Colle9e of Liberal Arts

Robert G. Landen, Dean
Charles O. Jackson, Associate Dean
Garrett Briggs, Associate Dean for Research and Resource Development
Henry C. Jacobson, Associate Dean for Student Academic Affairs

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 that human beings have observed 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 reach beyond the boundaries of a college of the liberalarts one thus learns to reach beyond the boundaries of a college 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.

Programs of Study
Granting the broad, general goals of a liberal education, students come into the college 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 the 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 the honors-level program, the College Scholars Program permits the student maximum freedom to design a curriculum to meet 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, veterinary medicine, or medical technology). The student proceeds directly to specialized training in the 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 pursue careers in fashion, communication design, drawing, painting, fiber-fabrics, interior design, and sculpture are available in the art department office.

(3) BACHELOR OF MUSIC
The program leading to the Bachelor of Music degree prepares students for graduate study and for positions in which a professional degree is required. The degree is offered with a major in music which has concentrate in music education, composition, music history and literature, piano literature, and applied music minor—organ, singing, strings, woodwind, brass, and percussion instruments.
available to assist students with their program planning. In the final analysis, however, only the student can determine the program which will best satisfy 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. 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 120 credit hours.

(2) At least 60 credit hours in courses numbered 3000 or above.

(3) Appropriate work to satisfy the broad requirements of the Triad, counting no course for more than one Triad Area. (Basic Program, Individualized Program, and Pre-Professional Program only.)

(4) A major consisting of at least 36 credit hours in courses numbered 2000 or above as specified by the department or program, and counting no course in this major which has been used for Triad credit. (A course which satisfies a Triad requirement may, however, as prerequisite or corequisite to a major.) A minimum grade of C must be earned in every course counted as part of a major. Students transferring from other institutions must complete at least 12 credits at The University of Tennessee, Knoxville, in their major area.

Multiple Majors: After the general requirements described above have been satisfied, additional courses may be recorded on the transcript without regard to course overlap among majors or among these additional majors and Triad requirements. Students developing multiple majors must specifically declare this intent at the time they apply for graduation. Once a student has graduated, the student cannot combine additional majors becomes subject to University second-degree requirements.

Optional Minors: If desired, and at the time of application for graduation, single or multiple minors may be recorded on the academic record without regard to course overlap among minors and majors or among Triad and requirements. Minors require a minimum of 24 credit hours in courses numbered 2000 or above. They are available in most departments or programs. Additional majors are offered and are available in the following:

Biochemistry

Physical Sciences

Portuguese

Women's Studies

Minors may be developed in other colleges or schools of the University, but they must be approved by the department head in which the minor is proposed as well as Assistant Dean for Student Academic Affairs in Liberal Arts.

A business minor is available to students who successfully complete 18 hours of the following required courses:

Accounting 2110-20-30, Economics 2110-30-50, and Statistics 2110. Also, 15 hours of upper-level business electives must be taken at UT. Not more than six upper-level hours of accounting, economics, or statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper-level business courses taken in a particular concentration.

I. Basic Program

A. THE TRIAD:

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

It is important that every student of liberal arts become acquainted with these modes of expression and the social and economic exposure to cultures that are foreign, distant, and other. At the University of Tennessee, Knoxville, there is no essential for knowing what one is. A few students enter the college with firmly established educational objectives. It is essential for these students to develop their career plans carefully and creatively in order that maximum opportunity for self-directed decision making may be assured.

A basic decision, of course, is the degree to be sought. It is one of the three professional degrees (Bachelor of Fine Arts, Bachelor of Music, or Bachelor of Science in Chemistry), the student's program will be somewhat circumscribed. For more liberal degrees are necessarily more descriptive. In general, liberal arts degree students should choose to work for the Bachelor of Arts degree, the three elements which characterize career planning in a way which represent for that individual the most appropriate and effective way of attaining educational goals.

The importance of program planning cannot be overstressed. A few students enter the college with firmly established educational objectives. It is essential for these students to develop their career plans carefully and creatively in order that maximum opportunity for self-directed decision making may be assured.

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Prerequisite to this option is intermediate-level competence in the language, demonstrated by diagnostic (non-credit) or proficiency (credit) examination or by examination of any 2000-level sequence in that language.

(b) Intermediate-level competence in a foreign language demonstrated by diagnostic (non-credit) or proficiency examination or by examination of any 2000-level sequence (or an approved equivalent), in that language, and a minimum of two courses of literature in English (American) or in the Liberal Arts Advising Center. A minimum of two years of high school study will usually qualify a student to meet this requirement.

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

Note: In options (i) and (ii) those who take the diagnostic examination will not receive credit toward graduation but may be examined for the portion of the requirement satisfied by the diagnostic examination. Those who receive a passing grade on the diagnostic 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 language 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 that language by examination and those who have had less than four years of study may be able to satisfy a portion of the requirement by this means. Thus reducing the time required to satisfy this requirement. Full credit for students entering college who have had four years of high school language study undertaken successfully in the college is at the discretion of the department or by determination of the Committee on Writing Standards.

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

(b) History and Sociology

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

(i) An eight-hour sequence in a biological science; or
(ii) An eight-hour sequence in a physical science.

(b) Eight hours drawn from additional courses in the biological and/or physical sciences or from designated courses in the history, philosophy, or social impact of science; or 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

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

Requirements for the specified majors available to students in the Basic Program vary from a minimum of 36 to a maximum of 56 credit hours in courses numbered 2000 and above, including prerequisites and corequisites (i.e., supporting courses in other departments or areas). In either case, a student is expected to complete a definite design of courses and to find a niche in the world of intellectual endeavor. The major may be drawn from the offerings of a single department or it may bring together related concerns of two or more departments. In either case the student will be working toward a study which has a definite design and aims at some overall objective. Guidelines are published by each major department or interdepartmental committee to assist the student in ascertaining goals and to provide a framework within which to develop a particular program. Additional assistance in the form of personal counseling is available in the Liberal Arts Advising Center and from designated faculty advisers in each major department or area.

See Phi Beta Kappa requirements in mathematics, page 39.
through intensive work in two or three courses of study must have some clear Individualized Program. The proposed consideration to the Committee on the consultation with an adviser, and submit it for the Basic Program (i.e., a minimum of 36 credit hours). Concentration is the same as for the major in quantitative aspect of the area of concentration. Although the point at which the greatest degree of freedom to the student in developing a meaningful curriculum. Each program is worked out individually with a special adviser (tutor) who under ordinary circumstances continues to advise the student throughout the college career. Together they determine what kinds of course work and other learning experiences will best fulfill the student's objectives, while at the same time achieving the kind of liberal education the college believes is important for every student. In the final two years of the program students will be heavily involved in independent study or research. Further information and applications may be obtained from the Liberal Arts Advising Center.

Individualized Program

The Basic Program described above will meet the educational needs of most of the students enrolling in the college. 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 satisfy the broad requirements of the Triad, i.e., do those experiences in prerequisite knowledge. The point at which the greatest degree of individualization takes place, however, is in the area of concentration. Although the quantitative assessment 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 on the choice of courses which it is composed. The student may design a program, in consultation with an adviser, and submit it for consideration to the Committee on the Individualized Program. The Individualized Program courses of study must have some clear central purpose, usually demonstrated through intensive work in two or three departments; an undirected scattering of courses will not be approved. For further information contact the Liberal Arts Advising Center.

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 this distinguished honors curriculum. Selection is based on previous academic record, test scores, recommendations, a written essay, and a personal interview. Admission is provisional for two quarters; continuation depends upon maintenance of a satisfactory record (normally 3.25 or above) and evidence of ongoing motivation and interest. The College Scholars Program affords the highest degree of freedom to the student in developing a meaningful curriculum. Each program is worked out individually with a special adviser (tutor) who under ordinary circumstances continues to advise the student throughout the college career. Together they determine what kinds of course work and other learning experiences will best fulfill the student's objectives, while at the same time achieving the kind of liberal education the college believes is important for every student. In the final two years of the program students will be heavily involved in independent study or research. Further information and applications may be obtained from the Liberal Arts Advising Center.

Pre-Dental

Pre-Dental Hygiene

Pre-Medical Record Administration

Pre-Medical Technology

Pre-Nursing

Pre-Pharmacy

Pre-Physical Therapy

Pre-Veterinary Medicine

Other Health Professions

Pre-health professional programs are available for students who are preparing for a career in one of the health professions. The programs preparing students for professional programs are in medical technology, veterinary medicine, and pharmacy. In order to complete the specified courses required for admission to the respective colleges of the University of Tennessee, the student must complete 180 or more credit hours while enrolled in the college and the B.A. degree is granted upon satisfactory completion of the first year of study at UTCHS. In the four-year program the student must complete a total 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 UTCHS. Students entering a three- to four-year program must complete the last 45 hours of their college education in the University of Tennessee, Knoxville, before entering UTCHS. 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.

Pre-Dental Program

The college 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, and the B.A. degree is granted upon satisfactory completion of the first year of study at UTCHS. In the four-year program the student must complete a total 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 UTCHS. Students entering a three- to four-year program must complete the last 45 hours of their college education in the University of Tennessee, Knoxville, before entering UTCHS. 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.

College of Liberal Arts
Junior

<table>
<thead>
<tr>
<th>Course</th>
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<th>Course</th>
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<tr>
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<tr>
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Sophomore

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<tr>
<td>Biology 1020-30-30 or Zoology 1118-28-38</td>
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<td>3219-29-39</td>
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<tr>
<td>Chemistry 2112-21-31 &amp; 2319-20-39</td>
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<td>20</td>
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<tr>
<td>Triad I</td>
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<tr>
<td>Triad II</td>
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<tr>
<td>Elective</td>
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Junior

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<td>Total</td>
<td>48</td>
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Senior

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<tr>
<th>Course</th>
<th>Hours</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>Elective</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
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</tbody>
</table>

College of Liberal Arts
The University of Tennessee, Knoxville, as the dean of the College of Nursing, grants the degree of Bachelor of Science in Nursing from UTCHS, which is two years in length. The Bachelor of Science in Pharmacy degree is conferred by UTCHS at UTCHS. The Bachelor of Fine Arts degree is conferred by UTCHS, leading to the degree of Bachelor of Fine Arts from UTCHS. The Bachelor of Arts degree will be conferred upon satisfactory completion of the first year (three quarters) of the College of Liberal Arts, and the B.A. degree is granted upon completion of 180 hours of study at Memphis. In the four-year program outlined below, students interested in the pre-physical therapy program are encouraged to consult with a health professions adviser in the Health Professions Office, 218 Ayres Hall. Information may be obtained from the Health Professions Office, 218 Ayres Hall.

PRE-PHARMACY PROGRAM

The college offers three programs preparing students for the study of pharmacy at UTCHS. The Bachelor of Science in Pharmacy degree is conferred by UTCHS upon completion of three years of professional study at Memphis following any professional veterinary medicine curriculum. A departmental major is 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.

PRE-NURSING PROGRAM

The following program is designed for students who wish to pursue a Liberal Arts course while preparing for the study of Veterinary Medicine. Students in this program must complete at least 135 credit hours while enrolled in the College of Liberal Arts. A departmental major is guaranteed upon satisfactory completion of the first year of Liberal Arts study. In the fourth-year program the degree is granted upon completion of 160 or more credit hours while enrolled in the college. The program may be completed in four years in addition to the courses outlined below. The requirement for a major is waived for those taking their fourth year at UTCHS. Students in either the three- or four-year program must complete the last 45 hours of credit in residence at The University of Tennessee, Knoxville, before enrolling in the College of Veterinary Medicine.

Freshman

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English 1310 or 1311</td>
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<tr>
<td>English 1510-20</td>
<td>3</td>
</tr>
<tr>
<td>Math 1550-60 or 1840-50</td>
<td>8</td>
</tr>
<tr>
<td>Triad II (History &amp; Society)</td>
<td>4</td>
</tr>
<tr>
<td>*Elective</td>
<td>3</td>
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Sophomore

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Biology 2110-20</td>
<td>4</td>
</tr>
<tr>
<td>Zoology 1118-28-30</td>
<td>12</td>
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Junior

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<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Accounting 2110</td>
<td>3</td>
</tr>
<tr>
<td>Triad III (History &amp; Society)</td>
<td>4</td>
</tr>
<tr>
<td>*Electives</td>
<td>4</td>
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<tr>
<td>Completion of major program and B.A. requirements</td>
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</tr>
<tr>
<td>Completion of one year at the UT Center for the Health Sciences</td>
<td>45</td>
</tr>
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</table>

Pre-physical therapy program admission and successful completion of this program does not assure admission to the College of Veterinary Medicine.

Freshman

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</table>

Pre-Veterinary Program

The Bachelor of Fine Arts degree represents intensive study preparing the student for graduate programs and careers relating to art. A minimum of 189 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) ceramics, (2) communication design, (3) drawing, (4) fiber fabrics, (5) painting, (6) printmaking, (7) sculpture, and (8) watercolor. Inter-area concentrations are also possible. Transfer students are advised that a minimum of 20 hours in studio courses and eight upper-division hours in art history must be earned at The University of Tennessee, Knoxville.

Bachelor of Fine Arts

<table>
<thead>
<tr>
<th>Degree: Bachelor of Fine Arts</th>
<th>Major: Studio Art</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTIVES</td>
<td>Recommended sequence of courses from such areas as business, education, and</td>
</tr>
</tbody>
</table>

TOTAL: 301 hours

Science 2010 is highly recommended for students with limited or no practical animal experience.

OTHER HEALTH PROFESSIONS

Cytotechnology

Cytology

Radiologic Technology

Veterinary Medicine

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

Degree: Bachelor of Fine Arts

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Bachelor of Fine Arts

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TOTAL: 301 hours

Science 2010 is highly recommended for students with limited or no practical animal experience.
### College of Liberal Arts

**Recommended courses of study in ceramics, sciences are designed to help the student transcript.**

Foreign study in addition to formal classwork. **Education in studio art, which may include**

**COLLEGE ARTISTS PROGRAM**

- **Option I: Career preparation electives**
- **Option II: Additional art or non-art electives**
- **Electives**

**Bachelor of Music**

- **Department of Music** offers the degree of Bachelor of Music with concentrations in music theory, composition, music history and literature, and applied music (voice—piano—organ—chorus and church music—strings—percussion, including the recording and digital composition. A combination of courses from the various formal areas (listed B.A. above) are assigned to the Bachelor of Music student. Honors courses may be taken in any area of the studio instruction, in addition to the concentrations offered in the Bachelor of Music curriculum.**

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**COLLEGE ARTISTS PROGRAM**

- **A. Art Core**
- **B. Art Concentration (A or B)**
- **C. Studio**
- **D. Studio Honors Courses**

**COMPOSITION**

**Bachelor of Music**

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**MUSIC THEORY**

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**PIANO LITERATURE**

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**VOICE**

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**STRINGS**

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Freshman Hours Credit

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INSTRUMENTS Music 4400 ............................ 1

MULTIPLE WOODWIND Music 4860 ............................ 2

Electives.............................. 12

Junior

Music 2340 ............................ 3

Music 3112 ............................ 6

Music 3113-23 ............................ 6

Junior recital ............................ 0

Senior

Music Education 4430 ................. 3

Principal applied study ................ 12

Ensemble ............................. 3

Senior recital ............................ 0

Music electives........................ 5

Liberal arts electives (not in music) .... 9

Electives.............................. 8

Music 2000 ............................ 0

TOTAL 180 hours

WOODWIND, BRASS, AND PERCUSSION INSTRUMENTS

Freshman

English 1010 or 1011; 1020; 1031 or 1032 or 1033 ..................... 9

Music 1113-23-33 ....................... 3

Music 1340 ....................... 3

Principal applied study ................ 12

Junior recital ............................ 0

Senior

Music Education 4430 ................. 3

Principal applied study ................ 12

Ensemble ............................. 3

Senior recital ............................ 0

Music Education 4430 ................. 3

Principal applied study ................ 6

Collaborative study ................... 6

Junior recital ............................ 0

Senior

Music 1011-21-31 ....................... 9

Music 1113-23-33 ....................... 3

Music 1340 ....................... 3

Principal applied study ................ 9

Music 1400 ............................ 2

Liberal arts electives (not in music) .... 8

Electives.............................. 12

Music 2000 ............................ 0

TOTAL 180 hours

STUDIO MUSIC AND JAZZ

Freshman

English 1010 or 1011; 1020; 1031 or 1032 or 1033 ..................... 9

Music 1111-21-31 ....................... 9

Music 1211-23-33 ....................... 3

Music 1340 ....................... 3

Music 1400 ............................ 2

Music 1010-20-30 ....................... 3

Principal applied study ................ 6

Liberal arts electives (not in music) .... 8

Junior

Music Education 4430 ................. 3

Principal applied study ................ 6

Collaborative study ................... 6

Music 3112 ............................ 3

Principal applied study ................ 12

Junior recital ............................ 0

Senior

Music 4007-17-27 ....................... 3

Music 2340 ............................ 3

Music 3112 ............................ 6

Music 3113-23 ............................ 6

Music 4000 ............................ 6

Music 2000 ............................ 0

Ensemble ............................. 3

Senior recital ............................ 0

Liberal arts electives (not in music) .... 8

Electives.............................. 12

Music 2000 ............................ 0

TOTAL 180 hours

Liberal arts electives ............... 12

Electives.............................. 13

Music 2000 ............................ 0

TOTAL 180 hours

SUZUKI STRING PEDAGOGY

Freshman

English 1010 or 1011; 1020; 1031 or 1032 or 1033 ..................... 9

Music 1111-21-31 ....................... 9

Music 1113-23-33 ....................... 3

Music 1340 ....................... 3

Principal applied study ................ 12

Music 1010-20-30 ....................... 3

Principal applied study ................ 6

Liberal arts electives (not in music) .... 8

Senior

Music 1340 ....................... 3

Music 1400 ............................ 2

Music 1010-20-30 ....................... 3

Principal applied study ................ 6

Liberal arts electives (not in music) .... 8

Electives.............................. 12

Music 2000 ............................ 0

TOTAL 180 hours

College of Liberal Arts

189

Bachelor of Science in Chemistry

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

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

COOPERATIVE PROGRAM IN CHEMISTRY

A cooperative program is available to students in the B.S. in Chemistry curriculum. After the freshman year the student alternates a period in school with a quarter in a job in a chemical industry. The program normally requires 4 years and involves a total of seven work quarters and twelve school quarters. Students are required to have at least a 2.5 average to enter and remain in the program. Some opportunity exists for students to double major.
students to enter the program later than the end of the freshman year. Students interested should make application to the head of the department at least one quarter in advance of the beginning of the first work period. Further information will be supplied on request.

**CURRICULUM REQUIREMENTS**

Freshman

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Chemistry 1110-12</td>
<td>3</td>
</tr>
<tr>
<td>Math 1404-05-06</td>
<td>12</td>
</tr>
<tr>
<td>Math 1405-06-07</td>
<td>12</td>
</tr>
<tr>
<td>Languages, Literature, Art Triad or 1 Language, Literature, Art Triad</td>
<td>8</td>
</tr>
<tr>
<td>History and Society Trial</td>
<td>8</td>
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Sophomore

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Chemistry 2211-21</td>
<td>9</td>
</tr>
<tr>
<td>Chemistry 2212-23-24</td>
<td>9</td>
</tr>
<tr>
<td>Math 2544-05-06</td>
<td>12</td>
</tr>
<tr>
<td>Physics 2120, 2310-20</td>
<td>11</td>
</tr>
<tr>
<td>Language, Literature, Art Triad or 1 Language, Option I or II</td>
<td>8 (R)</td>
</tr>
<tr>
<td>History and Society Trial</td>
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Junior

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Chemistry 2410-49</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 3410-20</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 4210-20, 4219-29</td>
<td>8</td>
</tr>
<tr>
<td>Computer Science 3350</td>
<td>3</td>
</tr>
<tr>
<td>1 Language, Literature, Art Trial or 1 Language, Option I or II</td>
<td>8 (R)</td>
</tr>
<tr>
<td>History and Society Trial</td>
<td>8</td>
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</table>

Senior

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 4110</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 4112</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 4212-30</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 4242</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 4310</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL: 188 (186) hours</td>
<td></td>
</tr>
</tbody>
</table>

Students who plan to study law should consult the statement regarding admission to the College of 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 degrees. For further information, see page 51 or consult the Graduate School of Library and Information Science.

