulkner and Hemingway.
American Novel (3) Early thirties to present.
4101 Foreign Study (1-16) See page 167.
4102 Off-Campus Study (3-12) See page 167.
4103 Independent Study (3-12) See page 167.
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—Southey, Byron, 4250—Arnold, Clough, FitzGerald, and others.
4430 Modern English Grammar (3) New approaches with emphasis on the generative-transformational approach.
4440 Language in Society (3) Methodology and significant discoveries of sociolinguistics in America.
4450 Dialectology (3) Theories and methodologies of dialect research, fieldwork and analysis. Prerequisites: 3340 or permission of instructor.
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.
4991-92-93 Intensive Survey of British Literature (3, 3, 3) Lectures, extensive reading, comprehensive examination, independent study on major works of British literature from Beowulf to middle of twentieth century. Must be taken concurrently.

GRADUATE
5000 Thesis
5101 Foreign Study (1-12)
5102 Off-Campus Study (1-12)
5103 Independent Study (1-12)
5110-20-30 Tutorial in English (1, 1, 1)
5150 Old English Prose (3)
5170-80 History of the English Language (3, 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)
5510-20-30 Readings in Literary Criticism from Plato and Aristotle to Present (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)
6270-80 Studies in American Fiction (3, 3)
6310-20-30 Studies in Victorian Literature (3, 3, 3)
6410-20-30 Studies in Southern Literature (3, 3, 3)
6510-20-30 Studies in Spenser 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. Schmulde, Ph.D. Wisconsin.
Associate Professors: C.S. Alken, 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. Churry, 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, 4550
B. Economic Geography: 3410, 3430, 3490, 4610, 4630
C. Cultural Geography: 3450, 3610, 3660, 4240
D. Regional Geography: 3790, 3800, 3810, 3840, 3870, 3880, 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.

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 1110-20-30.

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 distinction environments significant to man. Must be taken in sequence. Not open to students who have taken 1710.

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

2200 Meteorology (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 World Population (4) World population patterns, 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 internal morphology of cities. Not open to students who have taken 4660.

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 Geography of Resources (4) Study of factors related to variations in resource availability from time to time and from place to place, with particular emphasis upon energy and metallic resources.

3520 The Atmospheric System and Man (4) Overview of general circulation system leading to world pattern of climates. Role of climatic factors in agriculture, architecture, human comfort, and economic activity.
College of Liberal Arts 185

Geological Sciences

Professors:
G. Briggs (Head), Ph.D., Wisconsin; H. J. Klepser, Ph.D., Ohio State; O. C. Kopp, Ph.D., Columbia; R. E. McLaughlin, Ph.D., Tennessee; R. M. Perinchief, Ph.D., Michigan; D. H. Roeder, Ph.D., Goethe University (Germany); J. G. Waltz, Ph.D., North Carolina.

Associate Professors:
M. Clark, Ph.D., Pennsylvania State; L. A. Taylor, Ph.D., Lehight; K. R. Walker, Ph.D., Yale.

Assistant Professors:
D. W. Byerly, Ph.D., Tennessee; K. C. Misra, Ph.D., Western Ontario; J. H. Rule, Ph.D., Missouri; W. P. Staub, 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 the science and its relationship 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 proceed into advanced study in one or more of the branches of geology or related 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 hours in upper-division courses in Geology chosen to include at least twelve hours from the following courses: Geology 3510, 4110, 4155, 4230, 4510 and 4610. Geology 4310 and/or 4440 (or equivalent) are strongly recommended for students planning to become professional geologists.

Because of the interdisciplinary nature of geology and the prerequisites for advanced study, students who major in geology are required to take the following allied science and mathematics courses: Biology 1210-20; Chemistry 1110-20; Mathematics 1840-50; Physics 2210-20 or 2510 and 2310-20. 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.

1Mathematics 1840-50 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 1840-50. Consult Mathematics section of this catalog or the Department of Mathematics for details.

Geology (424)

1000 Frontiers in Earth and Planetary Sciences (4)
Recent developments in earth science of interest to the public. May not be taken by non-majors; treats popular topics such as discoveries on moon by Apollo missions, earthquake prediction, and drifting of continents.
1510 Geoscience I (4) Introduction to study of the earth with emphasis upon its materials and processes which change it. 3 hrs and 1 2-hr lab or field period.

1520 Geoscience II (4) Continuation of Geoscience I emphasizing changes of the earth and its inhabitants throughout time. Prereq: 1510. 3 hrs and 1 2-hr lab or field period.

1810-20 Introductory Geology (4, 4) Introductory course emphasizing geologic principles and methods of study. 1810-East, its materials and processes that change it. 1820-Origin and development of life and earth upon its. Designed for students with strong interest in science, course is taught by team of specialists, each representing unit of specialization. Laboratory and field trips provide opportunities to apply principles and methods of study to specific geologic problems. Must be taken in sequence. Students having begun 1510-20 sequence and change into 1810-20 sequence and vice versa. 3 hrs. and one 2 hr. lab or field period.

2130 Geological History of the Earth (4) Origin and evolution of continents, atmosphere, oceans and earth's inhabitants with emphasis on physical history of North America. Prereq: 1520. 3 hrs and 1 lab or field period.

2120 History of Life on Earth (4) Chronological account of origin and evolution of life on its environment, and societal patterns. Not intended for Geology majors. 3 hrs and 1 lab or field period.

2310 Mineral Resources and the National Economy (4) Distinctive features of significance of mineral resources to the national economy. Domestic and international supply and demand for industrial raw materials. Conservation and exploitation of our mineral resources. Prereq: 1520 or equivalent. Not intended for Geology majors.


2610 Introductory Geology for Engineers (3) Material of structure of the earth. For College of Engineering students only. 2 lectures and 1 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 within ocean basins and their contained water and sediment masses. 1510 or 1810 recommended.

3160 Introduction to Earth Materials (4) Introduction to the varied materials of the earth's crust. Natural processes include hand specimen and analytical methods of identification of important rock-forming and economic materials. Known rock and soil types. Prereq: 1510. 2 lectures and 2 labs.

3180 Mineralogy (4) Classification and identification of silicate and non-silicate minerals. Minerals as phases in natural systems. Laboratory includes hand specimen, chemical and x-ray methods of identification. Prereq: 3160; Chemistry 1110-20 or equivalent. 2 lectures and 2 labs.

3210-20 Invertebrate Paleontology (4, 4) Systematic review of important invertebrate fossil groups. 3210-Sponges, Porifera and Trilobita. 3220-Cnidaria-Mollusca, Echinodermata. May be taken separately or in any order. Prereq: 3260; Biology 1210-20 or permission of instructor. 3 hrs and 1 lab or field period.

3250 Micropaleontology (4) Microscopic remains of animals and plants with special emphasis on microtaphonomic important groups. Prereq: 3210 or permission of instructor. 3 hrs and 1 lab.

3260 Paleobiology (4) Introduction to principles and methods of paleontology as applied to interpretation of earth history. Prereq: 3260; Biology 1210-20, or permission of instructor. 3 lectures and 1 lab or field period.

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

3290 Physical and Biological Quaternary Environment of Human Beings (4) Development of both physical and biological Quaternary environment with humanity, stressing important effects on landscapes and biota that influence humans today. 2 lectures and 2 hrs lab or field period.

3310 Lithology (4) Classification and properties of igneous, metamorphic and sedimentary rocks. Laboratory includes both hand specimen and microscope study of important rock types. Prereq: 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. Prereq: 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 pressure shadows. Laboratory work includes depth and thickness problems. Structure sections, structure contour maps, etc. Prereq: 1520; Mathematics 1840-50 or equivalent. 3 hrs and 1 lab.

3410 Principles of Ground Water Geology (3) Geologic materials and processes affecting the occurrence and behavior of water. Not open to geology majors. 2 lectures and 1 lab. (Same as WRD 3410.)

3510 Introductory Environmental Geology (4) Geologic problems involving earth environment and resources, and geologic parameters associated with their control and misuse. Prereq: 1520 or permission of instructor. 2 lectures and 2 hrs of 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: 2610-20 or permission of instructor.

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 Biostatigraphy (4) Fossil faunas and floras and their use in geochronology, stratigraphic correlation, and paleoecology. Prereq: 3210-20. 3 hrs and 1 lab.

4230 Paleoclimatology (4) Principles of environmental analysis as applied to fossil assemblages and associated lithofacies. Prereq: 3210 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 hrs 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 (8) Five weeks field course, first term summer quarter. Advanced undergraduates or first year graduates in geology. Employed 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 photography, 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 structural 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 equilibria studies in rock-forming mineral systems as aid to understanding conditions of formation and modification of rocks. Prereq: 3310 or permission of instructor.

4660 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 Petrophysics (3) Fluid, heat, electric current and ionc flow through 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: geo-magnetic field, paleomagnetism, radioactivity and age of earth: internal heat, creep and anelasticity of the Earth's interior. 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)

5068 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, 1-4)
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 sequence may receive credit 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 167. 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 a 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 3000, excluding 3010-20-30 and courses in English translation. It is recommended that German majors also take History 1510-20 or 3710-20-30 and 8 hours of Sophomore English. Majors are also strongly urged to be a 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 3510-20, 3610-20-30, 9 hours from Russian 3210-20-21-30-40-50-60, 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.

German (433)

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

1518-2518-28 Honors: Elementary and Intermediate German (5, 5, 5) Honors course for students of superior ability. Freshmen are admitted on the basis of high school average and performance on the American Council of Trustees and Governors. All students 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.

1530 Elementary German through Individualized Instruction (1-8) Same material as in German 1510-20, but student may proceed at his own pace, with a minimum of one credit hour per quarter. With completion of four hours student has option of transferring to 1520. May be repeated. Maximum credit 8 hours.

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 and Upper Division undergraduate teaching including knowledge of second foreign language. Prereq: Two years of some foreign language in college or permission of department head. No credit for students having completed 1510-20. No credit for students having completed 1510-20.

3060 Elementary Dutch (3) Prereq: reading knowledge of German. Primarily for graduate students in German. No graduate credit allowed.

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

3340 Special Topics in German Literature in English Translation (1-4) Topics and credit hours vary and are announced in advance. Student suggestions for topics are welcome. No foreign language credit. May be repeated for credit.

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

3610-20-30 German Civilization (3, 3, 3) Prereq: 2130 or equivalent.

3810-20-30 Conversation and Composition (3, 3, 3) Prereq: 2130 or equivalent.

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (1-13) See page 167.

4103 Independent Study (1-16) See page 167.

Germanic and Slavic Languages

Professors: H. Kratz(Head); Ph.D. Ohio State; H.W. Fuller, Ph.D. Wisconsin; E.T. Hankamer (Emeritus); Ph.D. Bonn (Germany); R.L. Hiller, Ph.D. Cornell; R.L. Nordsieck, Ph.D. Ohio State; J.C. Osborne, Ph.D. Northwestern.

Associate Professors: J.E. Faer, Ph.D. Pennsylvania; D.E. Lee, Ph.D. Stanford; M.P. Rice, Ph.D. Vanderbilt.

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

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

4140-50 Selected Topics in German Literature from 1750 to the Present (3, 3) Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30 and 3210-20-30) or equivalent.

4160 Studies in German Authors (3) Life and works of a single outstanding German literary figure. Content varies. May be repeated for credit. Prereq: 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. Prereq: 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. Prereq: 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. Phono-logical and morphological change. Cultural, historical, and social influences upon the development of language. Semantic change. Lexicography. All these topics copiously illustrated by selected examples from Indo-European languages. 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 Russian, French and Spanish 4260.)

4270 Introduction to Germanic Linguistics (3) Phonetics and phonemics of German. German grammar and German vocabulary from a descriptive point of view. Dialects 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. Prereq: Senior standing, with a record of "A" in half of German courses taken as prerequisite to the 4000 course. Average of "B" in remainder, and permission of department.

4810-20-30 Advanced Conversation and Composition (3, 3) Prereq: 3110-20-30 or equivalent or permission of department.

GENERAL COURSES

2640-50 Culture of German-Speaking Peoples (4, 4) Studies in culture and life-style of German-speaking peoples 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 above 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 adventures in 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, Lagerlöf, Hamsun, Vesaas, Lagerkvist, Bang, Nexø, Laxness.

3260 German Drama in English Translation (3) From Lessing to present. No foreign language credit.

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.

4050 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 German Language and Literature. The requirements for these degrees are set forth in the Graduate School Catalog.

5000 Thesis

5100 German Phonetics and Advanced Grammar (3)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

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)

5500 Studies in German Literature (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 (1899-1945) (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 (888)

UNDERGRADUATE

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

1610-20 Elementary Serbo-Croatian (4, 4) Must be taken in sequence.

1710-20 Elementary Czech (4, 4)

2510-20 Intermediate Russian (4, 4) Must be taken in sequence.

2670-80 Intermediate Serbo-Croatian (4, 4) Must be taken in sequence.

2710-20 Intermediate Czech (4, 4)

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. Undergraduate credit only. No credit for students having completed 1510-20 or equivalent.

3310 Russian Scientific and Technical Literature (3) Prereq: 2130 or equivalent.

3510-20 Russian Composition and Conversation (4, 4) Practice in writing and speaking; grammar review and vocabulary building.

3610-20-30 Introduction to Russian Literature (3, 3, 3) 3610: Russian Poetry. 3620: Russian Short Stories. 3630: Russian Short Novels. Prereq: Completion of Russian 3510-20 or equivalent.

ADVANCED UNDERGRADUATE AND GRADUATE

4010 Selected Topics in Russian and East European Studies (3) Interdisciplinary seminar on selected topic using comparative approach.

4101 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

4110-20-30 Studies in Major Russian Writers (3, 3, 3) Content varies. Prereq: Russian 3520-20-30. Tutogov, Turgev, Tolstoy, Dostoevsky, Chekhov and others. Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30, 3210-20-30-40-50-60-70, 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 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 students 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, 3210-20-30-40-50-60-70, 3310 or equivalent).
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 4018-28.

(a) European: 3061-71; 3140-50-60; 3411-12-13; 4221-22-23; 4341-32-33; 4441-42-43; 4540-30-60; 3710-20-30; 3760-70; 4011; 4250-60-70; 4260; 4380; 4410-20-30; 4540-60; 4470; 4710-20-30; 4740; 4770-80.

(b) United States: 3310-20-30; 3610-20; 3630-40-50; 3670; 3680; 3910-20-30; 4012; 4290; 4311-21; 4370; 4910-20-30; 4940-50-60; 4670; 4910-20-30; 4950-60.

(c) Other: 3750, 3780-90; 3810-20-30; 3870-80-90; 4010; 4120-30; 4590; 4840; 4850; 4870-80-90.

Minor: History 1510-20 (or honors equivalent) is prerequisite to a minor which consists of 24 hours of courses numbered on the 2000-level of which at least 8 hours must be U.S. History.

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 A History of World Civilization Since 1450 (4, 4) Interaction of Western World and Non-Western peoples since the fifteenth century. 1610—ca. 1450-1800. 1820—1800 to present.

1950-60 Afro-American History: An Introduction (4, 4) 1950—African civilization to 1890. 1890—1890 to present.

2350 U.S. and World Crisis, 1899 to Present (4) An introductory course in history of 20th Century American Foreign Policy. May not satisfy major or minor requirements.

2510-20 History of the United States (4, 4) 2510—Settlement to 1865. 2520—1865 to present.

2518-28 Honors: History of the United States (4, 4) Consent of department required.

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 History of England (3, 3) 3140—To 1660. 3150—Through Reform Bill of 1832. 3160—1832 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 Reformation (3, 3, 3) 3411—Renaissance. 3412—Reformation 1517—1550. 3413—Catholic Reformation and Wars of Religion. (Same as Religious Studies 3411-12-13.)


3445-46 History of France (4, 4) 3445—France to 1870. 3446—France since 1871.

3470-80 History of Russia (3, 3, 3) 3470—To 1601. 3480—19th Century. 3490—20th Century.

3610-20 The American Colonies and the American Revolution (3, 3) 3610—Settlements to 1754. 3620—1754—1789.


3670 Popular Culture in the United States (4) Examination of significance of fads, fashion, and amusements of American culture, 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 diplomacy 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.

3710-20-30 History of Germany (3, 3, 3) 3710—First Reich to 1713. 3720—Habsburg and Hohenzollern and Formation of Second Reich. 1713-1890. 3730—From a Unified to a Divided Germany, 1890 to present.


3780-90 History of the Middle East (3, 3) 3780—Rise and spread of Islamic Civilization to the 14th century. 3790—The impact of the West on the Middle East from the 14th Century to World War I.

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, Korea, and Mongolia. 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—Mexico. 3890—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 Colloquia (3, 3, 3) 4010—General. 4011—European. 4012—American. Small group study of selected historical period or theme. Restricted to juniors and seniors who have previously taken appropriate lower-division historical sequence.

4015 Studies In History (3-4) Variable content course affording opportunity to offer subject matter
not covered in an existing course. May be repeated for credit.
4018-28-38 Honors: Senior Paper (0, 0, 6) Required of students working for honors in history. Admission with permission of department.
4101 Foreign Study (1-16) See page 167.
4102 Off-Campus Study (1-16) See page 167.
4103 Independent Study (1-16) See page 167.
4120-30 History of Colonialism and Imperialism (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—Revolution to 1912. 4321—1912 to present.
4370 U.S. Military History, 1754 to the Present (4) Examination of nation's broad strategic aims and means used to attain them, shifting strategy, tactics, and weaponry involved in our wars, and relationship between American society and its armed forces.
4380 Civilian-Military Relationships in the Modern Western World (3) Civilian-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 Politics and Society to World Depression. 4420—World Depression to end of World War II. 4430—Postwar Europe, 1945-present.
4470 Poland and Its Neighbors (3) A survey of Polish history from its beginnings to present with some emphasis on the Polish question 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) 4510—1465-1603. 4520—1603-1714.
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 Westward Movement I, II, III (3, 3, 3) Settlement and development of the "West" throughout American history. 4610—From the Atlantic to the Mississippi. 4620-30—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 1785. 4650—1625-ca. 1900. 4660—1900-present.
4670 Cities and Urbanization in American History (4) Origins, growth and influence of American cities in development of the Nation, from colonial era to present.
4710-20-30 Medieval History, 500-1400 (3, 3, 3) 4710—Early Medieval period to Revival of Empire in 962. 4720—962 to Renaissance of twelfth century. 4730—Renaissance of twelfth century to Italian Renaissance.
4740 The City in Europe, ca. 1200, 1300 (3) Survey of European urban growth, with comparative analysis of major periods of urbanization of thirteenth and nineteenth centuries. Emphasis on relationship between demographic, economic and social foundations of cities and political and cultural development.
4770-80 Austria and Central Europe (3, 3) 4770—To 1867. 4780—Since 1867.
4811-21 History of Japan (4, 4)
4840 History of Mexico (3)
4850 History of the Caribbean (3) Caribbean region from discovery and colonization to contemporary times.
4870-80-90 China (3, 3, 3) 4870—Cultural History of China. 4890—History of Modern China. 4900—History of Contemporary China.
GRADUATE
A student who enrolls in the Graduate School with intention of obtaining an advanced degree in history shall have completed an undergraduate major in history or its equivalent.
The Master's Program
General requirements for the Master of Arts and Master of Arts in College Teaching degrees 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
5101 Foreign Study (1-12)
5102 Off-Campus Study (1-12)
5103 Independent Study (1-12)
5211-12-13-14-15-16-17-18-19 M.A. Reading Courses (3, 3, 3, 3, 3, 3, 3, 3, 3)
5221-22-23-24 M.A. Reading Courses (3, 3, 3, 3)
5225 M.A. Readings, Middle East (3)
5240 Introduction to Historical Research (3)
5250 European Historiography (3)
5260 American Historiography (3)
5271-72-73 Teaching of College History (0, 0, 3)
5280 Philosophy and Methodology (3)
5290 Quantitative Analysis of Historical Data (3)
5300 Topics in History (3)
5350 U.S. and the Far East (3)
5360 Topics in American Foreign Relations (3)
5410 Topics in Early Modern European History (3)
5440 Revolution and Restoration in Central Europe, 1760-1850 (3)
5444 Topics in French History (3)
5445 Topics in Nineteenth Century European History (3)
5450 Topics in Twentieth Century European History (3)
5480 Topics in Russian History (3)
5510 Topics in Tudor-Stuart England (3)
5520 Topics in Modern English History (3)
5550 Reaction and Reform in England, 1789-1848 (3)
5560 Anglo-Irish Relations (3)
5640 Topics in American Social and Cultural History (3)
5645 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 the Crusades (3)
5720 Topics in Medieval History (3)
5740 Topics in European History (4)
5750 Topics in Ancient History (3)
5780 Topics in German National Socialism (3)
5790 Topics in Middle Eastern History (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)
6444 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)
6630 Seminar in Early National Period of American History (3)
6635 Seminar in Jacksonian Period (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—Freshmen—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.

2118-28-38: Honors—Sophomore—Special Problems Seminar (2-4, 2-4, 2-4) 2118—The Humanities; 2119—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.

3118-28-38: Honors—Junior—Colloquium (2-4, 2-4, 2-4) Small group studies of selected topics.

4101: Honors: Foreign Study (1-16) See page 167, and Director of Special Programs. Primarily for College Scholar Students.

4102: Honors—Off-Campus Study (1-16) See page 167 and Director of Special Programs. Primarily for College Scholar Students.

4103: Honors: Independent Study (1-16) See page 167 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)
Associate Professor: R.F. Kronick (Director), Ph.D. Tennessee; J.D. McLean, Ph.D. Chicago.
Assistant Professor: F. J. Spicuzza, M.S.W. Tennessee.
Instructors: J.E. Everett, M.S.W. Michigan; N. Wright, M.S.W. Pittsburgh.
Major: 48-52 hours
Requirements: Human Services 2690, 3100, 3300, 4220, 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, 3566, 4665, 4666; Religious Studies/Sociology 4940; Sociology 4650, 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 4900; Political Science 3710, 3720, 3730, 4580, 4590; Public Health
3330; Religious Studies 3550, 3600, 3610; Rural Sociology 3420; Sociology 3160, 3330, 4320, 4330, 4530, 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) General field of human services with focus on societal services; contemporary issues in human services.

3100 Social Welfare as a Social Institution (4) Specific social welfare institutions examined in depth in relation to human needs, structure, program, and service approaches. 2690 recommended.

2000 Peoples and Problems of Appalachia (4) Course designed to provide better understanding of Appalachian peoples, by exploring their life style and institutions from contemporary human services point of view. Special emphasis placed on political and economic structures of region. Recommended: Anthropology 4740.

3300 Human Needs and Services (4) Consideration of the basic needs of people in urban-industrial society (e.g., income, housing, medical care) and societal response to those needs in the form of voluntary and governmental organization and agency services.

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 client or clients he is serving. Settings considered will include crime, delinquency, health, and blindness.

4101 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

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 techniques used by practitioners for helping clients, e.g., art therapy, behavior modification, counseling skills, self-awareness training. Content varies, topic to be determined by instructor; may be repeated up to 12 credit hours.

4400 Human Services Field Work (8-16) 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 to a maximum of 16 hours. Satisfactory-No Credit. Prerequisite: permission of instructor.

4900 Aspects of Urban Environment I (3) Interdisciplinary course in urban problems. Prerequisite: 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.
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 eligible for admission to calculus 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 mathematics or non-credit courses (or equivalent elsewhere).

A student may not receive credit for both 1540 and 1500. 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 (1848-58-68 and 2848-58-68) of 1840-50-60 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 6, 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, students, or the department (in cases subject to the approval of the department head).

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:
   b. Note: The two sequences selected cannot contain the same course.
   c. 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, 3521, 3520, Mathematics 3210, 3220, 3250, 4410, 4420, 4430, 4450, 4520, 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.

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 profitably use as a guide. A description of these programs appears below; more detailed information about these or any additional programs which the department may design in the future is available in Ayres 121. Completing one of these programs is not required 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 electives, such a program provides, for example, by pre-medical or pre-law students, by students planning to teach secondary school mathematics, 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, 4120; 4510-60; 4250, senior seminar, 3 hours of math electives. The honors courses 4518-28-38 and 4518-68 are especially recommended.

Program 3. A program emphasizes numerical mathematics, and is designed to prepare the student for work in the numerical sciences, for example, 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, 4620, 4640, 4710.