**Planning**

Students who wish to consider a career in city and regional planning or a related field will find a brief description of the program of the Graduate School of Planning on page 51. Students are accepted into planning from a broad variety of undergraduate backgrounds. Further information on the planning profession, admission requirements, and the program of study may be obtained from the Graduate School of Planning.

**Public Administration**

Students majoring in political science who wish to prepare for an administrative career in the public service may select courses to fit that objective. The concentration appearing below is suggested for students with public service career interests. The degree to be awarded is a Bachelor of Arts with a major in political science, augmented by supportive work in related disciplines.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Political Science 2160-20, 2900</td>
<td>12</td>
</tr>
<tr>
<td>(choose 8 hours)</td>
<td></td>
</tr>
</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 2110-30-30</td>
<td>9</td>
</tr>
</tbody>
</table>
| Junior
| Political Science 3650-65 | 8 |
| Political Science 3845-45 | 8 |
| Economics 2310-20-20-20 | 8 |
| Accounting 2110-30-30 | 9 |
| Senior
| Political Science 4110-20 | 7 |
| Political Science 4410 | 4 |
| Economics 3410 | 3 |
| Accounting 3510 | 3 |
| Finance 4300-30 | 6 |

In addition, sufficient electives in political science must be taken to meet the number of hours required for a major in political science. Further information may be obtained in the Department of Political Science.

**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 30 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 a speech and hearing exam as determined by tests administered by the Speech and Hearing Center; (3) a personality inventory; (4) satisfactory student conduct record; (5) a successful field conduct experience.

One quarter during the senior year must be reserved for student teaching (Education C&L 4710-20). Application for student teaching must be filed not later than January 1 of the year preceding the academic year in which the student teaching will be undertaken. Those planning to student teach during the 1982-83 academic year must apply by January 1, 1982.

For additional information contact Teacher Certification Office, Room 212 Claxton Education Building.

**Theology**

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

**General Information**

**Admission to the College**

For information regarding admission to the College of Liberal Arts, see page 18.

**Course Load**

The average course load in the college for any quarter is 14-16 credit hours. The University defines full-time undergraduate student status as a course load of not less than 12 hours and not more than 18 hours per quarter. A student less than 17, exclusive of elective work in ensemble music and physical education. Exceptions to this rule will require approval by the Associate Dean for Student Academic Affairs (218 Ayres Hall).
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 levels.

Satisfactory/No Credit Courses

A grade of 2.0 or better in courses offered only on a Satisfactory/No Credit (S/NC) basis and students may elect to take these 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 a 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 toward requirements or major or 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. If the student not elected to regular grading to regular grading or from regular grading to S/NC, it is to be elected prior to 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 student planning to seek admission to the University of Tennessee, Knoxville, may count all of these hours toward graduation but may not take these hours toward graduation for approved off-campus study.
5. A transfer student with S/N Credit equivalent scale and No Credit is defined as less than C. As C or better work on the traditional grading scale and No Credit is defined as less than C. The following regulations apply:

A student who desires to take a course S/NC should indicate that intention at the time of registration. If the student not elected to regular grading to regular grading or from regular grading to S/NC, it is to be elected prior to 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.)

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1. (S/NC) courses, except those offered only on this basis, may not count toward requirements or major or 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. If the student not elected to regular grading to regular grading or from regular grading to S/NC, it is to be elected prior to 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 with S/N Credit equivalent scale and No Credit is defined as less than C. As C or better work on the traditional grading scale and No Credit is defined as less than C. The following regulations apply:

A student who desires to take a course S/NC should indicate that intention at the time of registration. If the student not elected to regular grading to regular grading or from regular grading to S/NC, it is to be elected prior to 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.)

Academic advising for students of the College of Liberal Arts

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, special projects, internships, etc. Credit per quarter will vary from 1-16 hours. Up to 24 hours of credit earned in this way may be applied toward a degree in the college, 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 the 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 departments concerned prior to embarking upon their work. 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, 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. One avenue is through group programs arranged and supervised by departments of the college on a full-quarter or summer term basis. A second avenue through group programs or conducted abroad by other academic institutions. The student's work in foreign study may be taken for credit provided that the student's approval may enroll for credit. Assistance in identification of and enrollment 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 individual programs offered during the foreign study number 4101. The nature of this work as well as credit for it should be negotiated by students prior to departure with the appropriate academic 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 members of the college faculty, each of whom has been trained for this purpose. Students of the first quarter of residence are assigned to the Advising Center where they may receive advice and direction from the personal advisor 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, and by that time they may be transferred for advising to a faculty member in the major department.

Student Academic Affairs Office

Academic advising for students is also provided through the Student Academic Affairs Office, 216 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.

Office of African and Afro-American Studies

The Office of African and Afro-American Studies, 802 Volunteer Blvd., Suite 416, cooperates with the various departments and colleges of the University with respect to the development of curricular changes and innovations which incorporate the black experience into academic and extracurricular programs of the 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 African and Afro-American Studies Program at the University.

Bureau of Public Administration

The University has established in the college 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 Administration 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 family members 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 Theatre

The Department of Speech and Theatre offers a full schedule of dramatic productions in three different theatres. The Clarence Brown Theatre has outstanding facilities for full-scale staging and for film productions, and, in a separate building, the Laboratory Theatre. Carousel Theatre is designed for areas...
staging and can be converted for open-air performances in the summer.

Instructional Facilities
The college carries out its varied teaching and research activities in more than two dozen principal buildings in two areas of the campus, as well as in a number of converted residences which provide office, studio, or clinical space. The older of the two clusters of buildings is on "The Hill," and includes Ayres Hall (psychology and mathematics), Austin Hall (biological sciences), Physics (physics and astronomy), Geology-Geography (geology and geography), and Davney and Buehler (chemistry). Most of "The Hill" is a recently built-up group of buildings for the humanities, social sciences, and fine arts. McClung Tower and the Humanities-Social Sciences classroom building (obstetrics, English, foreign languages, history, human services, philosophy, political science, religious studies, sociology, and speech and theater), the Music Building (music), and the Hearing and Speech Center (speech and clinical space) are currently housed on "The Hill." In addition to the academic buildings, the Administration Building, the Student Academic Affairs Building, the McClung Museum, and the Clarence Brown and Anselmi Theatres, as well as the Undergraduate Library, Anthropology is housed in South Stadium, and art utilizes several small buildings for its studios.

College Offices
The College Administrative Office is in 226 Ayres Hall. The Student Academic Affairs Office is in 218 Ayres Hall. The Liberal Arts Conference Center is in 220 Ayres Hall.

Departments of Instruction
American Studies
See Cultural Studies.

Anthropology (122)
Professor: W. M. Bass (Hopewell, Ph. D. Pennsylvania State; D. S. Suttie, Ph. D. Michigan; R. L. Jacy, Ph. D. Kansas; F. W. Henke, Ph. D. Wisconsin)
Associate Professors: J. A. Brown, Ph. D. Indiana; M. H. Legon, Ph. D. Pennsylvania State, F. H. Smith, Ph. D. Michigan
Assistant Professors: S. Howell, Ph. D. Kentucky; G. F. Schroeder, Ph. D. Washington State
Research Assistant Professor: J. Chapman, Ph. D. North Carolina

Visiting:
Kenneth Donzelot (Divisional Professor, UNESCO/UNGRADUATE PROGRAM)

A major in anthropology shall consist of 42 hours, of which 12 hours are to be in the introductory, 2000-level courses. Of the remaining 30 hours, 3333, 4440 and six hours of 3500 level or above courses are required in each of these subfields: (1) Cultural; (2) Physical; and (3) Archaeology.

(1) Cultural: 3410, 3440, 3450, 3500, 3540, 3700, 4040, 4111, 4700, 4710, 4720, 4730, 4740, 4420, 4430, 4440, 4550, 4560, 4650, 4740.

(2) Physical: 3070, 3900, 3920, 3990, 4930, 4960, 4970.

(3) Archaeology: 3610, 3620, 3630, 3640, 3660, 3670, 4420, 4450, 4460, 4560.

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 prehistoric background, fossil primates, fossil man; and living races of mankind.

2520 Prehistoric Archaeology (4) Survey of prehistoric cultures with specific emphasis on method and theory of archaeological processes, the Middle Eastern and Africa; 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, ideology, art, and language.

2540 Introduction of Linguistic Anthropology (4) Basic linguistic concepts. Aspects of language studied by anthropologists and sociolinguists.

2510 Prehistoric Humans and their Lifeways (4) A survey of the development of humans and their culture from earliest evidence of humans until the end of the Paleolithic. Emphasis on the interaction between cultural and biological development and adaption. Prereq: 2510, 2520 recommended.

2670 Genetics and Society (3) (Same as Botany 3670)

3333 Visiting Lecture Program (20) Developed around lecture by visiting scholars in physical anthropology and cultural anthropology, or other courses in anthropology as a rotating basis. May be repeated. Maximum credit 9 hrs.

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 non-literate peoples. Practice of religion in their social and cultural systems. 2530 recommended.

3450 Introduction to Complex Culture (3) Review of cross-cultural comparative urban and village societies. Studies of communities and methodologies used in cross-cultural research. 2530 recommended.

3480 Evolution of Religion (4) (Same as Religious Studies 3480)

3610 Peoples and Cultures of Mainland Asia (3) Ethnographic survey indigenous cultures of mainland Asia. Cultural diversity and human ecology in real perspective. 2530 recommended.

3500 Peoples and Cultures of Africa (3) Ethnographic survey cultural diversity and human ecology in real perspective. 2530 recommended.

3540 North American Indians (3) Ethnographic survey of aboriginal peoples and culture of North America. 2520 recommended. (Same as Religious Studies 3440 and 3530)

3700 Forms of Folklore (4) Introduction to an anthropological study of folklore. Place of folklore in the social and cultural systems. 2530 recommended.

3710 European Folk Culture (3) Traditional aspects of European folk culture. 2530 recommended.

3710 American Folk Culture (3) Introduction to anthropological study of folklore. Prereq: 3700 or consent of instructor.

3800 Language and Culture (3) Relationship between linguistic categories and patterns of culture. 2530 recommended.

3900 Human Osteology (3) Introduction to techniques in identification of human skeletal material in archaeology. 2530 recommended.

3910 Introduction to Museology (3) (Same as Art 2910)

3950 Human Identification (3) (Same as Anthropology 2520 or consent of instructor.)

4101 Foreign Study (1-16) See page 183.

4190 Off-Campus Study (1-16) See page 183.

4110 Independent Study (1-16) See page 183.

4110 Education to Cultural Perspectives (3) (Same as Edu. C & 4110)

4111 Non-Western Education: Anthropological Approaches (3) Analysis of traditional educational practices among non-Western peoples and problems encountered from application of western models of education among those peoples. Prerequisites: 2510 or consent of instructor.

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

4900 Cultural Behavior of Blacks in New World: examination of Pro-African-Americans via anthropological theories and methodology.

5080 Peoples and Cultures of Mesoamerica (3)Ethno-historical interpretation of patterns of culture, post-conquest changes in Indian cultures. Emphasis on problems of small rural communities using modern village studies as source material. Recommended: 2530.

5100 Archaeology of United States and Canada (3) Development of Paleolithic, Mesolithic, and Neolithic periods. 2530 recommended.

5369 European Prehistory II (3) Cultural developments during Neolithic through Iron Age. 2530 recommended. 3620 and 3920 should be taken in sequence.

5400 Ancient Civilization of Mesoamerica (3) Introduction to cultural phenomena of Mesoamerican cultures. Prereq: 3700 or consent of instructor. 2530 recommended.

5580 Prehistory of Tennessee (3) History of archaeological research in Tennessee and survey of prehistoric American Indian cultures identified through research.

5730 Principles of Anthropology (3) Research strategies in anthropological research. Interpretation and explanation. Prereq: 2530 or consent of instructor.

5750 Forms of Folklore (4) Introduction to anthropological study of folklore.

5760 Cultural Folk Culture (3) Traditional aspects of the life experienced in technology, beliefs, art, and folklore, under changing historical and socio-political conditions.

5800 Language and Culture (3) Relationship between linguistic categories and patterns of culture. 2530 recommended.

5950 Human Osteology (4) Intensive examination of the human skeleton. Prereq: 2510 or consent of instructor. 3 hrs. and 1 lab.

5960 Principles of Physical Anthropology (3) Survey of materials and methods in physical anthropology. 2530 recommended.

5970 The Biology of Race of Man (3) Processes of racial differentiation; cieus of significant differences among existing stocks. Influence of biology and culture in race formation; analysis of studies concerning biocultural groups, race mixture, constitution, character, growth, nutrition. 2530 recommended.

6410 Foreign Study (1-16) See page 183.

6410 Off-Campus Study (1-16) See page 183.

6410 Independent Study (1-16) See page 183.

6410 Education to Cultural Perspectives (3) (Same as Edu. C & 4110)
4560 Asians in the Americas since 1800: An anthropological perspective (3) Character, factors and motivations in major migration to North, Central and South America. Assimilation pattern and unities across major topics. Major focus on United States.

4590 Peoples of Japan (3) Analysis of cultural diversity and unity of peoples of Japan. Prerequisites: 2530 or consent of instructor. Recommended: Readings in East Asian culture.

4600 Method and Theory in American Archaeology (2) Historical development of New World archaeology with emphasis on theory and field techniques. Prerequisite: 2520 or consent of instructor.

6970 Human Paleontology Laboratory (1) Detailed examination of casts and other materials pertinent to study of human paleontology. Prerequisite or corequisite: 4770.

GRADUATE

The general requirements for the master's and doctoral degrees are given in the Graduate Catalog.

5000 Thesis

6100 Seminar in Cultural Anthropology (3, 3, 3)

5101 Foral Study (1-12)

5102 Off-Campus Study (1-12)

5140 Seminar in Zooarchaeology (2-3, 3)

5240 Laboratory Studies of the Vertebrale Skeleton (4)

5308 Laboratory Study of the Moluscs (4)

5910 Seminar in Archaeology (3-5)

5930 Specialist Topics in Anthropology (4, 4)

5920 Advanced Physical Anthropology (3)

5940 Skeletal Biology of Early Human Population (3)

5950 Comparative Primate Anatomy (4)

6990 Paleobiology (4)

6990 Dermatoglyphics (3)

6990 Medical Anthropology: Laboratory (3) Survey of cultural history of human health, disease, and medical practice in non-Western cultures and folk medicine systems which co-exist with Western, technical medicine. Corequisite or prerequisite: 2510 or consent of instructor. May be repeated. Maximum credit 6 hrs.

4390 Fieldwork in Anthropology: Emphasis on archaeological aspects of cultural history, disease, and in-depth study of social and folk medicine systems which co-exist with Western, technical medicine. Required of anthropology majors in senior year. Prerequisite: Senior standing. Others by consent of instructor and a reading knowledge of Spanish.

4610 Africa Prehistory (3) Survey of cultural history of Africa, from earliest evidence of human activity to the European contact. Prerequisite: 2520 or consent of instructor.

4640 Zoogeography (3) Zoological studies of vertebrate classes; emphasis on aboriginal man's utilization of native animals in his subsistence and culture. Identification, analysis, and interpretation of archaically derived molluscs and vertebrates remains.

4850 Archaeology of Southeastern United States (3) Intensive study of prehistoric American Indian. Special emphasis on Tennessee prehistory. Prerequisite: 2610 or consent of instructor.

4930 Physical Growth and Constitution (3) Comprehensive survey of methodology in physical anthropology, cultural and regional anthropology. Emphasis on physical anthropology majors in senior year. Prerequisite: Senior standing.

4960 Primate Paleontology (3) Survey of fossil record from Australopithecus to appearance of anatomically modern man. Emphasis on function and structural homologies, and their role in understanding primate behavior. Prerequisite: 2510 or consent of instructor.

4970 Physical Growth and Constitution (3) Comprehensive survey of methodology in physical anthropology, cultural and regional anthropology. Emphasis on physical anthropology majors in senior year. Prerequisite: Senior standing.

4980 Neanderthal Man and Human Evolution (3) Study of fossil remains. Prerequisite: 2510. Recommended: Zoology 4380.

5450 Comparative Social Organization (3)

5460 Quantitative Methods in Anthropology (3)

5460 The Healer in Cross-Cultural Perspective (3)

5500 Theory in Archaeology (3)

5510 Problems in World Archaeology (3-5)

5630 The Maya (3)

5640 Archaeological Resource Management (3)

5680 Seminar in Prehistoric Lithic Technology (3)

5700 Seminar on Aboriginal Lithic Resources (3)

5710 Theory in Folk Culture Studies (3)

5900 Dental Anthropology (3)

5910 Measurement of Man (3)

5920 Advanced Physical Anthropology (3)

5930 The Human Skeleton of Forensic Medicine (2)

5940 Skeletal Biogeography of Early Human Population (3)

5945 Comparative Primate Anatomy (4)

5990 Paleobiology (4)

5990 Dermatoglyphics (3)

5990 Medical Anthropology: Laboratory (3) Survey of upcoming trends and issues in medical anthropology. Emphasis on investigation of non-human primates; emphasis on investigation of non-human primates. Prerequisite: 2510 or consent of instructor.

6970 Human Paleontology Laboratory (4) Survey of fossil record from Australopithecus to appearance of anatomically modern man, with emphasis on functional and structural homologies. Prerequisite: 2510. Recommended: Zoology 4380.

4970 Human Paleontology (4) Survey of the human fossil record from Australopithecus to appearance of anatomically modern man, with emphasis on functional and structural homologies. Prerequisite: 2510. Recommended: Zoology 4380.

4795 Human Paleontology Laboratory (1) Detailed examination of casts and other materials pertinent to study of human paleontology. Prerequisite or corequisite: 4770.

GRADUATE

The general requirements for the master's and doctoral degrees are given in the Graduate Catalog.

5000 Thesis

6100 Seminar in Cultural Anthropology (3, 3, 3)

5101 Foral Study (1-12)

5102 Off-Campus Study (1-12)

5140 Seminar in Zooarchaeology (2-3, 3)

5240 Laboratory Studies of the Vertebrale Skeleton (4)

5308 Laboratory Study of the Moluscs (4)

5910 Seminar in Archaeology (3-5)

5930 Specialist Topics in Anthropology (4, 4)

5920 Advanced Physical Anthropology (3)

5940 Skeletal Biology of Early Human Population (3)

5950 Comparative Primate Anatomy (4)

5990 Paleobiology (4)

5990 Dermatoglyphics (3)

5990 Medical Anthropology: Laboratory (3) Survey of upcoming trends and issues in medical anthropology. Emphasis on investigation of non-human primates; emphasis on investigation of non-human primates. Prerequisite: 2510 or consent of instructor.

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4970 Human Paleontology (4) Survey of the human fossil record from Australopithecus to appearance of anatomically modern man, with emphasis on functional and structural homologies. Prerequisite: 2510. Recommended: Zoology 4380.

4795 Human Paleontology Laboratory (1) Detailed examination of casts and other materials pertinent to study of human paleontology. Prerequisite or corequisite: 4770.

GRADUATE

The general requirements for the master's and doctoral degrees are given in the Graduate Catalog.

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6100 Seminar in Cultural Anthropology (3, 3, 3)

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5102 Off-Campus Study (1-12)

5140 Seminar in Zooarchaeology (2-3, 3)

5240 Laboratory Studies of the Vertebrale Skeleton (4)

5308 Laboratory Study of the Moluscs (4)

5910 Seminar in Archaeology (3-5)

5930 Specialist Topics in Anthropology (4, 4)

5920 Advanced Physical Anthropology (3)

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5950 Comparative Primate Anatomy (4)

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4970 Human Paleontology (4) Survey of the human fossil record from Australopithecus to appearance of anatomically modern man, with emphasis on functional and structural homologies. Prerequisite: 2510. Recommended: Zoology 4380.
Tennessee; F.C.Moffat, Ph.D., Chicago; Associate Professors: J.S. Falsetti, M.S., Ohio State; P.R. Livingston, S.C. Saupe, M.F.A., Wisconsin; D.R. Shriver, A.L. Neff, Ph.D., Pennsylvania; Assistant Professors: North Carolina (Greensboro); M.F.A. Claremont; S.A. Yates, M.F.A., North Carolina (Greensboro).