Program 4-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, 4510-20-30, 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 work in business or industry. Suggested courses: Mathematics 3150, 4540, 4060-70, 4560-60-70, 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, 4060-70, 4650-60-70, 4510-20-30, 4750-60-70, Industrial Engineering 3510-20-30, senior seminar.

0150 Trigonometry (0) Plane trigonometry with emphasis on identities and other analytic aspects useful in calculating. Prepr: Calculus Calculus, 1540 and/or 1500; deficiency in high school trigonometry, 3 hrs per week. No college credit.

1020 Mathematics: A Philosophical Approach (4) Mathematics as a language. its history, its role in society, its nature of mathematical truth; strengths and limitations of the axiomatic method: the infinite and the infinitesimal. Freshmen and sophomores in science, prepr: 1 year of high school algebra or equivalent.

1500 Precalculus Mathematics (4) Function concept and use of functional notation. Properties of functions and their graphs. Polynomial, exponential, logarithmic, and trigonometric functions. Prepr: 2 yrs of high school algebra; or equivalent of one-half yr of trigonometry or taking Mathematics 0150 concurrently.

1540 College Algebra (4) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, polynomial functions, conic sections, permutations, combinations, graphs. Prepr: Two years of high school algebra or one year algebra and one year geometry.

1550-60 Introductory Calculus-General Mathematics (4, 4) Equations of straight lines, conics, derivatives of algebraic functions, applications of derivatives, maxima and minima, related rates, antiderivatives, integration of algebraic functions, applications of integration. Prepr: 1540 or equivalent, 1560-matrices, systems of linear equations and inequalities, trigonometric function, applications, analytic geometry, simple and compound interest, annuities, exponential and logarithmic functions, law of growth, applications. Prepr: 1550 or equivalent.

Note: Students with an adequate high school background in Algebra are advised to begin the 1540-50-60 sequence with 1550.

1630 Analytic Geometry (5) Straight line, plane curves, polar coordinates; parametric equations, line and plane in three dimensions; review of trigonometry. This course will prepare students for 2710-20-30 and cannot be taken for credit in addition to 1810-20. Prepr: 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, definition of an integral, implicit differentiation, chain rule, differentials, continuity, applications of derivatives, maxima and minima, indefinite integral, definite integral, 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. Prepr: Two years of high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1842-50-62 Single Variable Calculus with Computer Software (5, 5) Same coverage as calculus 1840-50-60 supplemented with computer. Elementary FORTAN is introduced and applied to problems following the evaluation of functions; limit operation; application of limits to definition of derivative; approximation via differences; approximation of equations; major, minor, bisection, secant methods and Newton's method; rectangular, trapezoidal, and Simpson's rules for numerical integration. Applications of definite integral and numerical value problems. Prepr: 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, selected on basis of placement test scores and high school transcript. Students receiving a grade below B in 1848 will complete the year's work in calculus by taking 1850-60. Special sections of
1958 will be made available for students who perform well in 1840. Must be taken in sequence.

1900 Selected Topics (4) Applications of definite integration; approximate integration; simultaneous linear equations; matrix inversion; elementary linear programming; infinite series; descriptive statistics and finite probability. This course is especially recommended for Architecture majors. Prereq: 1810-20. If a student wishes to continue his study of calculus after taking 1900, he should consult the mathematics department.

2012 Basic Concepts of Elementary Mathematics (4) Sets, theory of arithmetical operations, elementary probability and statistics. Basic geometrical concepts, elementary analytic geometry. Applications. May not be taken for credit after or concurrently with 1110-1500, 1540, 1550, 1630, 1810, 1818, 1840, 2110, 2410, 2412, 2540, 2710. Primarily for secondary education students.

2020 Great Ideas in Mathematics (4) Course for nonscience majors designed to expose the student to ideas which have had a significant impact on direction of mathematical thought in particular and 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 infinity. Prereq: 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. 2310—Elementary number theory, rational and irrational numbers. Euclidean geometry. Must be taken in sequence. Prereq: 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) Logic and sets, combinatorics and probability, vectors and matrices, elementary optimization and game theory, applications to simple problems in the behavioral and/or managerial sciences. Prereq: 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, integration and properties of the integral. For students who have had some previous exposure to Differential and Integral Calculus. Prereq: 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; indefinite integrals and applications, the definite integral and applications, Fundamental Theorem for Integrals. Integrals of functions and integrals of transcendental functions, methods of integration, parametric equations, vectors, differential equations, vector products, equations of lines and planes, surfaces. Partial differentiation, directional derivatives, the chain rule, the total derivative, maxima and minima, line integrals, exact differentials, multiple integrals with applications, cylindrical and spherical coordinates, series, tests for convergence, power series, Taylor's series. Must be taken in sequence. Prereq: Math 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. Prereq: 1830.

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 integrals, applications, polar coordinates, transcendental functions, methods of integration, hyperbolic functions, vectors in 2-space, and 3-space. 2730—Elementary linear algebra, vectors in 3-space, applications, partial differentiation, multiple integrals, Taylor's series, power series, absolute convergence. Prereq: 1630 or equivalent.

2840-50-60 Multivariable Calculus and Matrix Algebra (4, 4, 4) 2840-50—Differential equations, vector spaces, linear algebra, analytic geometry, dot and cross product of vectors, space curves. Functions of several variables, directional derivatives, partial derivatives, gradient, curves and surfaces, multiple integrals, cylindrical and spherical coordinates, series, convergence tests, power series, Taylor's series, power series, absolute convergence. Prereq: Math 1860. Must be taken in sequence. 2860—Vectors, matrices, systems of equations, determinants, inverses of matrices, eigenvalues and eigenvectors. A student cannot receive credit for both 2860 and 4050. 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. Sophomore 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 4510-60-70 during the junior or senior year.

3000 Elementary Quantitative Methods (4) Elementary course designed to prepare students in social and life sciences for quantitative courses in their department. Treats topics in probability and statistics without calculus. Course cannot be used to meet requirements for majors or minors in mathematics. Credit for credit students in College of Business Administration.

3040 The Ideas of Calculus (4) Study of basic ideas and theory behind differential and integral calculus designed for students who have no prior study of calculus. Emphasis on the historical framework in which calculus was discovered and developed. Subsequent philosophical and scientific thought. Prereq: One year of high school algebra. May not be taken for credit by any student who has previously received credit for any college level calculus course.

3050 Elementary Probability and Statistical Analysis (3) Combinatorial problems; sample spaces, events, and statistical independence; axiomatic probability theory; random variables and their distributions; simple random processes. Prereq: 1550-60 or equivalent.

3060 Elementary Statistical Analysis (3) Elementary probability distribution, confidence intervals and statistical tests of hypotheses; least squares and linear regression. Prereq: 3050 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 of integers and polynomials. 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 Introduction to Numerical Algorithms and Programming (3) (Same as Computer Science 3150.)

3155 Introduction to Numerical Algorithms (3) (Same as Computer Science 3155.)

3320 History of Mathematics (3) Survey of development of various branches of mathematics, from ancient to modern times. Prereq: Math 1860 or 2550 or equivalent.

3310 Advanced Euclidean Geometry (3) Triangles and circles, constructions, modern concepts. Prereq: 1 year of college mathematics.

3320 Non-Euclidean Geometry (3) Foundations of geometry. Elliptic and hyperbolic plane geometry. Prereq: 1 year of college mathematics.


3510 Intermediate Analysis (3) Primarily for students in secondary mathematics education. Course covers elementary calculus from advanced viewpoint with emphasis on proofs of basic theorems. Topics covered include limits of sequences and functions, continuous functions, derivatives, definite integrals, and fundamental theorem of integral calculus. Prereq: 1550-60 or 1860.

3720 Theory of Equations (3) Techniques for finding roots of polynomial equations. Topics covered include complex, real, rational, and irrational roots, Sturm's Theorem, Horner's method of approximating roots, and forms for quadratic and higher degree equations. Prereq: 1 year of college mathematics.

3780-90 Introduction to Combinatorial Theory (3, 3) Introduction to problems of arrangement and selection within discrete systems. Enumeration by recurrence relations and generating functions, graph theory, finite geometries and finite fields, partitions, block designs. Prereq: Math 2860 or permission of instructor.

3810 How to Prove It (3) Course is designed to improve understanding of nature and methods of mathematical proof by means of practice and participation in seminar setting. Variable content but will include certain standard topics such as elementary set theory, solutions and proof of theorems, and mathematical induction. Coreq: 2850 or 2660.

3920-30 Topology of Euclidean Spaces (4, 4) Topics will include topology of line and plane, separation properties, compactness, connectedness, completeness, continuous functions, homeomorphisms, continua, and topological invariants. Must be taken in sequence. Prereq: 2850 and 3810, or 2688.

*Not accepted toward satisfying requirements for major or minor in mathematics.
3990 Studies in Mathematics (1-4) Credit determined at registration. May be repeated for credit with permission of department; maximum 8 hours credit for both 2860 and 4050. Prereq: 2860 or 2560 or permission of instructor.

4035-45 Introduction to Numerical Linear Algebra (3, 3) (Same as Computer Science 4035-45.)

4050 Matrix Algebra and Applications (3) Matrices, elementary operations, systems of linear equations, vector spaces, determinants, eigenvalues and eigenvectors. A student cannot receive credit for both 2860 and 4050. Prereq: 2860 or 2560 or permission of instructor.

4060-70 Matrix Algebra and Applications (3) Eigenvalues and eigenvectors, singular values and singular vectors, unitary and similarity transformations, quadratic forms, vector and matrix norms, Jordan canonical form, and related topics. Prereq: 2860 or 4050.

4101 Foreign Study (1-15) See page 167.

4102 Off-Campus Study (1-16) See page 167.

4120 Linear Algebra (3) Abstract vector spaces, linear transformations, and their matrices, systems of linear equations and determinants, inner products, and diagonalization of symmetric matrices. Prereq: 2860 or 4050.

4150-60 Abstract Algebra (3, 3) Equivalence relations and partitions, properties of integers, elementary number theory, rings, integral domains, groups, rings, polynomial rings, integral domains, divisibility, unique factorization domains, fields. Must be taken in sequence. Prereq: 2860 or 4050.

4225-35 Introduction to Numerical Analysis (3, 3) Interpolation and approximation, numerical differentiation and integration, roots of equations, systems of linear and nonlinear equations. Prereq: 3150 or 3155. (Same as Computer Science 4225-35.)

4250 Elementary Complex Variables (3) Complex functions, Cauchy-Riemann equations, elementary functions, Cauchy’s theorem and formula, Taylor and Laurent series, residues and their applications. Prereq: 2860; one 4000-level mathematics course recommended.

4510-20-30 Introduction to Analysis (3, 3, 3) Real number system, functions, sequences, limits, continuity, uniform continuity, differentiation, integration. Functions of several variables, implicit function theory. Multiple integrals, infinite series, sequences and series of functions, uniform convergence, Taylor and Laurent series. Should be taken in sequence. Prereq: 2860.

4540 Infinite Series and Functions of Several Variables (3) General theory, power series and Taylor's formula, uniform convergence. Partial differentiation and maxima and minima for functions of several variables. Lagrange multipliers. Prereq: 2860.

4550 Partial Differential Equations (3) Fourier series; Fourier integrals; orthogonal functions; the vibrating string; solution by series; heat flow, Bessel functions. Prereq: 2860, 4610 or 4710 recommended.

4610-20-30 Ordinary Differential Equations (3, 3, 3) 4610—Linear first and second order equations. Power series solutions and Legendre polynomials. Regular singular points, Frobenius method, and Bessel equations. Systems of linear differential equations and the matrix exponential. 4620—Numerical methods for ordinary differential equations including one-step methods (Euler, Runge-Kutta) for initial value problems, multistep methods, A-stability, and two point boundary value problems. 4630—Special topics which may include existence theory, oscillatory solutions, Liapunov stability, singular perturbations, and asymptotic solutions. Prereq: 4610: 2860 or 4650; 4620: 4050 or 2860; and 3150 or 3151, 4630, 4610 or permission of instructor.

4640 Calculus of Finite Differences (3) Real difference equations; application to problems in engineering and physics. Prereq or coreq: 4610.

4650-60-70 Introduction to Mathematical Statistics (3, 3, 3) Introduction to probability; discrete and continuous distributions; correlation, regression, and a statistical independence; foundation of sampling theory; significance tests. Must be taken in sequence. Prereq: 2860.