Each summer the craft workshops in Gatlinburg, Tennessee, are made possible through cooperative efforts between the Department of Art and the Pi Beta Phi Arrowmont. The Fraternity provides the funds, the facilities, and the management for Arrowmont. The University of Tennessee, Knoxville, College of Liberal Arts, appoints the instructors and provides for the administration of the craft workshops. The craftspeople are selected by nationally known craftspersons, and the workshops are expanded to include nationally known craftspersons from throughout the United States. Also cooperation with national and local craft organizations has so stimulated the work of craftspersons throughout the area that their work has gained national recognition.

For information regarding the Bachelor of Fine Arts degree, see page 170.

1000 The Visual Artist (4) Lecture course with guest instructors initiated by convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 24 hrs.


2125 Introduction to Crafts (4) Introduction to the practice of art. Emphasis on the philosophy and meaning in visual arts. Lecture-discussion. Emphasis for non-majors.

1510 World Art I (4) Art from ancient, classic, and medieval periods emphasizing prehistoric, pre-Columbian, Christian, and Islamic art. Primarily for art, architecture, education majors. Prereq: Determined by department.

1825 World Art II (4) Study through slides and lecture of works of art from Leonardo da Vinci and Michelangelo to Matisse and Picasso. May be repeated. Maximum credit 24 hrs.

2004 Special Topics (1-4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 24 hrs.


2016 Special Topics in Drawing (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 24 hrs.

2115 Life Drawing (4) Further development of drawing and observational skills with emphasis on structure and dynamics of human figure and of the figure in environment. Prereq: 2105. May be repeated. Maximum credit 8 hrs.


2119 Intermediate Three-Dimensional Design (4) Prereq: 2117. May be repeated. Maximum credit 8 hrs.

2205 Introduction to Painting (4) Capabilities of oil and acrylic. Prereq: 1115, 1125, 1135 for art majors; none for non-art majors.

2206 Special Topics in Painting (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hrs.

2215 Painting I (4) Techniques of expression in oil and acrylic. May be repeated. Maximum credit 8 hrs. Prereq: 2205 for art majors, none for non-art majors.


2225 Special Topics in Fabric and Fibre (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hrs.

2226 Fabric Design II: Weaving (4) Application of weaving to weaving and loom techniques in fiber design. Prereq: 2205. May be repeated. Maximum credit 8 hrs.

2235 Watercolor II: Painting (4) Application of watercolor techniques in fiber design. Prereq: 2205. May be repeated. Maximum credit 8 hrs.

2415 Introduction to Watercolor (4) Capabilities of transparent watercolors. Prereq: 1115, 1125, 1135 for art majors, none for non-art majors.

2315 Watercolor I (4) Techniques that make watercolor a major medium of expression. Prereq: 1115, 1125, 1135 for art majors; none for non-art majors.

2430 Introduction to Sculpture (4) Study in clay modeling and basic casting techniques. Prereq: 1115, 1125, 1135 for far majors, none for non-art majors.

2440 Special Topics in Sculpture (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hrs.

2445 Sculpture I (4) Development of skills and exposure to particular area of sculpture agreed upon by student and instructor. Prereq: Determined by department. May be repeated. Maximum credit 16 hrs.

2450 Sculpture: Life Modeling (4) Techniques concerned with the human figure as subject. Emphasis on modeling process as both observational and material-handling technique. Prereq: Permission of instructor. Prereq: 2445.

2451 Sculpture II (4) Development of skills and exposure to particular area of sculpture agreed upon by student and instructor. Prereq: Determined by department. May be repeated. Maximum credit 16 hrs.

2454 Introduction to Wood Sculpture (4) Exploration of basic materials, methods, techniques of designing and making functional and decorative wood sculpture. Prereq: 1115, 1125, 1135. May be included. 2117-2215 for art majors, none for non-art majors.

2460 Wood Sculpture: Studio Projects (4) Application
1319 Design Resources (4) Sources, development, and application of design as it relates to visual arts. Design procedures, tools, and materials utilized in developing design resources. Prereq.: Completion of studio course.

1321 Painting III (4) Individual expression with varnish, mat board, and trim. May be repeated. Maximum credit: 12 hrs. Prereq.: 8 hrs in credit 1319 for an major; consent of instructor for non-art majors. May be repeated. Maximum credit 8 hrs.

1320 Fabric Design III: Stitchery and Applique (4) Advanced techniques in the use of natural and synthetic fibers. Dying yems chemically. Prereq. 2940: 8 hrs in credit 1319 for art majors; consent of instructor for non-art majors.


1327 Fabric Design III: Individual Class Projects (4) Prereq.: 3260 or consent of instructor. May be repeated. Maximum credit 8 hrs.

1330 Sculpture III (4) Prereq.: 3325 or consent of instructor. May be repeated. Maximum credit 8 hrs.

1331 Watercolor III (4) Indv. expression with watercolor and in other materials. Prereq.: 2315 for art majors; consent of instructor for non-art majors.

1340 Metal Design I: Jewelry (4) Basic techniques of jewelry design and construction. Prereq.: 2315 for art majors; consent of instructor for non-art majors.

1365 Intaglio II (4) Metal intaglio printing in traditional and contemporary techniques of etching, drypoint, mezzotint, aquatint, and photoetching. May be repeated. Maximum credit 8 hrs.

1366 Special Topics in Ceramics (2-4) A limited course offered at convenience of department. Prereq.: Determined by department. May be repeated. Maximum credit 8 hrs.

1367 Screen Printing I (4) Creative exploration of a variety of screen printing techniques. May be repeated. Maximum credit 8 hrs.

1368 Metal Design II: Jewelry (4) Additional jewelry and metalworking techniques including casting, soldering, riveting, and finishing. Prereq.: 2355. May be repeated. Maximum credit 8 hrs.

1369 Metal Design II: Enameling (4) Exploring of various enameling techniques and in combination with other materials. Prereq.: 2355. May be repeated. Maximum credit 8 hrs.

1370 Black Art (4) Black art in America. 19th century to contemporary trends.

1375 Film Design (4) Introductory theory and practice of screenwriting and script development through use of motion picture camera. May not receive credit for both 2185 and 2300.

1380 Introduction to Ceramics (4) Exploration of ceramic making and constructing pottery forms using pinch, coil, slab, and wheel techniques. Prereq.: 15-20.5 credit hrs for art majors; none for non-art majors.

1385 Special Topics in Ceramics (4) Student or instructor initiated course offered at convenience of department. Prereq.: Determined by department. May be repeated. Maximum credit 16 hrs.

1390 Ceramics III: Handbuilding Techniques (4) Prereq.: 2315 or consent of instructor. May be repeated. Maximum credit 16 hrs.

1390 Ceramics IV: Wheel Techniques (4) Prereq.: 2315 or consent of instructor. May be repeated. Maximum credit 8 hrs.


1398 Drawing III (4) Development of personal drawing techniques, one of the foundations through which problem solving is developed. May be repeated. Maximum credit 12 hrs. Prereq.: 2153.

1399 Design Resources (4) Sources, development, and application of design as it relates to visual arts. Design procedures, tools, and materials utilized in developing design resources. Prereq.: Completion of studio course.

1399 Painting III (4) Individual expression with varnish, mat board, and trim. May be repeated. Maximum credit: 12 hrs. Prereq.: 8 hrs in credit 1319 for a major; consent of instructor for non-art majors. May be repeated. Maximum credit 8 hrs.

1399 Fabric Design III: Stitchery and Applique (4) Advanced techniques in the use of natural and synthetic fibers. Dying yarns chemically. Prereq. 2940: 8 hrs in credit 1319 for art majors; consent of instructor for non-art majors.


1399 Fabric Design III: Individual Class Projects (4) Prereq.: 3260 or consent of instructor. May be repeated. Maximum credit 8 hrs.

1399 Sculpture III (4) Individual projects through discussion with instructor, designed to widen previous experience. May be repeated. Maximum credit 12 hrs.

1399 Sculpture: Advanced Life Modeling (4) Advanced modeling techniques in clay and wax, working from figure. Prereq.: 2419 or consent of instructor.

1399 Graphic Design (4) Advanced theory and techniques of visual problem solving for printed materials. Prereq.: 2419 or consent of instructor.

1399 Typography (4) Theories and techniques of typography and typographic processes and basic production techniques. May be repeated. Maximum credit 12 hrs.

1399 Airbrush (4) Emphasis on airbrush as a reflective medium. MAY be repeated. Maximum credit 12 hrs.

1399 Intaglio III (4) Color intaglio printing from zinc or cardboard plates. Extra techniques—mezzotint, handpoker, etc. May be repeated. Maximum credit 8 hrs.

1399 Lithography III (4) Color lithography from stone or plates. Extra techniques—stone engraving, acid etching, drypoint. MAY be repeated. Maximum credit 12 hrs.

1399 Screen Printing II (4) Screen printing on textiles; making of handmade negatives on transparent film. May be repeated. Maximum credit 12 hrs.

1399 Metal Design III: Individual Class Projects (4) Prereq.: 2355 or consent of instructor. MAY be repeated. Maximum credit 12 hrs.

1399 Medieval Art (4) Byzantine and western art of middle Ages; manuscript illumination; mosaic, Romanesque pilgrimage church, Gothic cathedral. MAY be repeated. Maximum credit 12 hrs.

1399 Northern European Painting: 1350-1800 (4) From courtly art of late Middle Ages to Northern Renaissance. Jan van Eyck, Roger van der Weyden, Bosch, and Durer; early printmakers.

1399 Survey of Contemporary Art (4) History of modern art through the 20th century. MAY be repeated. Maximum credit 12 hrs.


1399 History of 20th Century Painting in Europe and America (4) Fauvism, Die Brucke, Cézanne, Cubism, Der Blaue Reiter, Fauvism, Dada, and Surrealism. MAY be repeated. Maximum credit 12 hrs.

1399 Archeology of Indian Asia (4) History of Indian art with consideration of art from Southwest Asia. MAY be repeated. Maximum credit 12 hrs.

1399 Chinese Art (4) MAY be repeated. Maximum credit 12 hrs.

1399 Introduction to Museology (3) Concepts, practices, and history of development of museums. Prereq.: History and Anthropology 3811. MAY be repeated. Maximum credit 8 hrs.

1399 Film Design (4) Theory and practice of film making. Prereq.: 2300.

1399 Cinematography (4) Familiarization with photographic processes and basic production techniques in the production of motion pictures. MAY be repeated. Maximum credit 12 hrs.

1399 History of Contemporary Art (4) MAY be repeated. Maximum credit 12 hrs.


1399 Crafts in America (4) Movement: factors that contribute to growth and development. Edutu- toric, social, economic, and aesthetic values of crafts. MAY be repeated. Maximum credit 12 hrs.

1399 History of North American Art (4) Survey of landscape in painting, sculpture, architecture, and design from prehistory to 1950. MAY be repeated. Maximum credit 12 hrs.

1399 Nineteenth Century American Painting (4) From the Hudson River Group, Pre-Raphaelite Brotherhood, Manet, Courbet, Impressionism, Eakins, Homer, Seurat through Abstract Expressionism. MAY be repeated. Maximum credit 12 hrs. Prereq.: Completion of departmental requirements. College of Liberal Arts
4010 Foreign Study (1-18) See page 183.
4012 Off-Campus Study (1-18) See page 183.
4013 Independent Study (1-18) See page 183.
4015 Special Topics in Drawing (2) Student in or instructor initiated course offered at convenience of department. Prereq: Determined by instructor. May be repeated. Maximum credit 6 hrs.
4105 Advanced Design Studio (2) Studio experience planned to explore strengths, structural variety, and conceptual methods. Prereq: 3115 for art majors, consent of instructor for non-art majors. May be repeated. Maximum credit 12 hrs.
4119 Advanced Design Studio (4) Studio experience planned to explore strengths, structural variety, and conceptual methods. Prereq: Determined by instructor. May be repeated. Maximum credit 12 hrs.
4125 Printmaking IV (4) Individualized course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hrs.
4136 Special Topics in Metal Design (2) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 6 hrs.
4150 Craft Media (6) Possibilities and limitations of variety of craft media; designing and evaluating craft problems using interpretive materials and tools. For non-art majors only.
4206 Special Topics in Painting (2) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 6 hrs.
4215 Painting IV (4) Individual concepts on personal expression with varied media on canvas. May be repeated. Maximum credit 12 hrs. Prereq: 12 hrs in 3251 for art majors, consent of instructor for non-art majors.
4264 Special Topics in Fabric and Fibers (2) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 6 hrs.
4325 Fiber Design IV: Advanced Projects (2) Prereq: 3325. May be repeated. Maximum credit 12 hrs.
4336 Watercolor IV (4) Individual concepts in personal expression with varied water-based media on paper. May be repeated. Maximum credit 12 hrs. Prereq: 12 hrs in 3335 for art majors, consent of instructor for non-art majors.
4406 Special Topics in Sculpture (2) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 6 hrs.
4415 Sculpture IV (4) Intermediate to advanced. May be repeated. Maximum credit 12 hrs.
4428 Wood Design: Advanced Practical Construction (4) Application of lamination, bending, and shaping techniques in designing and construction of contemporary furniture. Prereq: 2400 or consent of instructor for non-art majors. May be repeated. Maximum credit 12 hrs.
4437 Wood Design: Advanced Practical Construction (4) Application of lamination, bending, and shaping techniques in designing and construction of contemporary furniture. Prereq: 2400 or consent of instructor for non-art majors. May be repeated. Maximum credit 12 hrs.
4450 Special Topics in Communication Design (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hrs.
4485 Portfolio and Exhibition Techniques (4) Applications of lamination, bending, and shaping techniques in designing and construction of contemporary furniture. Prereq: 2400 or consent of instructor for non-art majors. May be repeated. Maximum credit 6 hrs.
4515 Typography II (4) Intermediate to advanced. May be repeated. Maximum credit 12 hrs.
4545 Visual Communications Seminar (2) Political, social, economic, and ethical problems of contemporary designer. Sessions with outside guests, speakers, and field trips are employed. Prereq: 4415.
4608 Special Topics in Printmaking (6) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 18 hrs.
4615 Intaglio IV (4) Photographic, collage techniques; combine printing with other print media. May be repeated. Maximum credit 12 hrs.
4618 Lithography IV (4) Extensive use of aluminum plates, color combine printing, photograph techniques. May be repeated. Maximum credit 12 hrs.
4617 Screen Printing (4) Traditional hand out and photographic screen prints, single color printing, single color printing. May be repeated. Maximum credit 12 hrs.
4550 Special Topics in Metal Design (4) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hrs.
4555 Reading and Research in Art History (2) Content varies with student. Prereq: 4515. May be repeated. Maximum credit 6 hrs.
4556 Special Topics in Metal Design (2) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 6 hrs.
4566 Special Topics in Metal Design (4) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hrs.
4565 Studies in Art History (2) Concentration in selected areas. Prereq: 12 hrs of art history and consent of instructor. May be repeated. Maximum credit 6 hrs.
4605 Studies in Art History (2) Concentration in selected areas. Prereq: 12 hrs of art history and consent of instructor. May be repeated. Maximum credit 6 hrs.
4541 Kiln Construction (4) Prereq.: Senior or consent of instructor. May be repeated. Maximum credit 12 hrs.
4542 Glaze Calculation (2) Prereq: Senior or graduate standing and consent of instructor. May be repeated. Maximum credit 6 hrs.
4543 Ceramic Arts III (4) Problems include all areas of ceramic technology and art history. Prereq: 3535. May be repeated. Maximum credit 12 hrs.
4544 Ceramic Arts IV: Advanced Projects (4) Prereq: 3535. May be repeated. Maximum credit 12 hrs.
4581 History of Design (2) Principles of design history. Prereq: Senior or graduate standing and consent of instructor. Prereq: 3535. May be repeated. Maximum credit 6 hrs.
4591 Communication Design (4) Preparation of a professional portfolio. Prereq: 4541.
4592 Visual Communications Seminar (2) Political, social, economic, and ethical problems of contemporary designer. Sessions with outside guests, speakers, and field trips are employed. Prereq: 4415.
4608 Special Topics in Printmaking (6) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 18 hrs.
4615 Intaglio IV (4) Photographic, collage techniques; combine printing with other print media. May be repeated. Maximum credit 12 hrs.
4618 Lithography IV (4) Extensive use of aluminum plates, color combine printing, photograph techniques. May be repeated. Maximum credit 12 hrs.
4617 Screen Printing (4) Traditional hand out and photographic screen prints, single color printing, single color printing. May be repeated. Maximum credit 12 hrs.
4550 Special Topics in Metal Design (4) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hrs.
4555 Reading and Research in Art History (2) Content varies with student. Prereq: 4515. May be repeated. Maximum credit 6 hrs.
4556 Special Topics in Metal Design (4) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hrs.
4565 Studies in Art History (2) Concentration in selected areas. Prereq: 12 hrs of art history and consent of instructor. May be repeated. Maximum credit 6 hrs.
4566 Special Topics in Metal Design (4) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hrs.
4565 Studies in Art History (2) Concentration in selected areas. Prereq: 12 hrs of art history and consent of instructor. May be repeated. Maximum credit 6 hrs.
4541 Kiln Construction (4) Prereq.: Senior or consent of instructor. May be repeated. Maximum credit 12 hrs.
4542 Glaze Calculation (2) Prereq: Senior or graduate standing and consent of instructor. May be repeated. Maximum credit 6 hrs.
4543 Ceramic Arts III (4) Problems include all areas of ceramic technology and art history. Prereq: 3535. May be repeated. Maximum credit 12 hrs.
4544 Ceramic Arts IV: Advanced Projects (4) Prereq: 3535. May be repeated. Maximum credit 12 hrs.
Additional recommended courses for audiology majors are Audiology and Speech Pathology 4580, 4610, 4790, Psychology 2500, 2520, 2540, and 3150. A major in audiology consists of Audiology and Speech Pathology 3010, 3040, 3050, 3065, 4320, 4330, 4340, 4350, 4360, 4370, 4400, 4450, 4720, plus not less than 10 nor more than 15 credit hours from the following:

- 3065, 4320, 4400, 4470, and 4490.

Additional recommended courses for speech pathology majors are: Audiology and Speech Pathology 4520, 4450, 4460, 4470, 4410, 4350, 4310, 4410, and Child and Family Studies 4810.

1261 English Pronunciation for Foreign Students (Same as English 1261.)

3010 Basic Acoustics in Speech and Hearing (3) Fundamental aspects of acoustics in speech and hearing; including physics of sound. Prerequisite: Consent of instructor.

3020 Introduction to Speech Pathology and Audiology (3) Nature, etiology, and incidence of speech, hearing, and language disorders.

3050 Speech Science I: Phonetics (4) Basic phonetics including articulation and phonology of spoken English sounds with analysis of their formation; acoustic characteristics of speech and speech perception in social situations. Consent of instructor.

3065 Speech Science II: Phonetics (4) Acoustics and physiology of speech production mechanism. Prerequisite: 3050.

3090 Speech and Language Development (4) Speech and language development in the normal child including development of distinctive features and implications of this process on diagnosis of speech and language development. Psychology 3560 or Educational Psychology 2430 recommended.

3100 Articulation Disorders (4) Etiology, diagnosis, and treatment of articulation disorders. Prerequisite: 3040, 3050, or consent of instructor. (Same as Special Education 3710).

3101 Audiology I (3) Fundamental aspects of audiology and physiology. Introduction to disorders of hearing and their remediation. (Same as Speech Pathology 3710).

4000 Appraisal of Speech and Language Disorders (4) Reviews specific problems of child development with speech and language problems including diagnostic and treatment processes. Prerequisites: 3010, 3040, 3050, or consent of instructor. (Same as Special Education 3710).

4003 Free Association (4) Oral and written free association. Prerequisite: Consent of instructor.

4010 Foreign Study (1-16) See page 183.

4012 Off-Campus Study (1-16) See page 183.

4013 Independent Study (1-16) See page 183.

4030 Speech Development of the Hearing Impaired (3) Prerequisite: Consent of instructor. (Same as Special Education 4410).

4100 Language Development of the Hearing Impaired I (3) Prerequisite: Consent of instructor. (Same as Special Education 4410).

4110 Language Development of the Hearing Impaired II (3) Prerequisite: Consent of instructor. (Same as Special Education 4410).