4710 Vector Analysis (3) Fundamental operations, base vectors, dot and cross products, directional derivatives, divergence and curl of vector fields, line and surface integrals, divergence theorem of Gauss, and Stokes theorem. Prereq: 2860.

4750-60-70 Introductory Probability Theory (3, 3, 3) 4750—Elementary combinatorial analysis, probabilities in discrete sample spaces, conditional probability and stochastic independence, binomial, Poisson, hypergeometric and normal distributions. 4760—Expectation, conditional expectation and characteristic function of random variables, infinite sequences of random variables, the weak and strong laws of large numbers, and the central limit theorem. 4770—Markov chains: limiting probabilities; steady-state and stationary distributions; stochastic processes; Poisson, birth and death processes; Kolmogorov equations. Prereq: Math 2840-50-60.

4810 Elementary Number Theory (3) Divisibility; congruences; theorems of Fermat and Wilson, primitive roots; indices, quadratic reciprocity. Prereq: 2860 or permission of instructor.

4910 Senior Seminar (1-2) Credit determined at registration. May be repeated for credit with permission of department; student may offer a maximum of 4 hours credit from 4910 and 4920 combined. Prereq: Senior standing.

4920 Senior Seminar (1-2) Credit determined at registration. May be repeated for credit with permission of department; student may offer a maximum of 4 hours credit from 4910 and 4920 combined. Prereq: Senior standing.

4980 Readings in Mathematics (1-3) Open to superior students with permission of department head. Independent study with faculty guidance. May be repeated. Maximum credit, 9 hours.

4990 Studies in Mathematics (1-4) Credit determined at registration. May be repeated for credit with permission of department; maximum 9 hours credit. Prereq: Recommendation of member of Mathematics professorial staff and consent of department.

GRADUATE

The Department of Mathematics offers four advanced degrees. In order to become a candidate for any one of these the student must first be admitted to The Graduate School. The Master of Arts and Master of Science degree programs presuppose a Bachelor's degree with a major in mathematics. The Master of Mathematics degree is intended primarily for teachers of high school mathematics. Applicants for admission to this program must take the Graduate Record Examination and must have either (a) certification for teaching secondary mathematics or (b) successful elementary or secondary school teaching experience. The Doctor of Philosophy degree program presupposes a Bachelor's or Master's degree with a strong major in mathematics. This program is intended to train professional mathematicians for a career of teaching and scholarly work in colleges and universities or work in industry. Further details on all of these programs are in the Graduate School Catalog.

5000 Thesis

5011 Elementary Functions from an Advanced Standpoint for Teachers (3-4)

5012 Differential Geometry for Teachers (3-4)

5013 Geometry for Teacher (3-4)

5014 Analysis for Teachers (3-4)

5015 Probability and Statistical Inference for Teachers (3-4)

5050-60-70 Mathematical Logic (3, 3, 3)

5110-20-30 Theory of Functions of Complex Variables (3, 3, 3)

5150 Foundations of Analysis (3)

5160 Foundations of Analysis (3)

5170 Foundations of Analysis (3)

5210-20-30 Theory of Functions of A Real Variable (3, 3, 3)

5240-50-60 Linear Analysis (3, 3, 3)

5270 Stability Theory and Liapunov's Direct Method (3)

5310-20-30 Introduction to Higher Geometry (3, 3, 3)

5340-50-60 Numerical Treatment of Algebraic and Transcendental Equations (3, 3, 3)

5430 Integral Equations (3)

5440 Calculus of Variations (3)

5450-60-70 Introduction to Partial Differential Equations (3, 3, 3)

5455 Finite Difference Methods for Partial Differential Equations (3)

5465 Mathematical Aspects of the Finite Element Method (3)

5480-90 Mathematical Programming (3, 3)

5500 Lattice Theory (3)

5510-20-30 Introduction to Higher Algebra (3, 3, 3)

5540 Galois Theory (3)

5560-70-80 Theory of Matrices In Numerical Analysis (3, 3, 3)

5590 Theory of Rings (3)

5610-20-30 Mathematical Methods in Physics (3, 3, 3)

5640 Numerical Methods in Physics (3)

5655-65-75 Numerical Mathematics (3, 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)

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

6210-20-30 Linear Analysis (3, 3, 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, 3)

6590 Group Representations (3)

6610-20-30 Advanced Ordinary Differential Equations (3, 3, 3)

6750-60-70 Probability Theory (3, 3, 3)
### Microbiology

**2010 Microbiology (4)** Fundamental concepts and applications of microbiology with laboratory demonstrations. 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)** Introduction to Microbiology for student nurses in diploma program of hospitals affiliated with The University of Tennessee. Microbiological principles as they apply to nursing care of the patient, epidemiology 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 pathogenic and biologically applied bacteria. 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 3120. Prereq or coreq: Biology 3110.

**3009 Introductory Microbiology Laboratory (2)** Laboratory exercises designed to accompany 3000.

**3061 Pathogenic Microbiology (3)** Disease producing microorganisms including bacteria, rickettsia, chlamydia, and fungi. Prereq: 3000 and 3009.

**3068 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 disease; allergy and anaphylaxis. 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.

**3089 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 fermentation 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 Agricultural Biology 4010.)

**4101 Foreign Study (1-16)** See page 167. 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 167. No more than 3 hours may be applied toward a major or minor in Microbiology. May be repeated to a total of 16 hours.
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 students who have completed the first three years of the Science-Medical Technology Curriculum, described on page 162, 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 antibacterial sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminths parasites of man.

4021-22 Clinical Chemistry (6, 6) Clinical aspects of biochemistry, 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, including radioimmunoassay, 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, technics, 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 placed on microscopic identification of cells and the significance and correlation of laboratory data.

4041-42 Immunohematology (4, 4) Theory and practice in bank operation. Enzyme, isoantibody, and serologic antigens and their normal and abnormal immunology. Standard technical procedures used in evaluating blood typing, cross-matching, and antibody detection, and preparation of blood components for transfusion. Safety control methods standard to an efficient blood bank are important part of course material.

4043 Clinical Serology and Immunology (2) Performance and interpretation of broad range of clinical serological and immunological procedures with emphasis on principles and clinical correlation. Formal lecture series included.

4050 Nuclear Medicine (1) Physical characteristics, detection and use of short half-life radioactive materials. Emphasis placed on in vivo diagnostic medical uses and radiation safety.

4060 Histology (1) Overview of techniques of preparation of tissue for microscopic evaluation 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 concepts. Basic technics and techniques of methods of study include procedures for collection and handling of specimens, principles of operation of major laboratory instruments, review of laboratory math and introduction of quality control procedures. Portions of course extend over entire clinical laboratory week.

4072 Principles of Supervision and Education in Medical Technology (1) Consists of seminars in basic principles of management, supervision, and education thorought which there will be comprehensive examination covering the entire course.

Music (698)

Professors:

Associate Professors:

Assistant Professors:

Instructors:

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 164. 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 (8 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, 2113-23-33, 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.

The Bachelor of Science in Music Education, designed for preparation for institutional teaching, is administered by the Department of Music Education. See page 90 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 1510 or above.

1015 Class Voice (1) For music and music education majors only. May be repeated for credit.

2000 Solo Class (0)

2055-65-75 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, 1) Piano music from elementary grades through intermediate. Prereq: permission of instructor.

3011-21-31 Organ Literature (1, 1, 1) Organ music from precritical 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 contemporaneous 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 precritical period to present. Prereq: permission of instructor.

3041 Keyboard Harmony (2) Melody harmonization, figured bass realization, and improvisation. Prereq: 1131-33, and keyboard proficiency at the 2000 level.

3051 Organ Improvisation (2) Prereq: 3041 and organ proficiency at the 2000 level.

3044-54 Brass Literature (2, 2) Prereq: permission of instructor.

3061 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 live electronic music. Historical background, theoretical concepts, tape and synthesizer usage. Prereq: permission of instructor.

3597-4597-5597 Composition with Electronic Media (1-3, 1-3, 1-3) 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 instrumental interpretation; 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. Collaborative 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 4430 or equivalent.

4070-80-90 Opera Production (1, 1, 1) Problems of relating the operatic medium to the opera. Selection, production procedures, opera dramas. 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; congregational and liturgical music; church music administration. Prereq: permission of instructor.

MUSIC THEORY AND COMPOSITION

1111-21-31 Theory I (3, 3, 3) Materials of music with emphasis on literature of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Must be taken in sequence.

1113-23-33 Sight Singing and Ear Training (1, 1, 1) Should be taken concurrently with 1111-21-31 or 1118-28-38. Must be taken in sequence. 2 hrs per week.

1118-28-38 Honors: Theory I (4, 4, 4) Materials of music with emphasis on literature of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Designed for music majors with concentrations in theory or composition. Orally administered. Grade of C or better must be achieved to continue the course sequence.

2111-21-31 Theory II (3, 3, 3) Materials of music with emphasis on literature of Romantic and Contemporary periods. Exercises in writing and analysis. Must be taken in sequence. Prereq: 1131 or 1138 or permission of instructor.

2113-23-33 Advanced Ear Training (1, 1, 1) Should be taken concurrently with 2111-21-31 or 2118-28-38. Must be taken in sequence. 2 hrs per week.

2118-28-38 Honors: Theory II (4, 4, 4) Materials of music with emphasis on literature of Romantic and Contemporary periods. Exercises and projects in writing and analysis. Prereq: 1138 or placement examination.

3111-21-31 Tonal Counterpoint (3, 3, 3) Counterpoint 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 soloists, chamber ensemble, and string choruses; and percussion. Prereq: 2131.

3113 Analysis I (3) Study and practice in analysis of structures of music from smallest structural units to large compound forms. Emphasis on macro-analytic techniques. Prereq: 2131 or equivalent.

4114-24 Choral Arranging (3, 3) Analysis of scores and writing of arrangements for choruses. 3114—male and female chorus; 3112—mixed chorus. Prereq: 3112 or permission of instructor.

4122 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 3112 or permission of instructor.

4123 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 167.

1111-21-31-41 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.

1112 Twentieth-Century Compositional Techniques (3) Styles and compositional devices from Debussy to present. Analysis of scores; idiomatic writing. Prereq: 2131 or equivalent.

1113 Pedagogy of Music Theory (3) Techniques, methods and materials involved in college-level theory programs. Prereq: permission of instructor.

1114 Stage Band Arranging (3) Analysis of scores and scoring for the stage band. Prereq: 3112 and permission of instructor.

1115 Variation (3) Study and application of variation procedures. Prereq: 3123 or equivalent.

1116 Set Structure in Musical Composition (3) Theory of sets and its application to analysis of music. Prereq: permission of instructor.

1124 Band Arranging (3) Study and application of techniques employed in scoring for the marching and concert bands. Prereq: 3112 or equivalent.

1134 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—Stylistic, historical, aesthetic principles of music; 4th Century into 20th Century. 1220—in-depth study of music literature and representation of styles; 16th Century into 20th Century. Prereq: 1210 or 1220.

1340 Introduction to Music Literature (3) Acquaintance with basic terms of music and accepted masterworks through chronological approach. For music majors.

1320-20-30-40 History of Music (3, 3, 3, 3) 2110—to 1600. 2320—to 1600. 2330—1600-1900. 2340—to present. Requires musical background. Prereq: permission of instructor.

1230 The Concerto (3) Survey of literature from seventeenth century to present.

1240-50 The Symphony (3, 3) Survey of symphonic literature from 1770 to 1970. Prereq: 1750 to present.

2711-81 History of Opera (3, 3) Dramatic, vocal and orchestral elements in opera of Italian, French, and German School. 3721—1600-1800. 3281—1800-present.

3340 Oratorios (3) Choral works more than are 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 1800 to 1914. 4210—musical trends from Beethoven through Wagner; 4220—musical nationalism and post-Romantic instrumental and vocal styles.


4251-41 American Music (3, 3) 4251—From colonial times through the music of Ives; 4251—from 1930 to present (Copland to Cage). Prereq: 1210-20 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: 1210-20 or equivalent.

4270 Evolution of Jazz (3) Study of origin, development and styles of jazz music and its exponents. Prereq: 1210-20 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 present.

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; instrumental works; 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, 2100-31-41. 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 only after full academic requirements established by area faculty (piano, voice, violin, etc.) and instruction time is available.