4120 Language Development of the Deaf (3) Prerequisite: Consent of instructor. (Same as Special Education 4410).

4130 Stuttering (3) Nature and treatment. Review of research and current information for various types of stuttering. Prerequisite: Consent of instructor. (Same as Special Education 4410.)
4760 Introduction to Hearing Conservation (4)
4720 Auditory Rehabilitation: Speedreading and Auditory Training (4)
4550 Advanced Clinical Practice in Audiology (1-4)
5025 Praxtium in Hearing Aid Orientation and Communication Counseling (1-4)
5035 Praxtium in Verbo-Tonal Training (1-4)
5050 Praxtium in Aural Rehabilitation (1-4)
5060 Anatomy and Physiology of Hearing (3)
5070 Anatomy and Physiology of Hearing (5)
5071 Physiological Acoustics and Electrophysiology (3)
5110 Comparative Anatomy of Peripheral Auditory Structures (3)
5116 Introduction to Research in Speech and Hearing (3)
5117 Instrumentation in Audiology and Speech Pathology (3)
5119 Laboratory in Instrumentation in Audiology and Speech Pathology (3)
5120 Biochemistry of Mitochondria and Selected Mitochondrial Organelles (3)
5320 Hearing Aid Evaluation (3)
5380 Cerebral Palsy (3)
5381 Adult Dysarthria (3)
5382 Cleft Palate (3)
5383 Speech Pathology (3)
5440 Hearing Aid Evaluation (3)
5450 Sound Measurement and Audimeter Calibration (3)
5480 Advanced Audiology (3)
5470 Impedance Measurement in Audiology (3)
5490 Praxtium in Hearing Conservation (1-4)
5500 Seminar in Audiology (3)
5505 Special Auditory Tests (3)
5510 Special Problems in Audiology (1-4)
5520 Seminar in Speech Pathology (3)
5540 Seminar in Language Pathology (3)
5550 Special Problems in Speech Pathology (1-3)
5555 Independent Study in Speech Pathology (1-9)
5550 Independent Study in Audiology (1-9)
5560 Practicum: Language Pathology in Children (3)
5581 Seminar in Language Differences (3)
5730 Hearing Disorders (3)
5740 Pediatirc Audiology (3)
5750 Educational Audiology (3)
5790 Seminar in Psycholinguistic Concepts in Speech Pathology (3)
5930 The Verbo-Tonal System (3)
5980 Doctoral Research and Dissertations
6010 Experimental Phonetics (3)
5019 Experimental Phonetics Laboratory (2)
5030 Psycholinguistics (3)
5035 Psycholinguistics Laboratory (2)
5050 Applied Anatomy and Physiology of Speech Mechanism (2)
6060 Laboratory in Applied Anatomy and Physiology of Speech Mechanism (2)
6070 Experimental Techniques in Cochlear Physiology and Neurophysiology (3)
6080 Seminar in Speech Science (3)
6090 Seminar in Hearing Science (3)
6110 Unusual Design in Speech and Hearing (3)
6117 Theories of Hearing (3)
6118 Advanced Instrumentation in Speech and Hearing (3)
6150 Advanced Seminar in Audiology and Speech Pathology (3)
6120 Advanced Seminar in Speech and Language (3)
6140 Directed Research (1-4)
6150 Directed Study in Speech Pathology (1-9)
6160 Directed Study in Speech Science (1-3)
6260 Directed Study in Hearing Science (1-3)
Bacteriology

See Microbiology.

Biochemistry (188)
Profs.: J. E. Churchman, Ph.D. (Sheffield); K. J. Monty (Acting Head), Ph.D. (Rochester); T. E. Can, Ph.D. (Michigan); V. W. Wicks, Ph.D. (Berkeley).

Instructors: A. J. Aronson, Ph.D. (Chicago); S. W. Hawkinson, Ph.D. (Chicago); J. Roy, Ph.D. (Illinois); L. Brattsten, Ph.D. (Illinois); R. E. Bryant, Ph.D. (Michigan State).

Professors: W. S. Hancock, Ph.D. (Chicago); L. Huang, Ph.D. (Michigan State).

Assistant Professors: L. Branden, Ph.D. (Illinois); L. E. Bryant, Ph.D. (Illinois); R. F. Reiner, Ph.D. (California) (Specialist).

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 2100-49, 3211-23, 3219-29, and Biochemistry 4110-90 and 4119. Additional credits from Biochemistry 4210-90-20 and (or 4500 and 5010) are desirable.


4110-20 Cellular and Comparative Biochemistry (4, 4) Electrolyte behavior; chemistry and structure of proteins; enzyme behavior and biological function; calorimetry and energy capture; theoretical and practical dietetics, nutrition, and enzyme function. Prereq: [to be determined by the course coordinator]. Course offered in fall, spring, and summer. Credit: credit is assumed to be granted for 4110 or 4120.

4119 Cellular and Comparative Biochemistry Laboratory (3) Lab work associated with laboratory exercises and lecture material. Prereq: 4110 or 4120. Coreq: 4110 or 4120.

4210 Introduction to Physical Biochemistry (3, 3) Introduction to thermodynamics, phase stability, and phase change, chemical potential, osmotic pressure; and the Debye-Huckel model; electromotive force; membrane permeability. 4210—Elements of statistical mechanics, diffusion, colloid theory; chemical kinetics; and transition state theory; application to enzymatic processes; some bio-polymer solutions. Prereq: Mathmatics 1841-20-40, Chemistry 2112-21-31 and 3219-29-39, and an introductory course in biology.

4230 Introduction to Physical Biochemistry (3) Physical characterization of macromolecules, partitioned lipids, adsorption and fluorescence, transport properties, transport, transport, electrolyte. In the University of California...
RNA, and proteinsynthesis,monera, protista,and function,energy metabolism, celldivision,DNA, 12102030 General Biology (4,4,4) 1210-Biology prerequisites ;consult the catalog description require organic chemistry or other biology courses (Biology 1210-20-30 or Botany 1110-20 or 1118-28 and Chemistry 1110-20-30). Corequisites are Math 1841-51; a year sequence in physics (except 1410-20-30); and Chemistry 2140-49. B. Concentration in Organizational and Systems Biology. Consults of Biology 3110, 3120, 3130, Chemistry 3211-21, 3219-29-39, and 18 hours of upper-division courses from Biochemistry 4110-20. 4118-50; 10 hours of upper-division courses from Biochemistry 4119, 5010; Botany, any 3000- or 4000-level courses, including not more than one from 3090, 3090. Microbiology, any 3000- or 4000-level courses, Zoology, any 3000-4000-level courses. Zoology, any 3000-4000-level courses except 3010-30 and 3090. In meeting upper-division minimum, not more than 12 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited. Prerequisites to this concentration are Biology 1210-30-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28 and Chemistry 1110-20-30. Corequisites are Math 1841-51; a year sequence in physics (except 1410-20-30) or Chemistry 410-20-30. Note: Students majoring in biology are advised to exercise care in fulfilling the science and mathematics Tract requirements. Math 1841-51 (or in some cases 1550-60) and Chemistry 1110-20-30 or equivalent (20 hours altogether) must be completed by biology majors. Students majoring in biology are advised to consider coursework as a physics science minor (page 221). Minor Consults of Biology 3110-20 and 12 hours of upper-division courses chosen from the list below. Biochemistry 4110-20, 4118-50; Botany, any 3000- or 4000-level courses; Microbiology, any 3000- or 4000-level courses except 3010-30-30. In meeting the upper-division minimum, 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 and Zoology 1118-28) and Chemistry 1110-20-30. Minor: 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) 1210-Biology of plants and animal kingdom; structure and function of plant tissues, plant growth and reproduction, survey of the animal kingdom, reproduction and development in animal kingdom, internal and external organs and systems, general biology. May be taken in any sequence. Students who receive credit for 1210-20-30 may not also receive credit for Botany 1110-20, 1118-28 or Zoology 1118-28. 3110 General Genetics (6) Classical and modern principles of heredity. Prereq: 1210-20-30 or Botany 1110-20-30 or equivalent of 2 years of high school biology and satisfactory ACT scores; Chemistry 1110-30-30, 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. 3360 General Ecology (4) Relations between organisms and their environment, including human exploitation of biological resource. May be taken in any sequence or combination with 3110 and 3130. Black Studies See Cultural Studies. Botany (198) Professors: R. W. Holton (Head), Ph.D. Michigan; N. Phillips, Ph.D. Duke; R. Delius, Ph.D. Ohio State; A. M. Evans, Ph.D. Michigan; W. R. Branden (Onslow Environmber for Academic Affairs); Ph.D. Van Stultz, W. L. Jones, Ph.D. Texas; J. F. McConchie (Director of Plant Science Program), Ph. D. Hanna, Ph.D. Ohio State; R. H. Peterson, Ph.D. Ohio State; Ph.D. Ohio State; Ph.D. Ohio State; L. V. Walsh, Ph.D. Texas. Associate Professors: C. C. Arndt (Head), Ph.D. Colorado; J. D. Caponetti, Ph.D. Arizona; G. R. Davis, Ph.D. Virginia; C. H. Hughes, Ph.D. Ohio State; O. J. Swerd, Ph.D. North Carolina State. Assistant Professors: H. L. Hert, Ph.D. Massachusetts; L. C. Mullen, Ph. D. North Carolina State, E. E. Schilling, Ph.D. Ind. Dept. K. A. Smith, Ph.D. Tennessee; W. O. Smith, Ph.D. Duke. Instructor: J. E. Herli, Ph.D. Ohio State. UNDERGRADUATE Major: Consists of Biology 3110-20-30, 23 upper-division hours of botany, including 3210 and at least 12 hours of upper-division biology. May be taken in any sequence or combination with 3110 and 3120, plus 4 hours of upper-division courses from a related biological science track, including microscopy, biochemistry, entomology and plant pathology, forestry, ornamental horticulture and landscape design, and plant and soil science. Not more than 3 hours from 3050, 3070, 3090 allowed for major credit. Prerequisites to this major are Botany 1110-20-40 or 1118-28 or Biology 1210-20-30 or Chemistry 1110-20-30, Corequisites are Math 1841-51 or Math 1550-60; Physics 1210-20-30 or Chemistry 1210-2-31, 2910-28-30, or Geology 1510-20 plus 4 additional hours in geology: Minor: Consists of Biology 3110-20-30 and 18 upper-division hours of botany. Not more than 3 hours from 3050, 3070, 3090 are allowed for minor credit. Prerequisites to this **Students with two years of high school biology and satisfactory ACT scores may, with the consent of the department, omit the freshman year sequence and enter Biology 1110-20-30 directly by now course listings under biology.
Cultures, evolution of cultivated plants, and the role of plants in the origin and development of human societies. Not for botany graduate credit.

3050 Socio-Economic Impact of Plants (3) Significance of plants in the environment and their impact on human activity. Not for botany graduate credit.

3090 Biology and Human Affairs (3) Basic biological principles involved in the determination and preservation of an environment in which humans and their cultures may survive. Not for botany graduate credit. (Same as Zoology 390).

3106 Introductory Plant Pathology (4) (Same as Environ. Science and Pathology 376).

3105 Introductory Plant Physiology (4) Organismal physiology of plants: water, relations, mineral nutrition, photosynthesis, productivity, metabolic processes, and the effects of light, temperature, and other environmental factors. Lecture and lab. Not for botany graduate credit. Prereq: One year of general chemistry and one year of biological science.

3300 Biological Oceanography (3) Distribution of aquatic life in the sea and the factors that influence its distribution. Prereq: Botany 1110-20 or an equivalent. 1210-20-30 or Botany 1110-20 or Geology 2710.

4006 Tutorial in Botany (1-2-3 Individual, independent study under guidance of selected staff. By arrangement only. May be repeated with consent of department. Maximum credit 6 hrs.)

4017 Field Mycology (3) Field experience on identification of fungi. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hrs of botany. Recommended: Botany 3010-20.

4021 Field Botany (3) Field experience on identification of flowering plants. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hrs of botany. Recommended: Botany 3010-20.

4022 Field Bryology (3) Field experience on identification of mosses and liverworts. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hrs of botany. Recommended: Botany 3010-20.

4030 Mechanisms of Plant Speciation (3) Processes of speciation, establishment of population barriers, and the implications for human society. Not for botany graduate credit.


4050 Synentherology (3) Field experience on identification of hyper-productive regions (estuaries, upwellings). Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hrs of botany: Recommended: Botany 3010-20.

4075 Botanical Photography (3) Emphasis on photography of natural history subjects and achievement of satisfactory plant photography. Lectures and practical sessions. Film and processing costs paid by student. Student encouraged to use own equipment. Limited shared equipment. (2, 2, 2) Experience in active research projects under guidance of selected staff. By arrangement only. May be repeated with consent of instructor. Graduates only. Maximum credit 3 hrs.

5000 Thesis 5002 Non-Thesis Graduation Completion (3-10) 5003-04 Non-Thesis Research (3, 3) 5011 Mycology (4) 5012 Morphology and Evolution of Phycyomyces (4) 5021 Bryology (4) 5022 Lichennon (4) 5023 Lichenology and Plant Taxonomy (4) 5041 Physiology (4) 5050 Phytoplankton Ecology (4) 5060 Physiological Ecology (4) 5080 Phytophagy (4) 5090 Morphology and Evolution of Basidiomycetes (4) 5130 Astrobiology (4) 5150 Advanced Morphology of Flowering Plants (4) 5166 Aquatic Vascular Plants (4) 5225 Advanced Plant Pathology II (5) 5226 Advanced Plant Pathology III (5) 5290 Quaternary Problems (4) 5291-30 Special Problems in Botany (1-6, 1-6) 5340 Plant Geography (4) 5380 Analysis of Plant Communities (4) 5390 Marine Ecology (3) 5410-30 Seminar in Teaching of College Botany (3, 3, 3) 5440 Seminar in Botany (1) 5450-30 Systems Ecology (3, 3, 3) 5470 Plant Cytology (5) 5810 Cyanobacteria (4) 5820-21-22-23-24 Methods and Instrumentation in Laboratory Investigations (1, 1, 1, 1, 1) 5830 Field Methods in Plant Ecology (4) 5850-51-52-53-54 Methods and Instrumentation in Field Investigations (1, 1, 1, 1, 1) 5870 Experimental Plant Genetics (4) 5910-20 Developmental Plant Morphology (3, 1) 6000 Doctoral Research and Dissertation 6019 Advanced Topics in Morphology of Vascular Plants (4-5) 6060 Advanced Topics in Cryptogamic Botany (4-5) 6210 Photobiology (3) 6216 Advanced Topics in Cytology and Cell Biology (2-3) 6230 Ecosystems of the World (3) 6240 Advanced Topics in Genetics (3-4) 6260 Seminar in History of Botany (2) 6280 Advanced Topics in Plant Physiology (2-4) 6283 Advanced Topics in Ecology (2-4) 6290 Advanced Topics in Systematic Botany (2-4)
student to take in designing a program for a B.A. degree with a major in chemistry. Concentration A is designed to prepare the student for a career as a professional chemist in either industry or research, or for entrance into graduate school in such fields as chemistry, biochemistry, geochmistry, etc. This program has similarities to that leading to the degree of Bachelor of Science in Chemistry, (page 179), but with more opportunity for selection of electives outside the department and outside of science. Unlike the Bachelor of Science degree, the B.A. degree using Concentration A is not accepted by the Committee on Professional Training of the American Chemical Society.

The prerequisites consist of Chemistry 1110-20-30, Mathematics 1420-50, 2440-50, Physics 2310, 2310-20. The concentration consists of Chemistry 2140, 2149, 3211-21-31, 3219-29-39, 3410-20-30, 3429 plus at least 10 hours of additional upper-division work in chemistry, including at least one of the following courses: 4110, 4210, 4220, 4410, 4510. (Up to six hours of biology 4000 level and above or Geology 4510 may be applied to the 10-hour requirement but at least one three-semester chemistry course must be included.) While not required, Math 2650 is highly recommended as an elective for majors in this concentration.

Concentration B is designed for students who have career objectives in fields other than chemistry, but in fields where chemistry has direct applications, such as medicine, dentistry, pharmacy, law, business, and ecology. This concentration, supplemented by appropriate courses from other disciplines, 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 prerequisites consist of Chemistry 1110-20-30, Mathematics 1420-50, 2440-50, and any one of the following natural sciences: (a) Physics 2210-30 or 2510, 2310-20; (b) Geology 1100-20-30; (c) Biology 1110-20-30; (d) Biology 3110-30 and Microbiology 3000, 3006; (e) Mathematics 1110-20-30. The concentration consists of Chemistry 2140, 2149, 3211-21-31, 3219-29-39, 3410-20-30 plus 12 hours of additional upper-division work in chemistry, including at least one of the following courses: 4110, 4210, 4220, 4410, 4510. (Up to six hours of biology 4000 level and above or Geology 4510 may be applied to the 10-hour requirement but at least one three-semester chemistry course must be included.) A minor in chemistry shall consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following: Chemistry 2210-20-30, 2111-29-39 (12 hours) or Chemistry 3410-20-30 (9 hours) or Chemistry 4100-20-30 (6 hours) or Chemistry 4110-20-30 (6 hours). Placement in Freshman Sequences: The sequence which follows is recommended for a major in a year of general chemistry and is a prerequisite for some upper-division courses. The 1500 and 1600 series have more limited applications. The 1500 series emphasizes organic and biochemistry and may be used as a prerequisite only for 2230 and 3810. The 1600 series is for non-science majors and does not provide an adequate background for any additional courses in chemistry.

It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds a need to complete the 1110 series after having completed 1510 may substitute 1510 for 1110 with approval of the chemistry department and may then take 1120 followed by 1130. However, no single quarter of the 1500 or 1600 sequences may be substituted for 1120 or 1130. Credit may be received for only one of the courses 1110, 1510, or 1610. 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. Class size may be limited to promote faculty-student interaction. Selection is based on ACT scores, high school chemistry grade, and if necessary, performance on a placement examination to be given during the first class meeting. A student receiving a passing 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 will not be eligible for 1130 and must take 1130 to get the full 12 hours of 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 first-year chemistry. If the examination is passed, the student is eligible for the second-semester chemistry course. If a satisfactory grade is made on the examination, the student may take the exam the following quarter. Only one of the courses 1110, 1510, or 1610 is required but at least one three-hour chemistry course must be included.)

Placement in Freshman Sequences: The sequence which follows is recommended for a major in a year of general chemistry and is a prerequisite for some upper-division courses. The 1500 and 1600 series have more limited applications. The 1500 series emphasizes organic and biochemistry and may be used as a prerequisite only for 2230 and 3810. The 1600 series is for non-science majors and does not provide an adequate background for any additional courses in chemistry. It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds a need to complete the 1110 series after having completed 1510 may substitute 1510 for 1110 with approval of the chemistry department and may then take 1120 followed by 1130. However, no single quarter of the 1500 or 1600 sequences may be substituted for 1120 or 1130. Credit may be received for only one of the courses 1110, 1510, or 1610. 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. Class size may be limited to promote faculty-student interaction. Selection is based on ACT scores, high school chemistry grade, and if necessary, performance on a placement examination to be given during the first class meeting. A student receiving a passing 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 will not be eligible for 1130 and must take 1130 to get the full 12 hours of 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 first-year chemistry. If the examination is passed, the student is eligible for the second-semester chemistry course. If a satisfactory grade is made on the examination, the student may take the exam the following quarter. Only one of the courses 1110, 1510, or 1610 is required but at least one three-hour chemistry course must be included.)
including quantitative analysis.

**Prerequisites:**
- Two years of chemistry with appropriate deficiencies which must be resolved.
- Any of these prerequisites may be admitted with the consent of the department.

**Sequence:**
- 3410-20-30-39, sequence. 4920 is coreq or prereq for 4929.
- 4929 Biophysical Chemistry Laboratory (1) Experiments on topics discussed in 4928. Not open to students taking 4929 Biophysical Chemistry Laboratory (1) or equivalent.

- 3410-20-30-39, sequence. 4910 is coreq or prereq for 4929 Biophysical Chemistry Laboratory (1) or equivalent.

- 4929 Biophysical Chemistry Laboratory (1) Experiments on topics discussed in 4928. Not open to students taking 4929 Biophysical Chemistry Laboratory (1) or equivalent.

- 3410-20-30-39, sequence. 4910 is coreq or prereq for 4929 Biophysical Chemistry Laboratory (1) or equivalent.

- 4929 Biophysical Chemistry Laboratory (1) Experiments on topics discussed in 4928. Not open to students taking 4929 Biophysical Chemistry Laboratory (1) or equivalent.