Graduate 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 one 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Transcript</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500-2500-3500-4500-5500 Flute (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1505-2505-3505-4505-5505 Oboe (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1510-2510-3510-4510-5510 Bassoon (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1515-2515-3515-4515-5515 Clarinet (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1520-2520-3520-4520-5520 Saxophone (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1525-2525-3525-4525-5525 Horn (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1530-2530-3530-4530-5530 Trumpet (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1535-2535-3535-4535-5535 Trombone (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1540-2540-3540-5540 Baritone (1-4)</td>
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<tr>
<td>1545-2545-3545-4545-5545 Tuba (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1550-2550-3550-4550-5550 Percussion (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1555-2555-3555-4555-5555 Voice (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1560-2560-3560-4560-5560 Violin (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1565-2565-3565-4565-5565 Viola (1-4)</td>
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<tr>
<td>1570-2570-3570-4570-5570 Cello (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1575-2575-3575-4575-5575 String Bass (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1580-2580-3580-4580-5580 Piano (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1585-2585-3585-4585-5585 Harpsichord (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1590-2590-3590-4590-5590 Organ (1-4)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>1595-2595-3595-4595-5595 Guitar (1-4)</td>
<td>May be repeated for credit.</td>
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</table>

ENSEMBLES

All students studying applied music are required to perform in a major musical 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Transcript</th>
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<tbody>
<tr>
<td>3600-5600 Small Ensemble (1, 1)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>3602-5602 Brass Choir (1, 1)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>3604-5604 Jazz Ensemble (1, 1)</td>
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<tr>
<td>3606-5606 Trombone Choir (1, 1)</td>
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<tr>
<td>3607-5607 Tuba Ensemble (1, 1)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>3610-5610 Percussion Ensemble (1, 1)</td>
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<tr>
<td>3612-5612 Baroque Ensemble (1, 1)</td>
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<tr>
<td>3620-5620 U.T. Singers (1, 1)</td>
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<tr>
<td>3630-5630 Chamber Singers (1, 1)</td>
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<tr>
<td>3632-5632 Collegium (1, 1)</td>
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<tr>
<td>3634-5634 Saxophone Choir (1, 1)</td>
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<tr>
<td>3640-5640 Opera Theatre (1, 1)</td>
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<tr>
<td>3642-5642 Opera Workshop (1, 1)</td>
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<tr>
<td>3650-5650 Concert Band (1, 1)</td>
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<tr>
<td>3652-5652 Campus Band (1, 1)</td>
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<tr>
<td>3654-5654 Varsity Band (1, 1)</td>
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<tr>
<td>3656-5656 Laboratory Band (1, 1)</td>
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<tr>
<td>3657-5657 Marching Band (1, 1)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>3670-5670 Symphony Orchestra (1, 1)</td>
<td>May be repeated for credit.</td>
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<tr>
<td>3680-5680 Concert Choir (1, 1)</td>
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<tr>
<td>3682-5682 University Chorus (1, 1)</td>
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<tr>
<td>3684-5684 Campus Chorus (1, 1)</td>
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<tr>
<td>3686-5686 Men’s Glee Club (1, 1)</td>
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<tr>
<td>3687-5687 Women’s Glee Club (1, 1)</td>
<td>May be repeated for credit.</td>
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GRADUATE

The Department of Music offers the Master of Music degree in performance, composition, music theory, choral conducting, and Suzuki string techniques, and the Master of Arts degree in musicology and music theory. See the Graduate School Catalog for admission and degree requirements.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>5000</td>
<td>Thesis</td>
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<tr>
<td>5001</td>
<td>Choral Conducting Document (3)</td>
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<td>5010</td>
<td>Organ Literature Seminar (3)</td>
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<td>5020</td>
<td>Piano Literature Seminar (3)</td>
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<td>Choral Literature Seminar (3)</td>
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<td>Vocal Literature Seminar (3)</td>
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<td>5050</td>
<td>Graduate Recital (3)</td>
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<td>5051</td>
<td>Opera Performance (3)</td>
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<td>5052</td>
<td>Vocal Chamber Music Performance (3)</td>
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<tr>
<td>5053</td>
<td>Choral Conducting Performance (3)</td>
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<td>5060</td>
<td>Seminar in Choral Performance (3)</td>
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<tr>
<td>5100</td>
<td>Independent Study in Music Theory (1-3)</td>
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<tr>
<td>5111</td>
<td>Advanced Harmony (3)</td>
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<tr>
<td>5112</td>
<td>Proseminar in Music Theory (1)</td>
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<tr>
<td>5114</td>
<td>History of Music Theory (3)</td>
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<tr>
<td>5115</td>
<td>Theory of Computers and Music Research (3)</td>
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<tr>
<td>5116</td>
<td>Musical Styles (3)</td>
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<tr>
<td>5119</td>
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<td>5121</td>
<td>Analytical Techniques (3)</td>
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<tr>
<td>5125</td>
<td>Practicum in Computers and Music Research (3)</td>
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<tr>
<td>5150</td>
<td>Seminar in Music Theory (3)</td>
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<tr>
<td>5200</td>
<td>Independent Study in Music History and Literature (1-3)</td>
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<td>5210</td>
<td>Introduction to Music Research (3)</td>
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<td>5220</td>
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<td>5270</td>
<td>Seminar in Musicology (3)</td>
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<td>5350-60</td>
<td>Medieval Music (3, 3)</td>
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<td>5352-62</td>
<td>Renaissance Music (3, 3)</td>
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<td>5353-63</td>
<td>Baroque Music (3, 3)</td>
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<td>5355</td>
<td>Music in the Classic Period (30)</td>
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<td>5597</td>
<td>Composition with Electronic Media (1-3)</td>
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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.


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 governmental 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. Graduate 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.


1510-20 Introduction to Philosophy (4, 4) 1510—Philosophical problems of human nature and values. 2020—Problems of language, knowledge and reality.

1600 Topics in Philosophy (4) May be repeated once for credit.

2310 Elementary Ethics (4) Theories of ethical values.

2410 Art and Experience (4) Introduction to various understandings of art.

2510-20 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 science.

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) Philosopohical assumptions and implications in major literary works.

3420 Philosophy of Literature (4) Study of the nature, functions, value and epistemic principles of literary arts.

3430 Concepts of Woman (4) Examination of some of theoretical foundations of feminism and anti-feminism.

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. Prerequisite: 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 the Department. Prerequisite to be determined by Department. May be repeated for credit.

4010 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (4-12) See page 167.

4103 Independent Study (1-4) See page 167.

4111-21 Modern Religious Philosophies (4, 4) (Same as Religious Studies 4111-21.)

4310 Intermediate Ethics (4) Topics in meta-ethics or ethics.

4370-71 Theoretical Issues in Medical Ethics (4, 4) 4370—Prerequisites: 2310 or 3611 or permission of the instructor. 4371—Prerequisite: 4370 or permission of the instructor. (Same as Religious Studies 4370-71.)

4410 Plato (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4420 Aristotle (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4430 Medieval Philosophy (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4450 Continental Rationalism (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4460 British Empiricism (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4470 Kant (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4480 Advanced Topics in Existentialism and Phenomenology (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4490 Process Philosophy (4) Prerequisite: Eight hours of philosophy or permission of instructor.

4510 Intermediate Symbolic Logic (4) Axiomatic development of propositional calculus and first-order functional calculus. Prerequisite: 3610 or equivalent.

4511 Advanced Topics in Logic (4) Prerequisite: 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) Prerequisite: 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. Prerequisite: 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. Prerequisites: 3770 or two years of social science.

GRADUATE

5000 Thesis

5050 Symbolic Logic (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 the 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 Studies in Metaphysics (4)

5910-20-30 Research (4, 4, 4)

6000 Doctoral Research and Dissertation

6110-20-30 Seminars in History of European Philosophy (4, 4, 4)

6150-60 Seminars in History of American Philosophy (4, 4)
Astronomy (150)

UNDERGRADUATE
2110-20-30 Introductory Astronomy (4, 4, 4) Surveys astronomical data and theories. 2110-20 concentrate on the solar system. 2130 introduces stellar astronomy including binary stars, clusters and nebulae. Recommend that the courses be taken in sequence. 4 hrs including demonstration lab.

2118-28-38 Honors: Introductory Astronomy (4, 4, 4) Observation and measurement of celestial objects 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.


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, astrophysics, and theoretical physics, etc. Students planning to major in physics are urged to consult the students 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 310-20-30 or Basic Engineering 1310-20-30 may be substituted for Physics 1318-28-38 and Physics 2318-20-30 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, Medical Physics, and first course in quantum mechanics will be earned.

Minor: A minor in Physics consists of 24 hours of courses including 2318-28-38 and the remainder from physics courses number 3000 or above. Substitution provisions in the major statement apply also to the minor.

An Engineering Physics Curriculum is also offered. The program is described on page 133 and listed in tabular form on page 115.

1210-20-30 Introductory Physics (4, 4, 4) General course for students whose major falls outside the physical sciences. Concepts of physics developed by observation of phenomena and logic rather than mathematics analysis. Specific areas covered in the first quarter are mechanics, heat and energy. In the second quarter, electricity, magnetism, and light are discussed. In the third quarter the main emphasis is on modern physics. It is recommended that the courses be taken in sequence. 1210-20 represent a survey of Classical Physics and are recommended as an introduction to the discipline for Liberal Arts non-science majors.


1410-20-30 Nature of the Physical World (4, 4, 4) Introductory course in concepts and principles of physical sciences which enables a student to establish a unified picture of the physical universe. In the first two terms the principles of mechanics, electricity, and wave motion are developed and applied to such varied fields as solar systems, atomic and molecular behavior, radiation, dynamic changes in the atmosphere and in the earth's crust, and to stellar and galactic phenomena. In the third term these principles are applied in more detail to such topics as nuclear energy, cosmology, atmospheric and oceanic phenomena, drifting continents and science and society. May be taken out of sequence only with permission of instructor. 4 hrs including demonstration lab.

1450 Physics of Athletic Activity (4) Principles of physics, particularly mechanics and heat, are introduced. Discrete topics of special interest will be covered. These interactions will emphasize their role in physical activities, particularly sports-related. Course topics include statics, equilibrium of a system, work, energy, momentum, force, work and energy. 4 hrs lecture-demonstration.

1810 Physics of Music (4) Production, transmission, and reception of sound waves. Frequency, intensity, timbre. Basic acoustics of instruments and voice. 4 hrs lecture and demonstration.

2210-20-30 Elements of Physics (4, 4, 4) 2210-Mechanics, Properties of Fluids, Heat. 2220-Electricity and Magnetism, Sound Waves. 2230-Optics, Atomic and Nuclear Physics, Radiation Protection. Basic physical principles and applications required in pre-medical, pre-dental, pre-pharmacy, and pre-veterinary programs. Should be taken in sequence. Prereq: Math 1550-60 or Math 1640-50 (or equivalent honors courses). 3 hrs lecture and 3 hrs lab.


3210-20-30 Mechanics (3, 3, 3) 3210-Statics, kinematics, and dynamics of a particle; 3220—
4540-50 Experimental Nuclear and Radiation Physics (4, 4) Interaction 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: 2330.


4710-20-30 Introduction to Health Physics (3, 3, 3) Radioactivity, interaction of electromagnetic radiation with matter, radiation quantities and units, 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, criticality prevention, radiation biology and ecology. Prereq: 3730.

4919-28-38-48-58-68-78-88-98 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.

4990 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 Introduction to Theoretical Physics (3, 3, 3)

5210-20-30 Advanced Modern Physics (3, 3, 3)

5240 Electronic Properties of Solids (3)

5250 Electromagnetic Properties of Solids (3)

5310-30-30 Advanced Dynamics (3, 3, 3)

5420-20-30 Electromagnetic Theory (3, 3, 3)

5440 Experimental Methods of Infrared and Raman Spectroscopy (3)

5460 Radiation Chemistry (3)

5510-20-30 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 Polymolecular Molecules (3)

5910-20-30 Special Problems (3, 3, 3)

5911-21-31 Special Problems in Teaching of Physics (1, 1, 1)

5990 Seminar (1-3)

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)

6510 Interaction of Electrons with Gases (3)

6520 Interaction of Electrons with Solids (3)

6530 Interaction of Radiation with Matter (3)

6710-20-30 Advanced Solid State Physics (3, 3, 3)

6810 Vibrational Problems in Molecular Spectra (3)

6920 Molecular Vibration-Rotation Theory (3)

Political Science (801)


Associate Professors: R.B. Cunningham, Ph.D. Indiana; J.W. Dodd, Ph.D. Tulane; A.A. Elliott, Ph.D. Columbia; G.C. Evans, Ph.D. Columbia; A.H. Hopkins, Ph.D. Syracuse; P.S. Kronenberg, Ph.D. Pittsburgh; S.J. Ocker, Ph.D. Columbia; R.L. Peterson, Ph.D. Yale; T. McN Simpson, I.I., Ph.D. Johns Hopkins; T.A. Smith, Ph.D. Ohio State.