- 3410-20-30-39, sequence. 4910 is coreq or prereq for 4929 Biophysical Chemistry Laboratory (1) or equivalent.

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- 3410-20-30-39, sequence. 4910 is coreq or prereq for 4929 Biophysical Chemistry Laboratory (1) or equivalent.

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- 4929 Biophysical Chemistry Laboratory (1) Experiments on topics discussed in 4928. Not open to students taking 4929 Biophysical Chemistry Laboratory (1) or equivalent.

- 3410-20-30-39, sequence. 4910 is coreq or prereq for 4929 Biophysical Chemistry Laboratory (1) or equivalent.
such credits. 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 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.

1110-10-30 Beginning Latin (3, 3, 3) Must be taken in sequence.

2510-21 Intermediate Latin (4, 4, 4) — Readings from the age of Cicero, 257-54 B.C. Open to those who have had at least two years of high school Latin, or equivalent.

2510-21 Intermediate Latin (4, 4, 4) — Readings from the age of Cicero, 257-54 B.C. Open to those who have had at least two years of high school Latin, or equivalent.

3140 Oratorio (3) — Prereq: 3 or 4 years of high school Latin or 2510.

3150 Plautus and Terence (3) — Prereq: 3 or 4 years of high school Latin or 2510.

3210 Calculus (2) — Prereq: 3 or 4 years of high school Latin or 2510.

3440 Greek (2) — Prereq: 3 or 4 years of high school Latin or 2510.

3640 Plio and Martian (3)

3640 Eligac: Poesia (3)

4120 Horace, Satires and Epistles (3)

4140 Cicero and Techniques of Latin Prose Composition (6) Recommended for Latin majors and minors especially those intending to teach or pursue graduate work. Works of Cicero studied as models for modern prose and work of Horace as models for modern verse.

4310 Selected Readings from Latin Literature (3)

4320-21 Selected Readings from Latin Literature (3) — Must be taken in sequence.

4340 Horace, Odes (3)

4350 Tacitus (3)

4360 Lucretius (3)

4370 Readings in Medieval Latin (3) — Must be taken in sequence.

GRADUATE

5140 The Latin Epic. Lucretius, Virgil, Lucret. (3, 3)

5110-50 Roman Comedy. Plautus, Tarventac (3, 3, 3)

GENERAL COURSES

2710 Scientific and General Vocabulary from Greek Language (266) Studio study of vocabulary and words in classical ancient languages and modern languages derived from Greek. Designed to build general vocabulary with special emphasis on scientific and technical terminology.

2720 Scientific and General Vocabulary from Latin (2) Study of word roots and words in English taken from Latin. Designed to build general vocabulary with special emphasis on scientific and technical terminology.

2810 Greek Life (4) - Manners and customs, social and economic aspects of classical civilization: religion, politics, laws, finance, commerce.

2830 Roman Life (3) — Prereq: 1510 or 1610 or 3150 or consent of department.

3010 Computers and Society (3) — Survey of development of Greek or Roman civilization. Illustrated lectures.

3010 Greek Drama in English Translation (3) — Survey of development of Greek or Roman civilization. Illustrated lectures.

3140 Oratorio (3) — Prereq: 3 or 4 years of high school Latin or 2510.

3150 Plautus and Terence (3) — Prereq: 3 or 4 years of high school Latin or 2510.

3210 Calculus (2) — Prereq: 3 or 4 years of high school Latin or 2510.

3440 Greek (2) — Prereq: 3 or 4 years of high school Latin or 2510.

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4310 Selected Readings from Latin Literature (3)

4320-21 Selected Readings from Latin Literature (3) — Must be taken in sequence.

4340 Horace, Odes (3)

4350 Tacitus (3)

4360 Lucretius (3)

4370 Readings in Medieval Latin (3) — Must be taken in sequence.

GRADUATE

5140 The Latin Epic. Lucretius, Virgil, Lucret. (3, 3)

5110-50 Roman Comedy. Plautus, Tarventac (3, 3, 3)

GENERAL COURSES

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3010 Greek Drama in English Translation (3) — Survey of development of Greek or Roman civilization. Illustrated lectures.

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3150 Plautus and Terence (3) — Prereq: 3 or 4 years of high school Latin or 2510.

3210 Calculus (2) — Prereq: 3 or 4 years of high school Latin or 2510.

3440 Greek (2) — Prereq: 3 or 4 years of high school Latin or 2510.

3640 Plio and Martian (3)

3640 Eligac: Poesia (3)

4120 Horace, Satires and Epistles (3)

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4350 Tacitus (3)

4360 Lucretius (3)

4370 Readings in Medieval Latin (3) — Must be taken in sequence.

GRADUATE

5140 The Latin Epic. Lucretius, Virgil, Lucret. (3, 3)

5110-50 Roman Comedy. Plautus, Tarventac (3, 3, 3)

GENERAL COURSES

2710 Scientific and General Vocabulary from Greek Language (266) Studio study of vocabulary and words in classical ancient languages and modern languages derived from Greek. Designed to build general vocabulary with special emphasis on scientific and technical terminology.

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3140 Oratorio (3) — Prereq: 3 or 4 years of high school Latin or 2510.

3150 Plautus and Terence (3) — Prereq: 3 or 4 years of high school Latin or 2510.

3210 Calculus (2) — Prereq: 3 or 4 years of high school Latin or 2510.

3440 Greek (2) — Prereq: 3 or 4 years of high school Latin or 2510.
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. Ancient Mediterranean Civilizations, Asian studies, Black studies, comparative literature, Latin American studies, linguistics, Medieval studies, Russian and East European studies, and urban studies. Minors are provided in Asian studies, Black studies, comparative literature, Latin American studies, linguistics, Medieval studies, urban studies, and women's studies.

American Studies (999)

History 210-20 (or equivalent honors courses) are prerequisite to a concentration in American studies which consists of 36 quarter hours: English 3010-33, American Studies 3010 and 4010, and 21 hours of upper-division electives dealing with the American experience. Nine hours of the elective group must be from one of the following disciplines: anthropology, economics, political science, or sociology. A list of acceptable elective courses is published annually by the American Studies Committee.

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

3010 Introduction to American Culture (3) Explores the dynamics and nature of contemporary American culture.

3230-33-34 Forms of Popular Literature and Culture (3, 3) (Same as English 3230-34).

4010 Topica In American Studies (Content Credit) Content may be repeated once.

Asian Studies (145)

The Asian studies concentration consists of 36 quarter hours: Asian Studies 2510-20 plus 28 additional credits from Asian studies or approved departmental courses. The latter should constitute a coherent program, involving a minimum of 12 semester hours (or 18 quarter hours) from each of the following three areas: (a) art, Asian culture, literature, and music; (b) economics, geography, history, and political science; (c) anthropology, philosophy, religious studies, and sociology. Students who prefer to use Asian Studies 2510-20 and the approved department courses must, with permission of the program chairperson, substitute 8 additional upper-division hours in acceptable courses for that required sequence in the concentration.

The Asian studies minor consists of 24 quarter hours: Asian Studies 2510-20 plus 16 additional credits from Asian studies or approved departmental courses. The latter should include a minimum of one course (3 or 4 hours) from each of the following areas: (a) art, Asian culture, literature, and music; (b) economics, geography, history, and political science; (c) anthropology, philosophy, religious studies, and sociology. Students who prefer to use Asian Studies 2510-20 for Triad or elective credit may, with permission of program chairperson, substitute 8 additional upper-division hours in acceptable courses for that required sequence in the minor.

in acceptable courses for that required sequence in the minor. It is strongly recommended that students planning to attend graduate school take an appropriate Asian language through the intermediate level.

Further information may be obtained from the chairman of the Asian Studies Committee, Dr. Eric Gangloff.

3010-20 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. 3020-33 Traditions of the cultures and their modern developments.

3310 Indian Culture (4)

3320 Chinese Culture (4)

3330 Japanese Culture (4)

3340 Islamic Culture (4)

4010-30 Readings in Asian Culture (4, 4) Prereq: Mastery of intermediate-level Japanese, Chinese, Arabic, or Sanskrit. Preceptor and consent of instructor.

4012 Selected Topics in Asian Studies (Content Credit) Content varies. May be repeated. Maximum credit 12 hrs.

4700-48-50 Elementary Sanskrit (3, 3, 3) (Same as Religious Studies 4700-48-50).

4770-80-90 Intermediate Sanskrit (4, 4, 4) (Same as Religious Studies 4775/80/90).

Asian Language and Literature

ARABIC (127)

(See Romance Languages)

1910-30 Elementary Modern Arabic (4, 4, 4) Must be taken in sequence.

2110-30 Elementary Modern Standard (3, 3, 3)

3510-20 Intermediate Modern Standard (4, 4)

3810 Islamic Literature In English Translation (4)

3821 Foreign Study (1-16)

3821 Forestry Study (1-16)

3821 Forestry Study (1-16)

3821 Forestry Study (1-16)

3821 Forestry Study (1-16)

CHINESE

Asian Studies 2511-30-33 Elementary Chinese (4, 4, 4) Must be taken in sequence.

Asian Studies 3510-20 Intermediate Chinese (4, 4) Taped language program. Must be taken in sequence.

Asian Studies 4510-20-33 Advanced Chinese (4, 4) Taped language program. Must be taken in sequence.

ART

Art 3777 Japanese Art (4)

ART

Art 4260 Introduction to Ethnomusicology (4, 4) Economics, Geography, History, and Political Science

Economics 4322 The Political Economy of China

Geography 3780 Geography of Asia

History 3780-90 History of the Middle East (3, 3)

History 4792 Historical Writers In Islamic History (3)

History 4811-21 History of Japan (4, 4)

History 4870 Cultural History of China (3, 3)

History 4890 History of Contemporary China (3)

Political Science 3621-22 Politics of Asian States (4, 4)

Political Science 3641 Government and Politics of Middle East and North Africa (4)

Political Science 3795 Contemporary Middle East (4)

Anthropology, Philosophy, Religious Studies, and Sociology

Anthropology 3210 Peoples and Cultures of Mainland Asia

Anthropology 4510 Peoples of China: Social History

Anthropology 4570 Peoples of Southeast Asia (3)

Anthropology 4590 Peoples of Japan (3)

Anthropology 3602 Philosophy and Religion in India (4)

Anthropology 3660 Buddhist Philosophy and Religion

Philosophy 3671 Religion and Philosophy in China (4)
The concentration and minor in African and Afro-American studies offers an, independent, and off-campus study to foster knowledge of the Black experience through a classroom and experiential learning. Black Studies 2010-20 are prerequisites to the concentration which consists of 36 hours from the Black Studies curriculum. A minimum of 24 hours must be in upper-division credit. Every student's program must include some individualized work under Black Studies 4102, 4103, and 4310, the nature of which should be negotiated with the program director. A maximum of 8 hours in 4102 and 4103 combined can be applied to a major and a maximum of 4 hours in 4102 and 4103 combined can be applied to a minor. In addition, courses from at least two other departments must be selected.

For further information consult the coordinator of the African and Afro-American Studies Committee. Mr. Marvin Pees.

Black Studies (195)
1910-20 Elementary Swahili (4) Taced language program: Must be taken in sequence.
2010-20 Introduction to Black Studies (4, 4)
3140-50-60 Directed Readings in Black Studies (1, 1, 1) Designed for students who are interested in doing intensive reading in some area of Black studies which is defined by the student and the instructor. Prereq. Pre 2010 (or 2020) and consent of instructor.
3330-Predjudice and Racial in the United States (4)
3330 Sociology of Poverty and Inequality (4)
3490 African Religions (4)
3490 Religious Studies and Anthropology 3490
3550 Religion and Race in America (4) (Same as Religious Studies 3550)
3550 Black Religion in America (4)
3650 Philosophy and Religion in India (4)
3671 Philosophy and Religion in America (4) (Same as Religious Studies 3671)
3672 Religion and Society in America (4)
3680 Islam (4)
3680 Religious Studies 3680 (4) (Same as Religious Studies 3680)
3690 Buddhism and Religion in China (4)
3760 Religious Studies 3760 Religion and Society in Japan (4)
3760 Religious Studies 3860 Islam (4)
3760 Religious Studies 3760 Eastern Religions and Western Thought (4)
3770 Zen Buddhism (3)
3770 Religious Studies 4700 Topics in Eastern Religions (4)
4640 Religious Studies 4960 Tradition, Change and Modernity in Asia (4)
4960 Sociology of Poverty and Inequality (4) (Same as Sociology of Poverty and Inequality 4960)

Approved Area Courses
Anthropology 3530 Peoples and Cultures of Africa (5)
Anthropology 3620 Biology of the Races of Man (3)
Art 2700 Black Art (4)
CFS 4310 The Afro-American Family (3)
Music 3350 Introduction to Afro-American Music (4)
Music 4270 Evolution of Jazz (3)
Political Science 2101-10 African BA: The Politics of Change and Stability (4, 4)
Political Science 3055 Minority Group Politics in the U.S. (3, 3)
Psychology 4880 Afro-American Psychology (4)
Religious Studies 3509 Religion and Racism in America (4)
Religious Studies 3590 Black Religion in America (4)
Sociology 3330 Race, Class, and Power (4)
Sociology 3340 Sociology of Poverty and Inequality (4)
Sociology 4320 American Minority Ethnic Groups (4)
Speech 4812 Black Rhetoric (4)

Recommended for the concentration and the minor:
(a) 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 completed.
(b) Students should seek academic advising from the Chairman of the Black Studies Committee for courses for the concentration or the minor which relate to career plans, preparation for graduate study, and relationship to the second major.
(c) Those with a concentration and a minor in Afro-American studies offer in-class, independent, and off-campus study to foster knowledge of the Black experience through a classroom and experiential learning.

Minor: Consists of English 2690 and Art 2935 plus sixteen additional hours of approved area courses. It is strongly recommended that English 2690 and Art 2935 be taken before selection of electives provided for in the minor.

For further information, consult the chairperson of the Cinema Studies Committee, Dr. Ferdinand A. Hinesaid.

Approved Area Courses
Art 3935 Film Design (4)
Broadcasting 3670 TV News Films (3)
Broadcasting 4300-40 Television Production (3, 3)
Comparative Literature 4032 Topics in Film and Literature (3)
English 3320 Film and American Culture (3)
English 3440 Literature and Film (3)
English 4890 Topics in Film Study (3)
Rajan 3540 The Rulan Cinema (3)

Comparative Literature (260)
Pre-concentration in comparative literature consists of 36 hours including Comparative Literature 4010, 4020-22, 3 hours of literature in a foreign language in courses numbered 3300 and above, and nine hours of literature courses selected from Classics 4010, 4230, 4300, 4510. The following 12 hours should include literature courses, either in English or in a foreign language, numbered 3300 and above, from at least two of the following departments: English, Germanic and Slavic Languages, Religious Studies, Romance Languages (certain courses in Philosophy and Theatre may be substituted with the approval of the chairperson of the Comparative Literature Program). Students concentrating in comparative literature are strongly encouraged to acquire a working knowledge of a second foreign language, especially if they hope to pursue comparative literature on the graduate level.

A minor in comparative literature consists of 24 hours including Comparative Literature 4010, two courses from Comparative Literature 4220-32, 6 hours of literature in a foreign language in courses numbered 3300 and above, and 9 hours of literature courses numbered 3300 and above, either in English or in a foreign language, from at least two of the following departments: Classics 4010, 4230, 4510, English, Germanic and Slavic Languages, Religious Studies, and Romance Languages (certain courses in Philosophy and Theatre may be substituted with the approval of the Comparative Literature Program). Students concentrating in comparative literature are strongly encouraged to continue their studies in Philosophy and Theatre by completing the minimum requirement. For further information, consult the chairperson of the Comparative Literature Committee, Dr. Harry C. Hinetidge.

Religious Studies 350 Philosophy and Religion in India (4)
Religious Studies 360 Buddhist Philosophy and Religion in China (4)
Religious Studies 3671 Religious Philosophy and Religion in China (4)
Religious Studies 3762 Religion and Society in Japan (4)
Religious Studies 3860 Islam (4)
Religious Studies 3760 Eastern Religions and Western Thought (4)
Religious Studies 3770 Zen Buddhism (3)
Religious Studies 4700 Topics in Eastern Religions (4)
Religious Studies 4960 Tradition, Change and Modernity in Asia (4)
Sociology 3330 Race, Class, and Power (4)
Basicknowledge,techniques,and sourcesneces-
ture(3,3,3)Contentvaries;may be repeatedfor
credit.
5032 StudiesinComparative Literature(3)
4012-22-32Special Topics InComparative Litera-
tureinEnglish Translation(3,3,3)
5030-32Special Topics InComparative Litera-
turein German Translation(3)
5022 Approaches in Comparative Literature(3)
5032 Studies in Comparative Literature (3)
Approved Area Courses
Classics 3210-20-30 Greek and Roman Mythology (3, 3, 3)
Classics 4010 Greek Drama in English Translation (3)
Classics 4011-38-30 Latin Drama in English Translation (3, 3, 3)
Classics 4012-20-30 Modern Drama in English Translation (3)
Classics 4013-20-30 Latin Drama in English Translation (3)
Classics 4720 Folklore (3)
English 4730 Popular Culture (3)
English 4900 Approaches to Literature (3)
English 5860 Introduction to Literary Research (3)
German 3210-30-30 Masterpieces of German Literature in English Translation (3, 3, 3)
German 4020 German Drama in English Translation (3)
German 4040 The Modern German Novel in English Translation (3)
German 4050 The Faust Legend (3)
Russian 3210-30-30 Survey of Russian Literature in English Translation (3, 3, 3)
Romance Languages 4012 Masterpieces of French Literature in English Translation (3)
Romance Languages 4012-30-30 Masterpieces of French Drama in English Translation (3)
Romance Languages 4012-30-40 Masterpieces of Spanish Literature in English Translation (3)
Romance Languages 4401 Masterpieces of Spanish Drama in English Translation (3)
Romance Languages 4001-40-70 Dante and Medieval Culture (3, 3, 3)
Ancient Mediterranean Civilizations
The concentration in Ancient Mediterranean Civilizations consists of Classics 2100, Classics 2620, Religious Studies 2611, and 29 additional hours from the following list, distributed in such a way that no more than 20 hours are in any one of the three divisions:
(a) Ancient Near Eastern Cultures: History 3310-20, Asian Studies 3110, 3120, 4210.
(b) Greek Culture: Classics 3210, 3220, 3310, 3320, 3340, 3350, 4010, 4220 (where applicable), 3380, 3790; Philosophy 3111, 4410, 4420; Political Science 3801.
(c) Roman Culture: Classics 3230, 3330, 3340, 4220 (where applicable), 4230 (where applicable), 4510; History 3770; Religious Studies 3211-12, 3320, 4315, 4640.
Courses of variable content, topics courses, reading and research, campus, or foreign study in the Departments of Art, Classics, History, Philosophy, or Religious Studies can be applied to the three divisions as appropriate. Students are encouraged to satisfy the Language, Literature, and Arts Triad requirement with Greek, Latin, or Hebrew in either Option I or Option II. Upper division courses in these languages may be applied to the appropriate division listed above.
For further information, consult Dr. C.C. Rutledge (Classics) or Dr. W.L. Humphreys (Religious Studies).
Latin American Studies (600)
Concentration consists of 36 hours including Spanish 3121-20-30 or Portuguese 3121-20, 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 2120-20 (4) or independent Research 4010.
Two years of Spanish or Portuguese or a practical working knowledge acquired independently are a prerequisite.
Minor: Consists of 24 quarter hours selected from Geography 3800 or 3790, History 3970-80-90, Political Science 3625-26, Spanish 3710-20 or Portuguese 3510-20, and the Latin American studies sequence 2120-20 or Independent Research 4010.
For further information, consult the chairperson of the Latin American Studies Committee, Dr. H.E. Lewald.
1920-20 Introduction to Latin American Studies (4)
Introduction to societies of Latin America with special attention to their languages, historical, cultural, and economic aspects, and a study of the political systems and developments and an overview of the three divisions:
(a) Pre-Colonial and Colonial periodsthrough Independence era; 2420-Latter 19th century and the independence era; 2420-Latter 19th century and the Modern era.
The research must be approved and supervised by a faculty member involved in the study of the Latin American area. The research must be approved 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.
4070 Senior Seminar in Latin American Studies. May be repeated with consent of instructor.
Linguistics (623)
This concentration offers a broad exposure to the various fields of linguistics (including historical, descriptive, and theoretical linguistics) along with an opportunity to study areas where language overlaps with other disciplines such as psycholinguistics, sociolinguistics, speech pathology, and the like. It is designed to prepare a student for graduate work in linguistics or related areas, or to serve as a general survey of language and linguistics. It provides the additional possibility of emphasizing the teaching of English as a second language for the student interested in teaching at the B.A. level. The requirements of this concentration are:

(a) A 3000-level sequence or its equivalent
(b) 6 hours of the following, selected in consultation with the Linguistics Committee:
   Anthropology 3800; Audiologic and Speech Pathology 3800; French, German, Russian, or Spanish 4220-60-70; English 3330, 4430, 4440, Speech 4411; Linguistics 4020-30.
(c) 6 hours of the following, selected in consultation with the Linguistics Committee:
   History and Philosophy 3870; Political Science 3625-26, Hispanic 3970-80-90, Portuguese 3510-20; Linguistics 4020-30.
(d) Other hours may be substituted in (b) by appropriate courses in linguistics.
Minor
A minor in linguistics shall consist of 27 credit hours composed of 9 from section (b) and 18 hours from section (c).
NOTE: In addition to the above listed courses for the concentration and the minor there are occasionally offerings in the Honors Series or in graduate seminars which may be substituted for certain requirements subject to written approval of the Linguistics Committee and the Office of the Dean.
For further information consult the chairperson of the program, Dr. Bethany Dumas.
3320 Introduction to Study of English Language (4) (Same as English 2320)
3330 Introduction to Study of English Language (4) (Same as English 2331)
3331 Modern Standard Grammar (3) (Same as English 3332)

4800 Topics in Linguistics (3) Content varies. May be repeated. Maximum credit 9 hrs.
4920-30 Historical Linguistics, Neogrammarians Seminar (3) (Same as English 4920-30).
Traces development of scientific approach to linguistics from Jacob Grimm and Franz Bopp through 19th century and Modern era. Prerequisite is the consent of the instructor and the chairperson of the program.
4930 Introduction to Descriptive Linguistics (3) (Same as English, French, German, Russian, and Spanish 4930).
A concentration in Medieval studies focuses upon culture and society from the collapse of the Roman Empire to the 10th 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 2010 and 4010 and 28 hours of upper-division courses concerned primarily with the Medieval experience, divided among the following three categories: (1) history, philosophy, political science, and religious studies; (2) language and literature; (3) the arts — history of art, architecture, music, and speech and theatre. Courses should not be selected at random but should either form a related pattern or duplicate courses in the history and literature of Medieval England or Italy, etc., or should revolve around a particular discipline, or two closely related disciplines (for example, courses in the history of art and architecture). A minor in Medieval studies consists of Medieval Studies 2010 and 4010 and 16 additional hours distributed among the categories listed above for the major. Each student's program, major or minor, must be approved in advance by the Medieval Studies Coordinating Committee, chairman Dr. Tony Hallett. It is strongly recommended that students selecting the Medieval studies concentration choose for their foreign language requirement the student's most appropriate language for studying, rather than choosing a language for which proficiency is not a necessity. For further information consult the chairperson of the Medieval Studies Committee, Dr. Martin Rice.

A concentration in urban studies consists of 24 quarter hours, including Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies curriculum consists of 24 quarter hours, including Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies curriculum consists of 24 quarter hours, including Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies curriculum consists of 24 quarter hours, including Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies curriculum consists of 24 quarter hours, including Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies curriculum consists of 24 quarter hours, including Urban Studies 4000, and 28 hours from the urban studies curriculum provided below.

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 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 2540-50. The track consists of Economics 4000; Geography 3860; six hours from History 3470-80-90; 4470; 4480; 4490; Political Science 4815 and four hours from Political Science 3631-32-3715; Russian 3510-20 and three hours from 3610-20-30; and six hours from Russian 3210-20-21-30, 3240, 3250, 3260. Track II is designed for students whose 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 2540-50. The track consists of Economics 3210, 4000, and 4320; three hours from History 3470-80-90 and three hours from History 4480, 4490, or Geography 3860; Political Science 4815 and four hours from 3631-32-3715; Russian 3510-20 and 3 hours from 3610-20-30; Marketing 4330; and Finance 4420.

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

A concentration in urban studies consists of 24 quarter hours, including Urban Studies 2500 and 3000, at least 4 hours of Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. For further information consult the chairperson of the Urban Studies Committee, Dr. Martin Rice.

A concentration in urban studies consists of 24 quarter hours, including Urban Studies 2500 and 3000, at least 4 hours of Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below.
Urban Studies Curriculum:

4900 Aspects of Urban Environment (4)(Same as 2000 Man-Environment Systems 1(4)

Architecture:

3450 Community Studies in Complex Culture (4)

Anthropology:

3420 Urban Problems (4)

3410 Urban Environment (4)

3750 The Urban Polity(4)

2000 Man, Location, and Behavior (4)

3430 Urban Geography (4)

History:

4740 The City in Europe (3)

Psychology:

3100-50 Topics In Women's Studies (4)

Women's Studies (944)

Minor: Consists of Women's Studies numbered 3000 or above, except Black studies. Registration by consent of director of cultural studies and the respective chairperson. May be repeated for credit up to maximum of 36 hours.

1900 Cultural Studies (4)

1900 Cultural Studies (270)

2000 Selected Topics (2-4) May be repeated.

WOMEN'S STUDIES

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

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Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

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Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.

Women’s Studies Program 1900-3000 offers a broad range of courses representative of social sciences. Women’s Studies may be used to meet the requirements from the following:

2010-20 and 16 hours of appropriate courses for the concentration or minor with the consent of the director of cultural studies and the respective chairperson.
under-division economics courses. Economics 3110 (or the sequence 3111 and 3112) plus 3120 are required as part of the upper-division program and should be taken as early in the upper-division program as possible. A minor consists of (1) Economics 2110, 2120, 2130, and (2) 15 additional hours in economics at the upper-division level.

Minors are encouraged to include Economics 3110 and 3120. In addition, certification to teach economics in secondary schools is available. Students with such an interest should consult the Certification Office, Room 212, Claxton Education Building as early in their program as possible to determine the appropriate requirements.

GRADUATE

See page 87 in the College of Business Administration. The department offers the following degrees: M.A., M.C.T., M.S., and Ph.D. Also, the MBA degree with a concentration in economics is offered.

English (339)


Undergraduate Studies. The College of Liberal Arts welcomes non-majors in both its sophomore introductions to literature (2510-2600) and also in its 3000-4000 level courses in literature, language, and creative writing. Of particular interest to students in other fields are Special Themes in Literature (3236-37), Forms of Popular Literature and Culture (3233-34), Language and Literature (3230-31), and Technical Writing (4140-42). For prerequisites and other advice, consult specific course descriptions below and departmental advisers.

Majors: A minimum of 36 quarter hours is required in 3000-4000 level courses as indicated for the concentration below.

Twelve English courses at the 3000 level of the English language:

(1) one of the 3000-level creative writing courses followed by the corresponding 4000-level course in the same genre;
(2) four other courses in creative writing at either the 3000 or 4000 level;
(3) two courses in non-fiction writing, film, or English language;
(4) four courses in literature.

Concentration in the English Language:

Twelve English courses at the 3000-4000 level totaling

(1) English 3303;
(2) courses in linguistics and the English language selected from among those offered by the English department, and with English adviser approval, from Psychology 4660, Anthropology 3900, or Linguistics 4300;
(3) two additional courses in language, literature, or writing.

Courses in literature. Individualized Program: The Director of Undergraduate Studies is empowered to approve individualized programs developed by students in consultation with their English advisers. These programs need not necessarily fulfill all of the requirements listed above.

Honors Programs: For students who qualify for this program, the English department offers individualized study in the senior year in a senior thesis and also a comprehensive examination. If the thesis examination both receive grades of B or better, the student will be graduated with Honors in English. Interested students should consult their advisers or the Director of Undergraduate Studies.
Miner: An English minor consists of 24 hours at 2000 level or above, including at least 15 at the 2000-4000 level.

Certification for Teaching: Students planning to teach in the public schools should consult the Certification Coordinator, Room 212, Claxton Education Building.

Departmental Course Information: In the English Office, 316 McClurking Tower, students can obtain a booklet describing current English courses in detail and listing the courses to be offered each quarter throughout the academic year. The booklet is available in advance of University term dates.

1010 English Composition (3) Expository writing recommended for students with ACT English scores at or above cutoff point (currently 17) not by the English Department. Emphasis on invention, organization, development, and revision. Special emphasis on fundamentals of proofreading for students desiring to major in occupations requiring formal writing and composition. A, B, C, I, NC, W grading. Students may not receive credit for both 1010 and 1011.

1011 English Composition (4) Expository writing recommended for students who lack ACT English score needed for 1010 or who have previously failed to pass core that includes the majority of 1010 with two additional class hours of individual and group instruction in grammar, mechanics, sentence patterns, reading comprehension, summarization, paragraph development, A, B, C, I, NC, W grading. Students may not receive credit for both 1010 and 1011.

1811 Writing Workshop (1) Self-paced laboratory course only for students interested in the beginning of the quarter by their English Composition teachers. Individual instruction in grammar, mechanics, sentence patterns, and paragraph development. To receive credit, a student must participate in two hours per week and must also pass the composition class in which he/she is currently enrolled. May be repeated once. A, B, C, I, NC, W grading.

1210 English Composition (3) Analytical writing based on study of great themes in literature, practice in composition. Required of all foreign students (graduates, undergraduates, transfer students) who are not excused from it on the basis of the English Proficiency Examination or credit obtained for the full freshman composition with a grade of C or better at a college or university in the United States which is accredited by a regional association. A, B, C, I, NC, W grading. Students registered for this course are permitted to register for only two other courses.

1211 Written and Oral English for Foreign Students (B) Emphasis on the more advanced structures of English grammar and on paragraph writing. Required of all foreign students who on the English Proficiency Examination demonstrate need for work in English structure, but not at the intermediate level of English 1011. Required also of foreign students who complete 1211. A, B, C, I, W grading. Students registered for this course are permitted to register for only two other courses.

1261 English Pronunciation for Foreign Students (B) Sounds and intonation patterns of American English. Emphasis on vocal manipulation in education, politics, and more than one may be offered for credit. May be repeated with consent of department. A, B, C, I, NC, W grading. (Same as Audiology and Speech Pathology 101B.)

1281 English Pronunciation for Foreign Students (B) Sounds and intonation patterns of American English. Emphasis on vocal manipulation in education, politics, and more than one may be offered for credit. May be repeated with consent of department. A, B, C, I, NC, W grading. (Same as Audiology and Speech Pathology 101B.)

1431 English Composition for Foreign Students (3) Composition for foreign students whose native language is not English. Emphasis on paragraph composition with attention to grammar and mechanics. English 1431 replaces English 1010 for undergraduate foreign students. Prerequisite: 1211 or recommendation by English Proficiency Examinations, A, B, C, I, NC, W grading.

1441 English Composition for Foreign Students (3) For students whose native language is not English, writing based on reading and discussion with attention to use of library and to basic skills of documentation. Practice with typical writing assignments encouraged by college students. English 1441 replaces English 1031 for undergraduate foreign students. Prerequisite: 1431. A, B, C, I, NC, W grading.

1451 English Composition for Foreign Students (3) For students whose native language is not English, writing based on reading and discussion with attention to use of library and to basic skills of documentation. Practice with typical writing assignments encouraged by college students. English 1441 replaces English 1010. 1031, 1033 for undergraduate foreign students. Prerequisite: English 1431. A, B, C, I, NC, W grading.

2010-20 English Majors: A, B, C, I, F, W grading. Students registered for this course are permitted to register for only two other courses.

2510-70-80 Literature of the Western World (4, 4, 4) 2510—Ancient and medieval. 2520—Medieval and Renaissance. 2530—Early modern literature. 2540—Baroque and Rococo. 2550—The Eighteenth Century. 2560—Ancient and medieval. 2570—Renaissance. 2580—Early modern literature. 2590—Baroque and Rococo. 2600—The Eighteenth Century. 2660—Introduction to Drama (4) Study of selected plays to provide critical techniques necessary for understanding of drama. 2680—Introduction to Poetry (4) Study of selected poems to provide critical techniques necessary for understanding of poetry. 2690—Introduction to Film Studies (4) Selected world film titles are used to provide critical techniques necessary for understanding and appreciation of film. Examination of film expression and contorts of film history, writing assignments.

2510-20 American Literature (3, 3, 3) 2510—John Smith through Poe. 2520—Emerson through Mark Twain. 2530—Henry James to present.

2620 Colloquium in Literature (3) Introduction to methodology. S/NC (Same as English 2630.) May be repeated with consent of department. A, B, C, I, F, W grading.

2910 Introduction to Literary Criticism (3) 2911 Modern British Poetry (3) From Robinson to Thomas and more recent poets.

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

3110-3220 Romancro and Prose (3, 3) 3111—Emphasis on War and Superman, and Science Fiction. 3121—Emphasis on Shelley and Holmes.

3150 Tennyson and His Successors (3). Includes such poetry as that by Free-Rhythmists, Realists, and Decadents.

3190 Browning, Arnold, and Hopkins (3)

3191 Melville (3)

3196 The Short Story (3) British and Continental European, with emphasis on 20th Century.

3170 The American Short Story (3) From 18th century beginnings to present, emphasis on 20th Century.

3190-29 English Literature and Culture of the Nineteenth Century (3) Survey of literature dealing with the social and political background of the era. Emphasis on such poets as Shakespeare, Dickens, and the arts. 1010—1020 to 1920. 1920—1930 to 1940.

3230-31 Literature and Other Fields (3) Content varies. Focus on religious, political, social, logical, historical, or other pertinent aspects of literature and culture. May be repeated with consent of department. Maximum credit 6 hrs. BNC. (Same as Philosophy 3332.)

3233-34 Forms of Literary Language and Culture (3) Content varies. Detective fiction, science fiction, Western, and non-Western literature. Focus on forms of literary language and culture. Maximum credit 6 hrs. A, B, C, F, W grading. (Same as American Literature 3333.)

3237 Special Themes in Literature (3) Content varies. The novel, the short story, the American woman, or other topics. May be repeated with consent of department. Maximum credit 6 hrs. (Same as Comparative Literature 3237.)

3190 Woman Writer in England and America (3) Emphasis upon the literary consciousness of women in the 19th and 20th centuries.

3310 Introduction to Study of English Language (4) (Same as Linguistics 3305.)

3321 Cultural History of the English Language (3) Emphasizes influence of social and political forces in the development of English pronunciation, vocabulary, and syntax. (Same as Linguistics 3331.)

3341 Historical Grammar of English (2) Traditional, prescriptive approaches to English grammar, followed by a study of developing approaches to American structuralism and introduction to generative linguistics theory. (Same as Linguistics 3393.)

3344 Old and Middle English Literature in Translation (3) Major texts and genres of Old and Middle English literature from beginnings to 1500.


3410 Literature and Film (4) Aesthetic relationships, emphasis upon media comparison.

3420 Writing Fiction (3) Introduction to writing fiction.

3470 Writing Poetry (3) Introduction to writing poetry.

3480 Writing Drama (3) Introduction to writing both one-act and full-length plays.

3510 Modern British Poetry and Prose (3) More and West to Spenser.

3520 Elizabethan Drama (3) Marlowe, Jonson, and others.
and analyzed for human interest. Writing of scientific feature articles in which data are marshalled.

4140 Technical Writing (3,3)
For students planning careers in physical, life and health sciences, engineering, agriculture, and forestry. Writing of student and professional writing. Conferences on individual student's goals and problems. Open to sophomores with instructor's consent.

4150 Writing of Non-Fiction Prose (3,3)
Further development of skills acquired in basic writing fiction course. Prerequisite: English 3470 or consent of instructor.

4150 Advanced Fiction-Writing (3)
Further development of skills acquired in basic writing fiction course. Prerequisite: English 3470 or consent of instructor.

4160 Writing the Detective and Mystery Story (3)
Instruction and writing cover entire crime field including suspense, police procedural, private eye, spy, and adventure fiction. Prerequisite: English 3470 or consent of instructor.

4170 Short Fiction and Fantasy (3) Survey of general development and basic texts of science fiction, fantasy, and horror fiction. Exercises in writing in genres, in accordance with techniques learned in basic writing fiction course.

4170 Advanced Poetry Writing (3) Further development of skills and techniques learned in basic writing poetry course. Prerequisite: English 3470 or consent of instructor.

4130-30-30 The British Novel (3, 3, 3) Defoe to Jane Austen. 4350—First to Thackeray. 4350—George Elliot to Galsworthy. 4350—James to Proust.

414050 Studies in Literary Theory and Criticism (3) Content varies. Topics vary. May be repeated with consent of instructor. Maximum credit 6 hrs.

4140 Special Topics in Writing (3) Writing integrated with reading, usually taught by professional author. Topics vary. May be repeated. Maximum credit 3 hrs.

4200 Writing the Screenplay and the Television Play (3) Advanced, specialized course in dramatic writing. Completion of English 3450-45-70-70 is desirable, but students with active interest in the medium are invited to seek consent to enroll.

4190-30 Comparative Literature (3, 3, 3) 3100—Antiquity, Medieval, and Renaissance 3300—Modern.

4140 Non-Thesis Graduation Completion (3-15) 5000 Thesis

202 College of Liberal Arts 4103 Independent Study (1-12) See page 183.

4102 Off-Campus Study (1-16) See page 183.

50 credit hrs.


See Romance Languages.

Geography (415)

4150 Advanced Technical Writing (3) Instruction and writing cover entire crime field including suspense, police procedural, private eye, spy, and adventure fiction. Prerequisite: English 3470 or consent of instructor.

4120 Writing the Detective and Mystery Story (3) Instruction and writing cover entire crime field including suspense, police procedural, private eye, spy, and adventure fiction. Prerequisite: English 3470 or consent of instructor.

4118-20-38 Honors: Senior (0,0, 9) Admission by 4103 Independent Study (1-12) See page 183.

4102 Off-Campus Study (1-16) See page 183.

50 credit hrs.


See Romance Languages.

Geography (415)

4150 Advanced Technical Writing (3) Instruction and writing cover entire crime field including suspense, police procedural, private eye, spy, and adventure fiction. Prerequisite: English 3470 or consent of instructor.

4120 Writing the Detective and Mystery Story (3) Instruction and writing cover entire crime field including suspense, police procedural, private eye, spy, and adventure fiction. Prerequisite: English 3470 or consent of instructor.

4118-20-38 Honors: Senior (0,0, 9) Admission by 4103 Independent Study (1-12) See page 183.

4102 Off-Campus Study (1-16) See page 183.

50 credit hrs.


See Romance Languages.
PH. D.Rutgers; L.M. Pulsipher, a. Physical Geography: 3000
the 28 additional introduction to a major which consists of
Ph.D. Southern Illinois University;
c. Cultural Geography: 2500 professional employment or graduate study
program in accordance with specific interests each student may develop a coherent
a departmental undergraduate adviser.
students wishing to major or minor in geography are strongly urged to consult with
24 technical or vocational specialty program is available while pursuing a major or minor
Asian Studies. See Cultural Studies.
Latin American 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 at various geographic levels. 2 hrs and 2 labs.

1610-20 Geography of the Natural Environment (4). Geographical analysis of the physical characteristics of the earth's surface and the processes by which its environment is maintained. 2 hrs.

1620-20 Intermediate Cultural Geography (4). An examination of the cultural settings of the world, including its peoples, climate, and economic systems. 2 hrs.

3000 Man, Location, and Behavior (4) Types of human spatial behavior, such as shopping patterns, commuting, residential mobility, trips, and travel, and the factors that influence these patterns. 3 hrs.

3025 Geography of Transportation (4) Geographic examination of transportation systems, emphasizing transport of people on highways and by public facilities. Relationship of these systems to changing geography of cities and urban hinterlands.

4040 Quantitative Methods in Geography (4) Geographical applications of statistical techniques, point pattern analysis, and analysis of trend units. PreReq: Math 3000 or consent of instructor.

4041 Foreign Study (1-12) See page 183.

4042 Off-Campus Study (1-18) See page 183.

4043 Problems in Geographical Method (4) Examples of problems and approach in geographical research and synthesis. Emphasis on geographical data, area sampling, generalization, classification, regionalization, and questions of scale.