Assistant Professors: J.A.V. Allen, M.S.W. Michigan; B.P. Greene, Ph.D. Indiana; W. Lyons, Ph.D. Oklahoma; C.P. Mauney, Ph.D. Tennessee; G.J. Rathjen, Ph.D. Michigan State; R.E. Robson, Ph.D. Maryland; B.D. Rogers, Ph.D. Indiana; P.R. Schuman, Ph.D. Johns Hopkins.


BUREAU OF PUBLIC ADMINISTRATION

Professors: T.D. Unger (Director), Ph.D. Iowa; H. Plas (Associate Director), Ph.D. Illinois.

Associate Professor: P.S. Kronenberg (Associate Director, Nashville), Ph.D. Pittsburg.

Assistant Professors: J.A.V. Allen, M.A. Michigan; B.P. Greene, Ph.D. Indiana; R.E. Robson (Assistant Director), Ph.D. Maryland; B.D. Rogers, Ph.D. Indiana.

Instructor: F.R. Insho, M.A. SUNY.

UNDERGRADUATE

A Major consists of forty hours that must be distributed as follows:

(1) Eight hours at the 2000 level in political science or in political science courses not used for triad credit but included on the History and Social Science list.

(2) Thirty-two hours in political science courses numbered at 3000 and above. Upper division courses on the triad list may be included. These thirty-two hours must 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; and Political Theory and Methodology.

A Minor consists of at least four hours that must be distributed as follows:

(1) Eight hours at the 2000 level in political science or in political science courses not used for triad credit but included on the History and Society list.

(2) Sixteen hours in political science courses numbered at 3000 and above. Upper division courses on the triad list may be included.

**Public Administration.** See pages 71 and 160.

**American Studies.** See Cultural Studies.

**Asian Studies.** See Cultural Studies.

**Latin American 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.

**United States Government and Politics/Public Administration**

2510-20 United States Government and Politics (4, 4) 2520—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)

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)

Comparative Government and Politics

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)

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 democratic systems.

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.

4665-66 Policy-Making in Democracies (4, 4) Comparative approach to theory and process of making public policies.

4575 Special Topics in Comparative Government and Politics (4) May be repeated up to a maximum of 8 hours credit with permission of department.

International Relations

3701-02 Introduction to International Relations (4, 4) 3701—Methodology and background. 3702—Interactions and institutions including war, diplomacy, law, and organization.

3705 Contemporary Diplomatic and Military Problems (4) Analysis of current international events.

3710-80 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.

3715 Contemporary Problems of Soviet Foreign Policy (4)


**Political Theory and Methodology**

3801-04 Study in Political Thought (4, 4, 4, 4) 3801—Classical Greek and Roman political thought. 3802—From Augustine to Luther: Emphasis on problems and theories of religion and politics. 3803—Machiavelli through the Enlightenment. 3804—Political theories of industrial and technological societies; 19th and 20th centuries.

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.

Other

4101 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

4975 Proseminar in Political Science (4) Selected research for seniors; primarily for majors. May be repeated up to a maximum of 8 hours credit 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

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5110-20 Seminar in World Political Theory (3, 3)

5140 Politics, Administration and Community in Non-metropolitan Areas (3)

5150 Internship in Political Science (3-9)

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)
Psychology (830)

Professors:
W.H. Calhoun (Head), Ph.D. California (Berkeley);

Associate Professors:
H.S. Bacon, Ph.D. Tennessee; C.P. Cohen, Ph.D. Kansas; L.F. Droppleman, Ph.D. Catholic; H.R. Friedman, Ph.D. Tennessee; S.J. Hendel, Ph.D. Johns Hopkins; A. McIntyre, Ph.D. Yale; W.G. Morgan, Jr., Ph.D. Tennessee; W.M. Simmons, M.S.S.W. 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 plan careers in such areas as business, law, and journalism, or who for other reasons desire a liberal education concentrating on psychology. Psychology 2500 and two courses from 2520-30-40 or 2518-28 are prerequisite to a major consisting of Psychology 3150, at least 4 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. Prerequisites to the major include Psychology 2500, two courses from 2520-30-40 or 2518-28, Mathematics 1540-50-60 or 1840-50-60, and Biology 1210-20-30. The major consists of Psychology 3150, 8 hours of laboratory, field, or practicum courses, and 28 or more hours of upper division courses, of which 12 hours must be in courses at the 4000 level.

Minor: A minor in Psychology shall consist of Psychology 2500 and 20 additional hours from 3000 and 4000 level courses.
3550 Child Psychology (4) Origin and principles of behavior in infancy and childhood; physical, intellectual, social, emotional, and language behavior of the normal child. 2540 recommended.


3616-26 Human Relations (0, 4) Experience and study of human relations in dyadic, small and large group situations. Primarily experiential. No credit until sequence is completed. Satisfactory-No Credit.

3650 Abnormal Psychology (4) Constitutional and environmental factors in abnormal behavior, neurotic and psychotic reactions; non-technical discussion of diagnostic and therapeutic methods. 2540 recommended.

3660 Sociopsychological Approaches to Abnormal Behavior (4) Social learning approaches to description and change of maladaptive behavior, including emphasis on historical and current conceptions, descriptions of the varieties, and detailed study of techniques for changing deviant behavior. Prereq: 2540.

4101 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

4107 Experience in Individualized Instruction (2) Supervised participation as a tutor in individualized instruction. Prereq: permission of instructor. May be repeated once.

4109 Undergraduate Research (1-4) May be repeated for credit to maximum of 16 hrs. Prereq: permission of instructor.

4120 Topics in Social Psychology (4) Intensive analysis of selected research topics. Prereq: 3120 or Sociology 3130. (Same as Sociology 4120).

4230 Sensory Processes and Perception (4) Survey of sensory and perceptual processes with emphasis on audition and vision. Prereq: 3150, 2520 recommended.

4239 Laboratory in Sensory Processes and Perception (2) Prereq or coreq: 4230.

4340 Human Factors in Man-Machine Systems (4)

4460 Organizational-Industrial Psychology (3) Same as Industrial Management 4460.

4510 Personality Theories (4) Prereq: 3650 or 3660.

4519 Research in Personality (4) Discussion and demonstration of research on individual as it relates to major theoretical issues and to substantive areas of investigation. Prereq: 3150 or equivalent and senior standing.

4520 Personality and Social Systems (4) Prereq: 2540.

4550 Psychology of Aging (4) Behavioral changes from maturity through old age. Prereq: permission of instructor.

4610 Group Processes (3) Study and experience of theory and techniques of group processing and facilitation. Those participating in 4610 are expected to continue into 4620 and 4630. Prereq: 3616-26 and permission of instructor.

4620 Seminar in Group Processes (0, 6) Didactic and laboratory experience for those qualified for further training as group facilitators. Prereq: 4610 and permission. No credit given until sequence is completed.

4640 Psychological Tests and Measures (4) Theory and construction of individual and group measures; survey of various methods of assessment of intelligence, personality, special abilities, and educational achievement. Prereq: 3150.

4650 Symbolic Processes (4) Logic of signs and symbols; directed and associative thinking; memory, problem-solving, and concept formation; nature, use, and development of language. Prereq: 3210 or permission of instructor.

4660 The Psychology of Language (4) Theories and descriptions of phonology, syntax, and semantics as applied to psychology and related disciplines. 4650 or linguistics background recommended.

4710 Physiological Psychology (4) Nervous system and physiological correlates of behavior. Prereq: One year of Biology or Zoology and Psychology 2520.

4719 Physiological Psychology Laboratory (4) Laboratory studies of nervous system and physiological correlates of behavior. Coreq: 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 Ontology of Social Behavior (4) Genetic, evolutionary, ecological, and developmental processes as they apply to social organization and dynamics of vertebrates. Prereq: permission of instructor.

4830 History and Systems of Psychology (4) Prereq: 9 hours of Upper Division psychology.

4850 Learning Theories (4) Historical and theoretical development of learning models. Prereq: 3510.

4860 Programmed Learning (3) (Same as Education C & I 4860.)

4870 Contemporary Research in Behavior of Women (4) Study of interaction of cultural and biological factors in determining the behavior of woman, with emphasis on physiological mechanisms involved.

4880 Afro-American Psychology (4) Review and analysis of psychological literature on Afro-Americans. Prereq: permission of instructor. (Same as Black Studies 4880).

4890 Differential Psychology (3) Nature and sources of individual differences in behavioral characteristics, and differences between racial, ethnic, socio-economic, sex, and other groups. Prereq: 4640.

4900 Aspects of Urban Environment I (3) Interdisciplinary course in urban problems. Prereq: Permission of one 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)
  - 5075 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)

5140-50-60 Psychoeducational Assessment (3, 3, 3)

5149-59-69 Practicum in School Psychology (2, 2)

5170-80-90 Proseminar 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)

5250 Readings in Psychology (5)

5260 Special Problems in Psychology (1)

5270 Special Problems in Psychology (2)

5280 Special Problems in Psychology (3)

5290 Special Problems in Psychology (4)

5300 Special Problems in Psychology (5)

5319 Field Work in School Psychology: Level I (2)

5340 Group Dynamics (3)

5350-60-70 Seminar in Psychology (3, 3, 3)

5400 Psychophysiology and Scaling Methods (3)

5420-30-40 Advanced Psychological Statistics (3, 3, 3)

5445 Advanced Correlational Methods (3)

5450 Human Problems in Administration (3)

5460 Personnel Research Seminar (3)

5500 Fundamentals of Psychometrics (4)

5510 Instrumentation for Psychological Research (3)

5520 Theory of Mental Measurement (3)

5530 Test Construction and Interpretation (3)

5550 Advanced Social Psychology (3)

5560-70 Seminar in Social Psychology (3, 3)

5580 Theories of Personality (3)

5581-82-83 Clinical Psychology I: Human Development and Personality (2, 2, 2)

5589 Psychological Techniques Laboratory (2)

5590 Psychodynamics (3)

5591-92-93 Clinical Psychology I: Patterns of Adaptation (2, 2, 2)

5600 Psychopathology (3)

5601-02-03 Clinical Psychology I: Behavioral Deviance and Psychopathology (2, 2, 2)

5610-20 Psychology of Learning (3, 3)

5650 Ethics and Professional Practices (1)

5670 Forensic Psychology (2)

5680 Neural Basis of Behavior (3)

5690 Psychopharmacology (3)

5713 Learning Modules for Techniques in Professional Psychology (1-4)

5750 Ethological Psychology (3)

5760 General Vertebrate Neuroanatomy (3)

5769 Advanced Techniques in Physiological Psychology (3)

5790 Seminar in Psycholinguistic Concepts in Speech Pathology (3)

5810-20 Techniques of Psychological Examination (3, 3)

5819-29 Practicum in Techniques of Psychological Examination (2, 2)
3860 Islam (4) Origin and early history, rapid spread as a world faith, development of Muslim theology and culture, interaction with modern cultures.

3710 Literature of English Bible (3) (Same as English 3710.)

3770 Zen Buddhism (3) Examination of historical, philosophical, and meditational materials of Zen. Special emphasis on Zen theories of emptiness, no-self, mindless enlightenment, and the Koan.

4210 Topics in Ancient Israelite and Ancient Near Eastern Religions (4) Prereq: 3110-20 or permission of instructor. May be repeated once for credit.

4310 Jesus and Paul Compared (4) Jesus' teaching and activity in context of first-century Palestinian Judaism; analysis of what Apostle Paul made of the tradition of and about Jesus. 2610 or 2611 recommended.

4450 Topics in American Religions (4) Prereq: one of the following: 3510, 3520, 4410; or permission of instructor. May be repeated once for credit.

4640 Topics in Early Christianity and Hellenistic Religions (4) Selected figures, issues, and institutions. Senior and graduate students only, except by permission of Department. Prereq: Permission of instructor. May be repeated for credit to a maximum of 12 hours.

4670 Topics in Eastern Religions (4) Selected figures, issues, and institutions. Senior and graduate students only, except by permission of Department. Prereq: 3650-60-70. May be repeated for credit to a maximum of 12 hours.

4810-20-30 Readings and Research in Religious Studies (3-4, 3-4, 3-4)

PROBLEMATIC OF RELIGION

UNDERGRADUATE

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 of 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 for religious inquiry by phenomenon of literature. Relation of religious and moral consequence of literary works. Early Christianity, and the late classical. Relation of religious language 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 influences of Hindu and Buddhist Philosophy on Western thinkers.

3780 The Literature of Discord (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 Camus.

4101 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (1-16) See page 167.

4103 Independent Study (1-16) See page 167.

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 hours of philosophy 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.

4540 Social and Religious Change (4) (Same as Sociology 4540.)

4610 Topics in Western Religious Thought and Institutions (4) Selected figures, issues, and institutions. Students and graduate students only, except by permission of Department. Prereq: 3611-71. May be repeated for credit to a maximum of 12 hours.

4810-20-30 Readings and Research in Religious Studies (3-4, 3-4, 3-4)

4850 Proseminar in Religious Studies (3) For advanced students in religious studies; staff of Department will participate. Specific topics, e.g., nature and function of myth of religion, problem of transcendence, varieties of religious experience, will be assigned. Prereq: Permission of instructor. May be repeated for credit. Maximum 9 hours.

4940 Sociology of Religion (4) (Same as Sociology 4940.)


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.

GRADUATE

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

RELATED LANGUAGE STUDIES

3141-51 Elementary Classical Hebrew (4, 4) 3141- Basic elements of Hebrew phonology, script, morphology and syntax. 3151-Continued grammar study and selected reading and transition. Introduction to basic elements of text, literary form, historical, and tractio criticism.

3170-80-90 Intermediate Classical Hebrew (4, 4, 4) 3170-Torah and Former Prophets. 3180-Prophecies. 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.


4840 Readings in Selected Language Related to Religious Studies (3-4) Prereq: Permission of instructor. May be repeated. Maximum credit 12 hours.

Romance Languages

Professors:

H. C. Rulffse (Head), Ph.D. Ohio State; W. J. Sheehan, Ph.D. Catholic University; J. M. T. Bealus, Ph.D. Indiana; W. C. M. Connolly, Ph.D. University of Minnesota; J. M. A. Brintzenhoof, Ph.D. Leiden; H. E. Lemle, Ph.D. Minnesota; T. D. Phillips, Ph.D. Pennsylvania; A. H. Wallace, Ph.D. North Carolina.

Associate Professors:


Instructors:

C. L. Almeida, M.A. Middlebury; C. G. Cox, M.A. Tennessee; M. R. Saborsky, Ph.D. Leiden; M. Sanders, B.A. Solbom, S.T. Selman, M.A. Tennessee; P. A. Wilson, M.A. Tufts.

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 prior to taking 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 residence 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, or equivalent work at another 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) during a 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.

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) Consists of 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 Dean): 4 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 4210, Italian 4310; Spanish 4210). Students whose primary interest is language would complete the major with 9 hours of language (3420-30 or
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. 1518 not open to students who have taken French 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 French program for the first year, but will be enriched whenever possible. Students will be expected to spend only normal amount of time preparation. Those who find the course too difficult may easily transfer to a regular class. Possible major and minors in French are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1520 instead of 1520.

3000 French Transition (3) 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 study abroad. 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 reading knowledge of second foreign language. Prereq: Two years of some foreign language in college or permission of instructor. Undergraduate study for graduate credit only. No credit for students having had 1510-20 or equivalent. No auditors.

3210-20-30 French Literature in English Translation (3-4, 3-4, 3-4) From the Origins through Renaissance: Life of St. Alexis, Song of Roland, Romance of the Rose, Rabelais, Du Bellay. 3220—The Classical Period and the Age of Reason: The great dramatists, La Princesse de Cleves, Voltaire, Rousseau. 3230—The Nineteenth and Twentieth Centuries: Balzac, Flaubert, Proust, Camus. No change in credit hours after add deadline. Option of 4 hours credit must present appropriate amount of extra work above that required for 3 hours.

3240 Women in French Culture (4) Influential role of women in shaping French history and culture. Feminists (George Sand); royal mistresses (Mme. de Maitenon); intellectuals (Mme. de Staël); 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 prose; review 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 167.

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.
GRADUATE

See Graduate School Catalog for requirements.

5000 Thesis

5011 Techniques in Literary Analysis (2)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5151-61-72 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.

3510-20-30 Aspects of Portuguese Literature (4, 4) Prereq: 2520; C, equivalent. Recommended for literature majors.

4101 Foreign Study (1-18) See page 167.

4310-20-30 Directed Readings in Brazilian and Portuguese Literature (3, 3, 3) May be repeated with permission of instructor.

GRADUATE

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

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 16 so that each student may receive maximum instruction. 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 1510 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 2510-20, 1518-28, or equivalent.

2610-20 Panorama of Hispanic Culture (4, 4) 2610 — Peninsula 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 (3) 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.

3010-20 Spanish and Spanish American Literature in English Translation (3-4, 3-4, 3-4) 3010 — Masterpieces of Classical Spanish Literature: Cervantes, realism and the picarones novel, religious mystics, Golden Age Theatre. 3020 — Masterpieces of Twentieth Century Spanish Literature: Unamuno, Lorca, Baroja, Ortega. 3030 — Contemporary Spanish American Fiction: Marquez, Borges, Fuentes, Asturias. No change in credit hours after add deadline. Option of 4 hours credit must present an appropriate amount of extra work above that required for 3 hours.

3410-20 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 3810-20. 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 167.

4110-20-30 Spanish Literature of the Golden Age (3, 3, 3) The picarones novel, Cervantes, the Comedy.

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.)

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.

4540-60-70 Studies in Modern Spanish Style (3, 3, 3) Prereq: 3410-20-30 or permission of instructor.

5010-30 Spanish Literature of Nineteenth Century (3, 3, 3) Prereq: 2130 or equivalent.

4618-28-38 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—Nonfictional Prose. 4720—Drama. 4730—Lyric Poetry. Prereq: 2130 or equivalent.

Sociology (915)

Professors: J.A. Black (Head), Ph.D. Iowa; D.J. Champion, Ph.D. Purdue; N.E. Cole (Emeritus), Ph.D., Cornell; L.E. Dotson, Ph.D. Vanderbilt; L. Eberse (Chief, Office of Planning and Administration), Ph.D. Pennsylvania; W.B. Jones (Emeritus), Ph.D., Vanderbilt; J.B. Knox (Emeritus), Ph.D. Harvard.

Associate Professors: D.M. Bledz, Ph.D. Michigan State; D. Cierdla, Ph.D. Michigan State; D.W. Hastings, Ph.D. Massachusetts; T.C. Hood, Ph.D. Duke; N.E. Shover, Ph.D. Illinois (Urbana); S.E. Wallace, Ph.D. Minnesota; P.L. Vuebben, Ph.D. Wisconsin.

Assistant Professors: S. Kurth, Ph.D. Illinois (Chicago); S.J. Miller, Ph.D. Kansas; S.E. Norland, Ph.D. Iowa; R.G. Perrin, Ph.D. British Columbia; T.J. Weirath, Ph.D. Wisconsin (Madison).

Instructor: D. Harris, M.A. Tennessee.

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 prerequisite to a minor.

Social Work: Students contemplating entrance into the professional world of social service 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 pages 41-42. 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 (4) 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.

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.

3130 Social Psychology (4) Social basis of human behavior; socialization; social status and social roles; personality; social adjustment.

3140 Deviance and the Social Order (4) 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 (4) Sociological examination of the structure of current American sex roles utilizing various theoretical perspectives, e.g., role theory and bargaining. Development and effects of organizational 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 (4) 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 (4) Sociology of mass communication and media, nature of mass communications processes as bureaucratic structures, and effects of mass communication on social behavior are examined.

3330 Prejudice and Racism in the United States (4) (Same as Black Studies 3330.)

3340 Sociology of Poverty and Inequality (4) Factors contributing to condition of poverty and social classes of being poor. (Same as Black Studies 3340.)

3350 Social Stratification (4) Study of economic class, prestige, life style, and power hierarchies; causes and consequences of structural social inequality.

3410 Urban Environment (4) Introduction to urban environment includes: Emergence of the city; cities of New World; rise of metropolitan America; urban society; social worlds within urban environments.

3420 Urban Problems (4) Crises and the urban conscience; urban problems and interventions; housing, urban renewal and neighborhood conservation; the urban poor, the disordered and alienated; planning for urban youth; the urban elderly; the social and physical planning process; new towns.

3510 Juvenile Delinquency (4) Critical assessment of nature of the delinquency problem, major sociological causes and their implications for control, and administration of juvenile justice.

3610 Sociology of Occupations (4) Introduction to occupations and their relation to the individual and society; technology and occupations; unequal rewards and occupations; social organization and occupations.

3620 Occupations as Organizations (4) Occupations as interest groupings; their impact on work settings and the wider community.

3690 Sociology of Aging (4) 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 political power.

3810 Sociological Theory (4) Survey and analysis of development of sociological theory from time of Comte to present.

3910 Introduction to Social Research (4) Scientific method applied to social phenomena; formulating testing hypotheses; techniques for collecting data; measuring sociological variables; interpreting research findings. Lectures and laboratory.

3920 Elementary Statistical Methods (4) 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.

4000 Special Topics (4) Students-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.

4030 Society and Law (4) 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.
5000 Thesis
5040 Methodological Issues in Social Research (3)
5050 Seminar in Political Sociology (3)
5060-70 Special Social Investigation (3, 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 Crime, Law, and Social Control (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 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 Urban and Regional Sociology (3)
5920 Seminar in Social Attitudes (3)
5940 Delinquency and the Social Structure (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)
6530 Sociology of Law (3)
6540 Readings in Criminology and 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

Professors:
R.G. Allen (Head), D.F.A. Yale; R.M. Cothran, Jr.;
A. Quayle, Royal Academy Dramatic Arts (London); P.L. Soper, Ph.D. Cornell;
G.A. Yeomans, Ph.D. Louisiana State.

Associate Professors:
T.P. Cooke, Ph.D. Florida State; J.F. Fields, M.A.
Ohio State; A.J. Harris, Ed.D. Tennessee;
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. Southern Illinois;
P.W. Glenn, Ph.D. Northwestern; L.W. Lester, Ed.D.
Tennessee; R.R. Mashburn, M.A. Tennessee; M.R.
Paskov, Ph.D. Illinois.

Instructors:
M.J. Gari, B.F.A. Carnegie Mellon; F.D. Julian,
M.A. 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, 2211-2, 3525-53-54; 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, Speech and Theatre 1441, Theatre 1510. The concentration consists of Speech 2311 (or 3551 by 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 of division (Audiology and Speech Pathology, Broadcasting, Speech, Speech and Theatre, or Theatre). At least twenty-four 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

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 degree of 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.
minor in Theatre which consists of 24 hours in Theatre courses numbered above 2000.

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 (943)

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: 2311.

2341 Deliberation in Assemblies (4) Various techniques for coming to collective decisions; parliamentary procedure.

2351 Interpersonal Communication (4) Communication theory in its application to informal, face-to-face situations.

2410-20 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, business 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.

4222 Advanced Argumentation and Debate (4) Prereq: 2331 or permission of instructor.

4461 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 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 Topics in Group and Interpersonal Communications (3)

5220 Quantitative Projects in Speech Communications (3)

5430 Studies in Tennessee Oratory (3)

5440 Organizational Communication (3)

5450 Studies in Collection and Use of Recorded Discourse (3)

5550-60-70 Studies in Persuasion (3, 3, 3)

Theatre (976)

UNDERGRADUATE

1510 Introduction to Theatre (4) Theatre as experience; materials and techniques. Non-technical introductory course for general student, not available for credit to theatre majors.