4208 Historical Geography of the United States (6) Survey of changing human geography of United States during four centuries of settlement and development. Emphasis upon changing population of maps, development of agricultural regions, and patterns of urban development. Not open to students who have taken 4550-46.

4516 Principles of Geomorphology (4) Same as Geology 4515.

4520 Geographical Analysis of Soils (4) As physical systems they must be studied in their relationship to the land on which they occur. 3 hrs.

4610 Industrial Geography (4) Factors affecting location of manufacturing and service activities. Investigation of specific cases of role of soil in management of environmental systems. 3 hrs.

4620 Geographical Concept and Method (3) Concepts and principles of design, construction, and reproduction of maps. 2 hrs and 2 labs.

4630 Advanced Cartography (4) Map production from design through draft stage. Pre Req: 4730, 4740, or consent of instructor.

4710 Remote Sensing: Types and Applications (6) Basic principles and uses of aerial photography and other remote sensing techniques. Emphasis upon visualization and interpretation of maps and knowledge of a computer programming language. Pre Req: Consent of instructor.

4730 Advanced Cartography (4) Map production from design through draft stage. Pre Req: 4730, 4740, or consent of instructor.

4740 Remote Sensing: Typcs and Applications (6) Basic principles and uses of aerial photography and other remote sensing techniques. Emphasis upon visualization and interpretation of maps and knowledge of a computer programming language. Pre Req: Consent of instructor.

4900 Proseminar in Geography (4) Overview of major themes in geography, especially trends over the past 25 years. Designed for undergraduate majors and minors; not open to graduate students. PreReq: Completion of at least 12 hrs of major or minor requirements for geography.

Graduate:

The general requirements for the master's and doctoral degrees are given in the Graduate Catalog.

5000 Thesis

5100 Colloquium in Geography (1)

5151 Foreign Study (1-12)

5152 Off-Campus Study (1-12)

5158 Introduction to Geographical Research (3) Techniques of design and production of maps and other geographic materials. Pre Req: 4730 or 4740.

5170 Geographic Concept and Method (3)
3210 Introductory Petrology (4) Introduction to the petrographic microscope and study of minerals. Laboratory includes hand specimen, chemical, and X-ray methods of identification. Prerequisite: Geology 4140. Credit 3 hr. 3 lab. 1010 Introduction to the Petrologic Microscope (4) Systematic review of important metamorphic and igneous rock types. May be taken to 4120, 4130 for credit only. 1 hr. 3 lab.

3270 Geologic History of Land Organisms (4) Geologic history and development of terrestrial and aquatic biota and ecosystem with special emphasis on fossil record of land plants and vertebrates. Lecture: 3 hr. 1 lab. Prerequisite: consent of instructor. 3 lectures and 1 lab. or field period.

3280-99 Introductory Palaeontology (4) Systematic review of important invertebrate fossil groups. May be taken to 4120, 4130 for credit only. 1 hr. 3 lab. or field period.

3290 Geologic History of the Earth (4) Origin and development of oceans and continents. Historical changes of climate. Prerequisite: 12 quarterhrs of geology and consent of instructor. 3 lectures or 1 lab. or field period.

3290-99 Stratigraphy-Sedimentation (4) Stratigraphic study of stratigraphic successions and cycles and sedimentary processes and interpretation of depositional environments. Prerequisite: consent of instructor. 3 lectures and 1 or 2 labs. or field period.

3290-99 Introductory Oceanography (4) Basic geological and physical processes affecting the ocean environment. Not open to geology majors. 2 lectures and 1 or 2 labs. or field period.

3290-99 Advanced Oceanography (4) Geophysical problems involving earth environments and resources, and geologic parameters associated with their control and movement. Prerequisite: Geology 4120 or consent of instructor. 3 lectures or 1 lab. or field period.

3290-99 Geology for Engineers (3) Geomorphological processes and landforms, landscapes, 2 lectures and 1 or 2 labs or field period. Prerequisite: 12 quarterhrs of geology or consent of instructor.

4011 Principles of Economic Geology (4) Formation of economic minerals, classification, identification, occurrence and origin of different types of mineral deposits, metallurgy, ore deposits, 3 hrs. 1 lab. Prerequisite: Geology 3180.

4100 Principles of Geologic Engineering (4) Introduction to stratigraphic successions and cycles and sedimentary processes and interpretation of depositional environments. Lecture: 3 hr. 1 lab. Prerequisite: Geology 3180 or consent of instructor. 3 lectures and 2 labs. or field period.
analysis as applied to forest assemblies and archaeo-
logical lithologies. Prereq: 3260 or consent of in-
structor. 3 hrs and 1 lab.

4340 Paleobotany (4) Survey of fossil record of plants, emphasis on (1) morphological diversity and evolution in major plant groups and (2) chronological succession and geo-
graphic distribution of past floras on earth. Prereq: 1430 or 2101. Botany 2015-20 or consent of instruc-
tor. 3 hrs and 1 lab-per-field period. (Same as Botany 4340).

4350 Evolution of Higher Taxa (4) Discussion of current evolutionary theory in relation to paleo-
biology, patterns of evolution in fossil organisms at fam-
ilier level or higher. Prereq: 3260. 3270-32 also rec-
ommended. 2 lectures one 2-hr seminar.

4360 Biostatistics (Principles of) Application of paleontological data to stratigraphic study, codifica-
tion of stratigraphic nomenclature and recommended practice. Prereq: 3260 and 3560. 1 lecture plus one 1-hr period.

4370 Micropaleontology (3) A survey of geologically and stratigraphically important microfossils and their paleontological association if known. Special emphasis is given fossil foraminifers, protists, and palynomorphs. Prereq: 3260 or consent of instruc-
tor.

4380 Introduction to X-Ray Methods (1) An intro-
duction to the generation and nature of X-rays and applied to X-Ray Diffraction, X-Ray Fluorescence and Electron Microprobe Analysis. Prereq: 3190 or consent of instructor.

4460 Principles of Geochemistry (4) Application of electron microprobe and X-Ray Fluorescence techniques on analytical tools for the determination of the chemistries of solid par-
ticles such as minerals and rocks. Prereq or coreq: 4307 or consent of instructor.

4510 Process Geomorphology (4) Geomorphological processes including bedload transport and deposition, with special emphasis on interaction between physical, biological, and human systems. Prereq: 1410 or consent of instructor.

4570 Petrophysics (3) Principles and techniques of X-Ray in identifying crystalline substances, includ-
ing identification of minerals and diffraction.

4610 Optical Mineralogy (4) Identification of miner-
als and determination of crystal-chemical parame-
ters using petrographic microscope.

4620 Process Geomorphology (4) Gradational pro-
cesses operation on and near the earth's surface, applied geomorphology, and field work in geomor-
phology. Prereq: 1430 and 4510. 3 hrs and 1 lab in field period.

4650 Optical Mineralogy (8) Identification of miner-
als and determination of crystal-chemical parame-
ters using petrographic microscope.

4660 Principles of Geomorphology (4) Application of chemical principles to geologic problems. Empha-
sis on crystal chemistry and relations between basic atomic structure and distribution and behavior of elements in the earth's crust. Prereq: Chemistry 1110-20 or equivalent required. Recommended 3130. 3 lecture hours.

4660 Mineral Phase Equilibria (2) Principles of phase-chemistry and application of phase equilibria studies in rock-forming mineral systems as aid to understanding conditions of formation and modifi-
cation of rocks. Prereq: 4610 or consent of instruc-
tor.

4670 Exploration Methods (3) Principles in geologi-
cal, geophysical and geochemical exploration methods. Computation of grades and reserves. Ap-
plication to different types of mineral deposits.


4770 Evolution of Oceans and Continents (4) Intro-
duction to study of origins and changes that have oc-
curred in earth's crust with emphasis on modern concepts of continental drift and plate tectonics. Prereq: 1410.

4790 World Geology of Petroleum (4) Geological history of petroleum deposits, methods of explora-
tion and reserve assessment, geology and geochemical distribution of known and potential reservoirs. Prereq: 1410 or equivalent and 3160 or equivalent.

4790 Uranium Deposits (4) Distribution, charac-
teristics, and origin of different types of uranium deposits. Prereq: Exploration and evaluation of uranium deposits, with special reference to domestic poten-
tial resources. Prereq: 4130 or consent of instructor. 3 hrs and 1 half-term/period.

4810 Special Problem in Geology (1-10) Prereq: Consent of instructor: May be repeated. Maximum credit 4 hrs.

GRADUATE

The general requirements for master's and doctoral degrees are given in the Graduate Catalog.

5000 Thesis 36.5000-51.000 Ore Deposits Mineral (3)

5005 Experimental Geochemistry Laboratory (1-3)

5120 Geophysics—Gravity and Magnetic Methods (4)

5130 Geophysics—Seismic Exploration Methods (4)

5140-5190 Special Problems in Geology (1-1, 1-4)

5120 Advanced Stratigraphy and Sedimentation (4)

5340 Seminar in Local Stratigraphy (1)

5350 Selected Topics in Geology (1)

5370 Petrophysics (4)

5400 Photogeologic Interpretation (4)

5450 Plate Tectonics and Orogeny (4)

5520 Igneous Petrology (4)

5530 Sedimentary Petrology (4)

5540 Ternageneous Clastic Sedimentary Petrology (4)

5550 Carbonate Sedimentary Petrology (4)

5610 X-Ray Diffraction: Single Crystal Techniques (3)

5640 Clay Mineralogy (4)

5670 Geochemical Prospecting (3)

5690 Cathodoluminescence Petrography (3)

5710 Advanced Paleontology (4)

5720 Palaeomagnetism and Nomenclature and Tect-

5750 Metamorphic Petrology (2)

5820 Strata-bound U and Strontium Sulphate Deposits (2)

5830 Magnetic Mineral Deposits (4)

5840 Ore Petrology (4)

5860 Regional Studies in Geology (1-3)

5915 Geomorphology (4)

6000 Doctoral Research and Dissertation

6110 Seminar in Stratigraphic Geology (3)

6120 Seminar in Paleontology (3)

6130 Seminar in Structural Geology (5)

6140 Seminar in Mineralogy (3)

6150 Seminar in Petrology

6160 Seminar in Economic Geology

6170 Seminar in Geochemistry

German and Slavic Languages

Professors: J. L. Elfill, Ph.D., OSU; M. F. Khare, Ph.D., Math, Dr. White, Ph.D., Math; C. J. Herzog, Ph.D., Math; J. E. Faden, Ph.D., Math; H. W. Miller, Ph.D., Math; W. A. Broni, (Debut); R. L. Hilt, Ph.D., Math; D. P. Cailliet, Ph.D., Math; R. L. Schreiber, Ph.D., Math; J. W. Burford, Ph.D., Math; M. F. Khare, Ph.D., Math; M. H. Finkel, Ph.D., Math.

Associate Professors: J. C. Miller, Ph.D., Chicago; U. C. Rosenkohn, Ph.D., Cornell.

Assistant Professors: J. G. H. Miller, Ph.D., Chicago; C. J. Herzog, Ph.D., Math; K. M. Hohensiepen, Ph.D., Stanford.

Instructor: M. H. Finkel, M.A. Intensive.

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 UTk. For qualified students, the department also offers German 4101 Foreign Study and Russian 4101 Foreign Study. See page 161. Students should consult the department before registering for the foreign study course.

German

Major: Majors in German should carefully prepare their programs in consultation with the departmental faculty advisor. German 2110-20 or the equivalent is a prerequisite to the major. The major consists of 36 hours of courses, including 2000, 3000, and 4000. 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 consider a minor in some other area of the humanities. German 2110-20-30 or its equivalent is a prerequisite to the minor. The minor shall consist of at least 24 hours of German courses numbered above 2000, which will normally include German 3110-20-30 (or 3410-20-30), and 15 additional hours of courses numbered above 2000, excluding 3010-20-30 and courses in English translation.

Russian

Major: Russian majors should carefully prepare their programs in consultation with the departmental faculty advisor. Russian 2110-20-30 is prerequisite to the major. The major consists of 36 hours of courses, including 2000, 3000, and 4000. It is recommended that Russian 2110-20-30-40-50-60, and 9 hours of courses numbered 4000 and above is required. It is especially recommended that students take History 3470-90 and 9 hours of sophomore English to prepare their programs in some other area of the humanities. Russian 2110-20-30 is prerequisite to the minor. The minor shall consist of at least 12 hours of Russian courses, excluding 9 hours from Russian 3440-50-60 and 3210-20-30-40-50-60 and 18 hours to be taken from Russian 3110-20-30-40-50-60 and courses numbered 4000 and above. Russian and East European Studies. See Course Descriptions.

Certification for Teaching German and Russian

Consult Certification Clerk, Room 212 Clanton Education Building.

German (433)

1110-20-30 Elementary German (3, 3, 3) Must be taken in sequence.

1510-20-30 Intermediate German (4, 4) Must be taken in sequence.

1518-20-25-28 Honors: Elementary and Intermediate German (3, 3, 3) may be repeated for credit with consent of department. Prerequisite: 9 hrs of courses (exclusive of 3010-20-30) in courses in English translation or equivalent.

3410-20-21-30-40-50-60 Recommended that majors also take History 1510-20 or 3710-20-30 and 8 hours of sophomore English. Majors are also strongly urged to consider a minor in some other area of the humanities.

4810-20-30 Advanced Conversation and Composition (3, 3, 3) Prerequisite: 3810-20-30 or equivalent or consent of department.

4600 Business German (3) Survey of German used in banks of business and economics, intended primarily for students wishing to major or minor in business or economics. Prerequisite: 3110-20-30.

GENERAL COURSES

2110-20 Culture of German-Speaking Peoples (3) A survey of all culture types of German-speaking peoples from their first contact with Romans to the present. Prerequisite, English. Students opting for 4 hrs credit will be expected to present an appropriate amount of extra work required for the 3 hrs.

2120-30 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-credit will be expected to present an appropriate amount of extra work required for the 3-credit.

3330 Dramas of Ibsen and Strindberg (3-4) Study of two principal forerunners of 20th-century drama. Primarily for students desiring entry to graduate study in German. No foreign language credit.

4330 Novels of Hermann Hesse (3-4) Study of one of the most influential writers of the 20th century and his influence on contemporary culture. No foreign language credit.

4340 Topics in German Literature in English Translation (1-4) Topics and credit hours vary from semester to semester. Student suggestions for topics are welcome. No foreign language credit. May be repeated for credit.

GRADUATE

The Department of Germanic and Slavic Languages offers three advanced degrees. They are Master of Arts (M.A.) in German, Doctor of Philosophy (Ph.D.) in German Language and Literature. The requirements for these degrees are set forth in the Graduate Catalog.

3000 Thesis

5010 Foreign Study (1-12)

5103 Off-Campus Study (1-12)

5101 Foreign Study (1-12)

5810-20-30 Advanced Conversation and Composition (3, 3, 3) Prerequisite: 2110-20-30 or equivalent or consent of department.

5030 Business German (3) Survey of German used in banks of business and economics, intended primarily for students wishing to major or minor in business or economics. Prerequisite: 3110-20-30.

GENERAL COURSES

2110-20 Culture of German-Speaking Peoples (3) A survey of all culture types of German-speaking peoples from their first contact with Romans to the present. Prerequisite, English. Students opting for 4 hrs credit will be expected to present an appropriate amount of extra work required for the 3 hrs.

2120-30 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-credit will be expected to present an appropriate amount of extra work required for the 3-credit.

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4330 Novels of Hermann Hesse (3-4) Study of one of the most influential writers of the 20th century and his influence on contemporary culture. No foreign language credit.

4340 Topics in German Literature in English Translation (1-4) Topics and credit hours vary from semester to semester. Student suggestions for topics are welcome. No foreign language credit. May be repeated for credit.

GRADUATE

The Department of Germanic and Slavic Languages offers three advanced degrees. They are Master of Arts (M.A.) in German, Doctor of Philosophy (Ph.D.) in German Language and Literature. The requirements for these degrees are set forth in the Graduate Catalog.

3000 Thesis

5010 Foreign Study (1-12)

5103 Off-Campus Study (1-12)

5101 Foreign Study (1-12)

5810-20-30 Advanced Conversation and Composition (3, 3, 3) Prerequisite: 2110-20-30 or equivalent or consent of department.

5030 Business German (3) Survey of German used in banks of business and economics, intended primarily for students wishing to major or minor in business or economics. Prerequisite: 3110-20-30.
Modernization of the Middle East (3) Ad-

dvanced reading and dissertation course which

examines key facets of political, economic, and so-
cial dynamics in contemporary Middle East with

emphasis on institution building, elites, and ideol-

ogy. Prereq: 3795 or consent of instructor.

Historical Writers in Islamic History (3) Ad-

vanced reading and dissertation course which intro-

duces student to major historiographers of Islamic

history. Prereq: 4 hrs of Middle East history or consent of

instructor.

4811-21 History of Japan (4, 4)

4940 History of Mexico (3)

4950 History of the Caribbean (3) Caribbean region

from discovery and colonization to contemporary

times.

4970-10-30 China (3, 3, 3) 4870—Cultural History of China;

4880—History of Contemporary China.

4901-20-30 History of the South (3, 3, 3) 4910—

1840-1870; 4920—Since 1870.

4950-60 The Negro in American History (3)

4910-20-30 History of the South (3, 3, 3)

4920-1840-1870 .4930—Since 1870.

4930-40 History of Contemporary China.

4920 History of Modern China.

4990 History of Modern China .

5101-12-13-14 M .A. Reading Courses (3,3,3,3,

3,3,3,3)

5311-12-13-14-15-16-17 M .A. Reading Courses (3, 3, 3, 3, 3, 3, 3, 3)

5450 Topics in Twentieth-Century European His-

tory (3)

5360 Topics in American Foreign Relations (3)

5320 Topics in Historical Editing (3)

5310 Topics in Women's History (3)

5960 Seminar in Early Modern European History (3)

5940 Seminar in Central European History (3)

5960 Seminar in Anglo-Irish Relations (3)

5690 Topics in Twentieth-Century American His-

tory (3)

5680 Topics in Nineteenth-Century American His-

tory (3)

5670 Topics in American Colonial History (3)

5675 Topics in the Early National Period of Ameri-

can History (3)

5670 Topics in American Colonial History (3)

5670 Topics in Nineteenth-Century American His-

tory (3)

5670 Topics in Medieval History (2)

5700 Topics in European Urban History (4)

5700 Topics in Ancient History (3)

5700 Topics in German National Socialism (3)

5700 Topics in Middle Eastern History (3)

5810 Topics in Andean History (3)

5820 Topics in Mexican History (3)

5830 Topics in Chinese History (3)

5840 Topics in Japanese History (3)

5910-20 Topics in Southern History (3)

6000 Doctoral Research and Dissertation

6010-00-30-40 Directed Readings (3, 3, 3, 2)

5300 Seminar in Special Studies (3)

6310 Seminar in Tennessee History (3)

6330 Seminar in American Diplomatic History (3)

6410 Seminar in Western Europe (3)

6444 Seminar in French History (3)

6480 Seminar in Russian History (3)

6510 Seminar in English History (2)

6510 Seminar in American Colonial History (3)

6520 Seminar in Era of American Revolution (2)

6530 Seminar in Early National Period of American History (3)

6531 Seminar in Jacksonian Period (3)

6540 Seminar in Social and Cultural History of the United States (5)

6560 Seminar in American Western Movement (3)

6717 Seminar in Medieval Institutions (3)

6770 Seminar in Central European History (3)

6810 Seminar in Latin American History (3)

6910 Seminar in the Civil War Era (3)

6920 Seminar in Twentieth-Century America (3)

6940 Seminar in History of the South (3)

6960 Seminar in Negro History (3)

Honors Program

Director: Dr. Harry Jacobson

Non-Departmental

The following courses are restricted to

students who have been selected to participate.

1118-28-38 are for first-year students

invited on the basis of test scores, high school

averages, and where appropriate, on

honors committee reports. Participation in the

2000-, 3000-, and 4000-level courses is

based on cumulative averages. At least

1118 students with an average of 3.25 or greater are

eligible.

Honors (509)

1118-28-38: Honors—First-Year—Inquiry and Modes of

Thinking (3, 4, 4, 4-8, 11-18—The Humanities; 1108—
The Natural Sciences; 1108—The Social Sciences.

May be repeated.

2119-29-30: Honors—Special Problems Seminar (3, 3, 3,-

4, 4) 11-18—The Humanities; 2108—The Natural

Sciences. These seminars focus on special problems in

the respective disciplines. Specific topics vary from year to

year. May be repeated.