1520-30 Fundamentals of Play Production (4, 4) 1520—Production and analysis of 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. Prereq: permission of instructor. 2121-21 Stagecraft (4, 4) 2121—Techniques of scenery construction, 2121—Fundamental methods of stage lighting and crew assignments on major productions.

2231 Basic Stage Costuming (4) Costume history and its application to the stage; basic techniques in costume construction.

3121-22 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: 2221-21 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.

3321-22 Introduction to Lighting Design (4, 4) Mechanics of stage lighting; elementary theory; problems in basic lighting practice. Must be taken in sequence. Prereq: 2221-21 and permission of instructor.

4351-52 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: 3121-22 and permission of instructor.

4151 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.

4341-42 Advanced Lighting Design (4, 4) Relationship of light to setting in creating stage environment. Must be taken in sequence. Prereq: 3221-22 and permission of instructor.

4441-42 Advanced Play Directing (4, 4) Problems of play interpretation; directing period plays; preparation of a play for public performance. Must be taken in sequence. Prereq: 3451-52 and permission of instructor.

4541-42 Advanced Theatre Costume Design (4, 4) Advanced problems in costume design and construction; pattern drafting; draping. Prereq: 3511-12.

4511 Play Production in Secondary Schools (4)

4751-52 Dramatic Theory and Criticism (4, 4) 4750: From Aristotle to Lessing. 4760: From Goethe to Sartre.

4951-52 Playwriting (4, 4) Prereq: Permission of instructor.

GRADUATE

5250 Seminar in Playwriting (3)

5310 Studies in European Theatre History (3)

5320 Studies in American Theatre History (3)

5520 Projects in Lighting Design (3)

5530 Projects in Play Directing (3)

5640 Projects in Scene Design (3)

5650 Projects in Costume Design (3)

5890 Studies in Theatrical Production (3)

5990-88-70 Studies in Dramatic Theory and Criticism (3, 3, 3)

Speech and Theatre (945)

UNDERGRADUATE

1441 Introduction to Cinema (4) Development of motion pictures as a medium; film aesthetics; analysis and criticism of selected films.

2031 Introduction to Oral Interpretation (4) Art of reading aloud; development of interpretive techniques and their application to selected passages of prose, poetry and drama.

3651 Oral Interpretation of Prose Literature (4) Prereq: 2031 or permission of instructor.

3661 Oral Interpretation of Poetry (4) Prereq: 2031 or permission of instructor.

3671 Oral Interpretation of Drama (4) Prereq: 2031 or permission of instructor.

4101 Foreign Study (1-16) See page 167.

4102 Off-Campus Study (1-16) May be repeated for major credit to maximum of 12 hours. See page 167.
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 except as may be indicated by prerequisites.

Major: Consists of Biology 3110, 3120, 3130; 18 hours of upper division Zoology courses (except 3010-20-30), and 3 quarters of chemistry or biochemistry at the 2000 level or above. Of the 18 hours of upper division Zoology courses a minimum of 6 hours must be at the 4000 level, including at least one laboratory or field course. Prerequisites to this concentration are: Biology 1210-20-30 or Zoology 1118-28 (Zoology 2920-30 may be substituted for Biology 1210 or Biology 1220), and Chemistry 1110-20-30. Corequisites are Mathematics 1840-50 or 1550-60 (Math 1840-50 is the recommended choice); and a year sequence in physics (except 1410-20-30).

Note: Students majoring in Zoology are advised to exercise care in fulfilling the Science and Mathematics triad requirements. Mathematics 1840-50 or 1540-50-60 and Chemistry 1110-20-30 (or 20 or 21 hours altogether) must be completed by all zoology majors.

Minor: Consists of 24 hours of Zoology, or Zoology and Biology, courses. (Zoology courses must be at the upper division level; but 2000-level Biology courses may be used, e.g. Biology 2110, 2120, 2130.) Prerequisites to this concentration are Biology 1210-20-30 or Zoology 1110-20-30 or 1118-28 and Chemistry 1110-20-30.

Note: Certain Zoology courses require organic chemistry or other prerequisites—Consult the catalog description for each course.

Many courses in this department are offered only in specified quarters. Students should plan in advance the proper sequence. Information on the quarter a course is to be offered is available in the Departmental Office.

1118-28-38 Honors: General Zoology (4, 4, 4) Honors courses are designed for selected students admitted on basis of performance on American College Testing Program (freshmen) or grade point average (1110-1200-3000). 1118—Unity of Life, Diversity of Life. 1128—Continuity with change; Ecology. 1138—Special Topics (offered only on demand). Biology 1230 should be substituted for Zoology 1128 by students who earn less than a B in 1118. A year's sequence could be completed with addition of Biology 1210 2 hrs and 2 labs.

2460-70-80 Human Anatomy and Physiology for Nurses (3, 3, 3) Fundamentals of human anatomy and physiology. 2 hrs and 1 lab.

2461-71-81 Human Anatomy and Physiology for Nurses (4, 4, 4) Same as 2460-70-80 except 2 hrs and 2 labs.

2920-30 Human Physiology (4, 4, 4) Fundamentals of biology, principles of human physiology and anatomy. Must be taken in sequence. Prerequisite: One year of college chemistry. 2 hrs and 2 labs.

3040 Natural History of the Vertebrates (5) Behavior, life history, phylogeny, and classification. 3 hrs and 2 labs or field periods.

3050 Comparative Vertebrate Embryology (5) Developmental morphology of selected vertebrates. 2 hrs and 3 labs.

3060 Comparative Vertebrate Anatomy (4) Anatomy of organ systems. Dogfish shark and cat used in laboratory. 2 hrs and 2 labs.

3071 Immunology (3) Same as Microbiology 3071.

3080 Principles of Animal Physiology (5) Physiology of organ systems of animals including man. Prerequisite: Biology 2060. Corequisite: Physics 2110-20-30 recommended. 3 hrs and 1 lab.

3090 Biology and Human Affairs (3) Same as Botany 3090.

3110 General Entomology (5) Introduction to insects; basic structure, development, behavior; classification of insect orders and representative families; interpretation and use of keys. Prerequisite: Biology 2130, or permission of instructor. 3 hrs and 2 labs.

3150 Invertebrate Zoology (5) Biology of invertebrates (except insects) with emphasis on ecology and behavior. Prerequisite: Biology 2130. 3 hrs and 2 labs.

3220 Physiology of Reproduction (3) Same as Animal Science 3220.

3320 Histology (4) Study of animal tissues. Prerequisite: Biology 2120. 2 hrs and 2 labs.

3410 Bioethics (3) Relationship between biological discoveries and human values. Open discussion of selected dilemmas arising from new knowledge about medicine, behavior, resources, and technology.

3920 Hormones and Endocrine Function in the Human Body (3) Basic course in human endocrinology with emphasis on the practical diagnosis of hormone levels for analysis of glandular function and treatment of endocrine abnormalities. 3 lectures and 1 discussion. Prerequisite: a course in physiology.

4007-4010-11-12-13-14-15-16-17 Minicourse in Zoology (2, 2, 2, 2, 2, 2, 2, 2) Selected, advanced topics in Zoology, concentrated in time and subject matter. Consult departmental listing for actual topics offered. Prerequisite: As posted. May be repeated for credit.

4050 Developmental Biology (4) Experimental morphogenesis, fertilization, cellular interactions, hormonal effects and related topics with examples drawn primarily from invertebrates and vertebrates. Prerequisite: 3050. 2 hrs and 2 labs.

4110-20-30 Undergraduate Research Participation (2, 2, 2) Experience in active research projects under supervision of staff members. Prerequisite: Junior or senior standing and prior permission of instructor.

4140 Practicum in Zoology (1-3) Participation in practical application of zoology in community institutions, government organizations and industry. Approximately 5 hrs involvement per week. Prerequisite: Biology 2110, 2120, 2130 and senior standing.

4190 Mammalogy (4) Classification, evolution, distribution, reproduction, populations, and behavior. 2 hrs and 2 lab or field periods. (Not open to students with credit for 3190.)

4200 Ichthyology (5) Classification, collection and identification, distribution, life histories, and economic importance of fishes. Prerequisite: Biology 2130, or permission of instructor. 2 hrs and 2 lab or field periods. (Not open to students with credit for former 3200.)

4210 Cell Physiology (5) Development of modern concepts in cell physiology from point of view of information and control which examines kinetics and integration of cellular activities. Prerequisite: Cell Biology or any Physiology, and Organic Chemistry. Biochemistry recommended. 3 lectures and 1 lab.

4240 Animal Ecology (4) Environmental factors determining distribution and numbers of animals; intra-specific relations; problems and methods. Prerequisite: Biology 2130. 2 hrs and 2 labs.
4250 Comparative Animal Physiology, I (3) Environmental physiology. Survey of physiological mechanisms and their relation to ability of animals to survive in diverse physical environments. Prereq: Biology 3120-30, 2 years of chemistry. 3 hours.

4259 Comparative Animal Physiology Laboratory, I (1) Coreq: 4250. 1 hr.

4260 Comparative Animal Physiology II (3) Sensory, effecter and integrative physiology. Prereq: 3080.

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 endocrine glands in vertebrates and invertebrates. Their role and interaction in maintenance of the organism and species. Prereq: 3080 or 3920. 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, behavior, 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.


4410 General Parasitology (4) Morphology, taxonomy, 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 morphological features, distribution, life histories, and control of arthropods that parasitize man or serve as vectors of human pathogens. Prereq: Agricultural 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 Agricultural Biology 4510.)

4610-20 Comparative Animal Pathology (2, 2) Abnormal morphological changes and their causes. 4610—Cell and tissue changes. 4620—Organ, organ system, and organism changes. Recommended: 3080, 3320, 3060.

4619-29 Comparative Animal Pathology (2, 2) 4619—Cell and tissue changes. 4629—Organ, organ system, and organism changes. Coreq: 4810-20.

4660-70 Limnology (4, 4) 4660—Effects of origin, age, and location of lakes on their physical and chemical nature. 4670—Lake communities, productivity and pollution. Prereq: Chemistry 1110-20-30 and Biology 2130. Botany 1110-20-30 and Physics 1210-20-30 recommended. 2 hrs and 2 labs (4660); 3 hrs and 1 lab (4670). Must be taken in sequence, except with permission of instructor. Not open to students with credit in 3650 or 4650.

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, 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.

4940 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 3840.)

GRADUATE

5000 Thesis

5080 Graduate Research Participation (3)

5110-20-30 Special Problems (2, 2, 2)

5150 Zoological Bibliography (1)

5180 Fresh-Water Invertebrates (4)

5210 Plant Parasitic Nematodes (4)

5220-30-40 Advanced Vertebrate Physiology (4, 4, 4)

5260 Physiology of Hormones (4)

5270 Advanced Neuromuscular Physiology (5)

5280 Insect Physiology (4)

5290 Quaternary Problems (4)

5310-20 Seminar in Teaching of College Zoology (2, 2)

5350 Biometry (3)

5410 Advanced Parasitology (4)

5430 Advanced Medical Entomology (3)

5550 Advanced Ornithology (4)

5570 Animal Populations (3)

5610-20 Foundations of Radiation Biology (4, 4)

5630 Methods of Experimentation with Laboratory Mammals (3)

5660 Physiology of Development (3)

5670 Cellular Immunology (4)

5760 General Vertebrate Neuroanatomy (3)

5780 Radiation Physiology (4)

5820 Methods of Taxonomy (4)

5840 Aquatic Insects (4)

5860 Geographic Distribution of Animals (4)

5870 Insect Syneology (4)

6000 Doctoral Research and Dissertation

6110-20-30 Seminars in Cellular Biology (2, 2, 2)

6140 Seminar in Immunobiology (2)

6210-20-30 Seminar in Physiology (2, 2, 2)

6310-20-30 Seminar in Cytology (2, 2, 2)

6350-60-70 Seminar in Developmental Biology (2, 2, 2)

6410-20-30 Seminar in Parasitology (2, 2, 2)

6510-20-30 Seminar in Genetics (2, 2, 2)

6610-20-30 Seminar in Ornithology (2, 2, 2)

6650-60-70 Seminar in Aquatic Biology (2, 2, 2)

6710-20-30 Seminar in Ecology (2, 2, 2)

6810-20-30 Seminar in Entomology (2, 2, 2)

6910-20-30 Seminar in Radiation Biology (2, 2, 2)