3118-39-40: Honors—Junior—Colloquium (2-4, 2-4, 3-4)

Small group study of selected topics. May be

repeated.

4100: Honors: Foreign Study (1-6) See page 181 and

Director of Special Programs. Primarily for Col-

lege Scholars Students.

4102: Honors: Off-Campus Study (1-16) See page 181 and

Director of Special Programs. Primarily for College Scholars Students.

4110-28-30: Honors—Senior—Colloquium (2-4, 2-4, 3-4)

Small group study of selected topics. May be repeated.

4990: College Scholars Studies (3) De-

signed for College Scholars working on their senior

thesis, project, or performance. May be repeated for a
total of 24 credit hours.

Human Services (532)

Professor:

R. F. Kronick (Director, Ph. D. Tennessee).

Associate Professors:

F. Stedman, Ph. D. Connecticut.

Assistant Professors:

M. W. DeVoe, Ph. D. Tennessee; F. J. Spicuzza, M .S.W.

Assistant Professors:


Assistant Professors:


Associate Professors:

F. Stedman, Ph. D. Connecticut.

Professor:

R. F. Kronick (Director, Ph. D. Tennessee).

The Program in Human Services was

established in 1971 for the purpose of preparing education, training,

and experience, at the undergraduate level, for

students in working to enhance and increase the well-being of our society and

of the individuals it serves. The course

is provided by the faculty is also

appropriate for individuals who wish to

primarily to improve their understanding of

themselves and of the society in which they live.

Graduates of the program are at work in

a wide variety of settings, ranging from

nursing homes to nursing schools, and are

confident with the human consequences of

problems such as crime, poverty, alcoholism, child abuse, and discrimination. Many of

our graduates enter graduate and professional schools, seeking advanced degrees in fields

as diverse as guidance counseling, physical therapy, hospital administration, law,

medicine, and social work.

The curriculum of the program includes

required courses, elective courses, advising,

and supervised experience in one or more

human service agencies or organizations.

Students pursuing a major in Human Services will take 2690, 3100, 3300, 4220, 4230, and

4400—preferably in the order given—and one course from each of the four lists of courses

given below; total hours' credit for the major

will vary from 48 to 52, due to differences in

the number of hours' credit awarded for different courses on these four lists.
the eligibility criteria for 1848 are possible. Interested students should see the department head in Ayres Hall, Room 121.

The prerequisites for 1540 are two years of high school algebra and one year of geometry. Students who present an ACT score below 16 in mathematics may take 1540 but are advised to take Algebra Refresher, Part I, in the Workshops and Non-Credit Programs (or equivalent elsewhere), and to make at least a B, or to make a passing grade in Algebra Refresher, Parts I and II, in the Workshops and Non-Credit Programs (or equivalent elsewhere). Students who have taken two years of high school algebra and one year of high school geometry and who present an ACT score in mathematics of at least 26 (or a grade of B or better in Mathematics 1850) may take 1540 but are advised to omit 1540 and begin with 1550. Students who have taken at least one year of high school algebra and geometry, and present an ACT score in mathematics of at least 24) are encouraged to omit 1540 and begin with 1550. Students who have taken at least one year of high school algebra and geometry must remove the deficiency by taking the appropriate course(s) in the Workshops and Non-Credit Programs (or equivalent elsewhere). No student who has received credit for Mathematics 1840 with a grade of C or better may subsequently receive credit for Math 1540 or 1700. No student who has received a grade of C or better in Mathematics 1850 may subsequently receive credit for Mathematics 1550.

Honors Courses: The current practice of the department is to offer honors versions (1849-59-69 and 1848-58-68) of 1540-50-60 and 2840-50-60 in sequence, fall-winter-spring, each year. In addition to the appropriate course(s), the title will be preceded by the word "Honors," both in the Timetable and on the syllabus. Students who complete 1849 may subsequently receive credit for Mathematics 1848 with a grade of C or better.

Proficiency Examinations: Students who have taken calculus in high school are encouraged to complete the proficiency examination (1849-59-69 and 1848-58-68) of 1540-50-60 and 2840-50-60 in sequence, fall-winter-spring, each year. In addition to the appropriate course(s), the title will be preceded by the word "Honors," both in the Timetable and on the syllabus. Students who complete 1849 may subsequently receive credit for Mathematics 1848 with a grade of C or better. Students who earn at least a grade of B in high school algebra and geometry, and present an ACT score in mathematics of at least 26 (or a grade of B or better in Mathematics 1850) may take 1540 but are advised to omit 1540 and begin with 1550. Students who have taken at least one year of high school algebra and geometry must remove the deficiency by taking the appropriate course(s) in the Workshops and Non-Credit Programs (or equivalent elsewhere). No student who has received credit for Mathematics 1840 with a grade of C or better may subsequently receive credit for Math 1540 or 1700.

Program Planning for Majors: Mathematics majors may choose a "reasonable" freedom in determining how they will meet the advanced requirements of the major. This is necessary, since mathematics majors may select from a variety of possible careers. In order to determine this freedom, the department has designed a variety of sample programs, which majors may wish to follow. Programs are available to prepare students a. for employment in business or industry, with emphasis on basic mathematics and computer science, operations research, computer science, and business administration; b. for graduate work, in pure mathematics, c. for teaching, at the high school or college level; d. for careers in business, law, medicine, or any other area of training in mathematics; e. for the preparation of future mathematics teachers. Programs, along with other useful information for majors, are published in a Program Planning Guide, which is available on request at the department office, room 121, Ayres Hall. Prospective students are invited to write for copies.

1010 Trigonometry (4) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. For students who are enrolled in trigonometry or in high school trigonometry 2 this year, no college credit will be awarded.

1025 Advanced Mathematics: A Philosophical Approach (4) Mathematics as a science, art, and "language" game. Emphasis on the axiomatic method and limitations of the axiomatic method; the infinite and the infinitesimal; mathematical creativity; ethical problems facing the mathematician-scientist.

1940 College Algebra (4) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, inequalities, and functions, including logarithmic and exponential functions, graphs, and the title will be preceded by the word "Honors," both in the Timetable and on the syllabus. Students who complete 1849 may subsequently receive credit for Math 1540 or 1700. Prospective students are invited to write for copies.

1010 Trigonometry (4) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. For students who are enrolled in trigonometry or in high school trigonometry 2 this year, no college credit will be awarded.

1540 College Algebra (4) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, inequalities, and functions, including logarithmic and exponential functions, graphs, and the title will be preceded by the word "Honors," both in the Timetable and on the syllabus. Students who complete 1849 may subsequently receive credit for Math 1540 or 1700. Prospective students are invited to write for copies.

1010 Trigonometry (4) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. For students who are enrolled in trigonometry or in high school trigonometry 2 this year, no college credit will be awarded.

1010 Trigonometry (4) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. For students who are enrolled in trigonometry or in high school trigonometry 2 this year, no college credit will be awarded.
Prerequisites, if specific courses are listed below as prerequisites, equivalent projects are acceptable. A student wishing to continue the study of mathematics should consult the mathematics department. Undergraduates working towards a major in mathematics with a view to taking advanced work are strongly recommended to include 4510-20 and 4510-60 during their junior or senior year.

3300 Elementary Quantitative Methods (4) Elementary methods of statistical problems, sample spaces, sets, and random variables, sampling distributions, simple random processes. Prereq: 1550 or 1830.


3550-60 Intermediate Analysis for Teachers (3) Elementary concepts, derivatives, Riemann integration, sequences and series, continuity, uniform continuity, Riemann integral, theory of integration, differentiability, derivatives, applications to simple problems in the behavioral sciences. Prereq: One year of high school algebra and at least sophomore standing in elementary education. Must be taken in sequence.

3700-90 Introduction to Combinatorial Theory (3,2) 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 2560 or consent of instructor.

3900 How to Prove It (3) Course is designed to improve understanding of methods and techniques of mathematical proof. Background in methods of proof by means of practice and participation in seminar setting. Variable content will include elementary number theory, Euclidean geometry, graph theory, set theory, relations and functions, and mathematical induction. Prereq: Math 2010-20 or consent of instructor.

3981 Mathematical Models in the Life Sciences (3) Introduction to modeling by means of applications in the life sciences. Mathematical modeling techniques applied to population growth, competition, predator-prey relations, and other problems. Emphasis on the concepts, ideas which have had a significant impact on scientific thought. Prereq: One year of calculus. Prereq: Consent of instructor.

3984 Matrix Analysis and Applications (3,3) Topics covered include matrix theory, matrix equations, matrix norms, singular value decomposition, and principal component analysis. Prereq: Math 2860 or 4050.

3985 Mathematical Methods in the Life Sciences (3,2) Introduction to applied mathematics with applications to biological phenomena. Prereq: Math 2860 or 4050.

4046 Projects in Opera Theatre (3-4) May be re-
peated for credit. Prereq: Consent of instructor.
4050 Advanced Instrumental Conducting (2) De-
velopment of knowledge and skills in instrumental
conducting; study of various periods and compos-
ers and relationship of different styles to the con-
ductor's art; musical analysis and practice in con-
ducting. Prereq: Music Ed 4430 or equivalent.
4058-58 Elementary and Intermediate Piano Pedagogy (8, 8) Examination and study of piano
methods and materials designed for teaching pre-
college level students. Prereq: Consent of instruc-
tor.
4060 Choral Techniques (1) Techniques and meth-
ods involved in producing total choral pro-
gram. Prereq: Consent of department head. May be repeated. Maximum credit 3 hrs. Prereq: Consent of instructor.
4061 Special Topics in Performance (1-3) Prereq: Consent of department head. May be repeated. Maximum credit 6 hrs.
4100 Jazz Directing (1) Rehearsal techniques for jazz ensembles; special conducting techniques, repertoire, library systems, programming, and supervised laboratory experience in arranging uni-
versity jazz ensembles. Prereq: Enrollment in applied music with jazz emphasis or consent of instructor.
4121 Jazz Pedagogy (1) Methods and materials re-
lating to teaching of jazz and administering at jaz-
ze programs. Prereq: Consent of instructor.
4140 Advanced Improvisation on Jazz (2) Emphasis on further development of individual skills and solving improvisational problems in jazz improvisation. Prereq: Music 3625-6.
MUSIC THEORY AND COMPOSITION
3111-21-31 Theory (3, 3, 3) Materials of music with emphasis on literature of Baroque, Clas-
sical, and Romantic periods. Exercises in writing an analysis. Must be taken in sequence.
3112-23-33 Advanced Ear Training (1, 1, 1) Should be taken in sequence. Prereq: 1131 or 1138 or con-
sent of instructor.
1210-20 Orientation in Music : Music for the Theatre (3) Recommended for the admission of stu-
dents with 3 yrs in music from death of Bach to present. Prereq: Consent of department head.
1210-20-30 History of Music (3, 3, 3) 2120-1900, 1900-1990, 1900 to present. Requires musical background. Prereq: Consent of instructor.
1221 Orientation in Music : Germany from 1758 (3) Historical study of German composers and their music from death of Bach to present. Prereq: 4102 or consent of instructor.
1231 Orientation in Music : The Twentieth Century (3) Survey of sound and popular music, jazz, and ethnic music of the 20th century. Prereq: 1210 or consent of instructor.
1232 Orientation in Music : Music for the Theatre (3) History of music for the theatre from Broadwood stage, film, operetta, and opera. Prereq: 4120 or consent of instructor.
3230 The Concerto (3) Survey of literature from 17th century.
3240 The Symphony (3) Survey of symphonic litera-
ture from (precursors of) classical symphony to present.
3250 Chamber Music (3) Survey of chamber music from 4th through the 20th centuries.
3271-81 History of Opera (3,3) The Development of Setting of the Ordinary from 4th through 1600, recommended as a review course for graduate study. Prereq: Consent of instructor.
3271-81 History of Opera (3,3) The Development of Setting of the Ordinary from 4th through 1600, recommended as a review course for graduate study. Prereq: Consent of instructor.
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4310 History of Art Song (3) Survey of art song from that level. Course level and credit hours will be determined by the applied faculty. Students must be concurrently registered for no less than six (6) credit hours in applied music courses (piano, voice, violin, etc.) and instruction time must be a half-hour private lesson plus a half-hour private lesson. Determination of the mode of instruction rests with the department. Study at the secondary level requires one hour of private instruction per week or one-hour private lesson plus a half-hour private lesson.

Undergraduate students seeking entrance to applied music courses must be concurrently enrolled for no less than six (6) credit hours in academic courses. Graduate students must be fully registered for no less than three (3) credit hours in academic courses. Exception: These requirements may be waived with the approval of the department head if a special class registration is necessary to complete the 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. Prerequisites for this course are to attend scheduled concerts, recitals, master class, master class every semester, and to perform at least once each quarter as part of a private lesson with the applied music faculty.

Applied Music Fees: $20 per quarter for first (1) credit hour; $40 per quarter for hour lesson (2-4 credit hours)

Computer registration and applied music fee payment must be verified in the Department of Music office no later than the end of the second day of classes of the fall, winter, and spring quarters and the first day of the summer terms in order to be accepted for applied music study.

Applied music courses are divided into three levels: Artsong, Wind Chamber Music, and Instrumental Works.

1500-2500-3500-4500-5500 Flute (1-4) May be repeated for credit.
1505-2505-3505-4505-5505 Oboe (1-4) May be repeated for credit.
1510-2510-3510-4510-5510 Bassoon (1-4) May be repeated for credit.

1515-2015-2515-3515-4515 Clarinet (1-4) May be repeated for credit.
1520-2520-3520-4520-5520 Saxophone (1-4) May be repeated for credit.
1525-2525-3525-4525-5525 Horn (1-4) May be repeated for credit.
1530-2530-3530-4530-5530 Trumpet (1-4) May be repeated for credit.
1535-2535-3535-4535-5535 Trombone (1-4) May be repeated for credit.
1540-2540-3540-4540-5540 Baritone (1-4) May be repeated for credit.
1560-2560-3560-4560-5560 Tuba (1-4) May be repeated for credit.
1565-2565-3565-4565-5565 Tuba (1-4) May be repeated for credit.

1570-3570-4570-5570 Cello (1-4) May be repeated for credit.
1575-3575-4575-5575 String Bass (1-4) May be repeated for credit.
1577 Electric Bass (1-4) May be repeated for credit.
1580-3580-4580-5580 Piano (1-4) May be repeated for credit.
1585-3585-4585-5585 Harpsichord (1-4) May be repeated for credit.
1590-3590-4590-5590 Organ (1-4) May be repeated for credit.
1595-3595-4595-5595 Guitar (1-4) May be repeated for credit.

1597 Electric Bass (1-4) May be repeated for credit.
1599-3599-4599 Composition (1-3, 1-3, 1-3, 1-3) May be repeated for credit. Prereq: Consent of instructor.
3677 Electric Bass (1-4) May be repeated for credit.

ENSEMBLES
Every student must participate during each quarter of residence is required of all students studying applied music: String, woodwind, brass, and percussion students must attend the following ensemble requirements: (1) String, woodwind, brass, and percussion students must meet the minimum of six credits in any of the following ensembles: string orchestra, band, chamber music, and percussion orchestra. (2) Voice students must meet the minimum of six credits in any of the following ensembles: Women's Chorale, Chamber Singers, University Chorus, Women's Choir, Concert Choir, Women's Choir, Choral Conducting Performance, and Suzuki string techniques, and the Master of Arts degree in musicology and music theory. See the Graduate Catalog for admission and degree requirements.

5000 Thesis
5001 Choral Conducting Document (3)
5002 Non-Thesis Graduation Completion (3-15)
5010 Organ Literature Seminar (3)
5012-32-32 Pedagogy of Voice (2, 3-2)
5020 Piano Literature Seminar (3)
5021 Vocal Literature Seminar (3)
5040 Vocal Literature Seminar (3)
5050 Graduate Recital (3)
5051 Opera Performance (3)
5053 Vocal Chamber Music Performance (3)
5055 Choral Conducting Performance (3)
5054 Lecture-Recital (3)
5056-5056 Practicum for Instrumental Conductors (1, 1-3)
Organizational Psychology Program
See Graduate School

Philosophy (745)

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.

Areas of Study:

Analytical Studies: See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

Introduction to Philosophy: Human Nature and Values (4)

Introduction to Philosophy: Consciousness and Reality (6) May be taken before 1510.

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.

2310-20 Elementary Logic (4, 4) Traditional and modern deductive logic. Informal fallacies, uses of language, definitions. 2310 is recommended as introductory for students with mathematical aptitude. 2320—inductive reasoning, elements of statistical methods, and statistical inference.

2311 Ancient Western Philosophy (4)

2312 Medieval Philosophy (4)

2313 Seventeenth- and Eighteenth-Century Philosophy (4)

2314 Nineteenth- and Early Twentieth-Century Philosophy (4)

2315 Early Modern Philosophy (4) Survey of recent inaugurating philosophy.

2370 Russian Philosophical and Theological Thought (4) (Same as Russian 2370 and Religious Studies 3270.)

2371-12 American Philosophy (4, 4) Colonial to early 19th century; 3312—Late 19th century to late 20th century.

2380 Philosophy of Law (4) Nature, sources, function of law.

2390 Philosophy of History (4) Speculative and critical aspects of history.

2410 Philosophical Ideas in Literature (4) Philosophical aspects of philosophy of history.

2420 Social Ethics (4) Survey of standard topics pertinent to natural science.

2430 Social Philosophy (4) Survey of standard topics pertinent to social policies and institutions.

2431 Introduction to Philosophy of Science (4)

2500 Marxsim as Philosophy (4)

2510 Social and Political Philosophy (4) Philosophical problems relating to politics, economics, education, law, religion, and the family.

2511 Contemporary Issues (4)


3740-50 Conceptual History of Science (4, 4) 3740: Early Scientific Revolution. Historical evolution of thought in astronomy, mechanics, and philosophy of nature up to Newton. 3750: The development of conceptual frameworks in the Newtonian synthesis. Evolution of thought on the nature of matter and energy, light and color, and on life. Prereq: 5 hrs of physical science or consent of instructor.

3770 Introduction to Philosophy of Science (4) Standard topics in philosophy of science: scientific method, the nature of theoretical and empirical knowledge, scientific explanation, measurement. No background in physics or mathematics assumed.

3810 Introductory Symbolic Logic (4) Techniques for formal analysis of deductive reasoning (propositional logic and quantification theory).

3910 Continental Aesthetics (4) Philosophical development of modern art.

4000 Special Topics (4) A 4-credit student- or instructor-initiated course to be offered at convenience of department. Subject matter to be determined by mutual consent of students and instructor with approval of department. Prerequisites to be deter- mined by department. May be repeated for credit.

4101 Foreign Study (1-16) See page 183.

4102 Off-Campus Study (1-16) See page 183.

4103 Independent Study (1-16) See page 183.

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

4130 Intermediate Ethics (4) Topics in metaethics or ethics.

4230 Theoretical Issues in Medical Ethics (4) 4370—Prereq: 2310 or 3611 or consent of instructor.

4370 Theoretical Issues in Medical Ethics (4) (Same as Religious Studies 4370.)

4410 Logic (4) Prereq: 4 hrs of philosophy or consent of instructor.

4420 Aristotle (4) Prereq: 8 hrs of philosophy or consent of instructor.

4450 Continental Rationalism (4) Prereq: 8 hrs of philosophy or consent of instructor.

4500 Classical Indian Systems of Philosophy: The Mahabha (4) (Same as Religious Studies 4320.)

4510 Intermediate Ethics (4) Topics in metaethics or ethics.

4630 Philosophy of Language (4) Prereq: 8 hrs of philosophy or consent of instructor.

4670 University Ethics (4) Prereq: 8 hrs of philosophy or consent of instructor.

4670 Philosophy of Language (4) Prereq: 8 hrs of philosophy or consent of instructor.

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Science 107

The undergraduate program in physics is designed to give the student a wide background which will permit ready
specialization in various areas such as nuclear physics, solid state physics, high energy physics, molecular physics, etc.

Students planning to major in physics are urged to consult advisors in the Department of Physics prior to registration in freshman year with regard to selection of proper first course in physics.

Major: Physics 1318-28-36 and Math 1450-60-65 are prerequisites to a major in physics which includes the following courses:


It is suggested that students also take Chemistry 1120-30, 2111-21-31, 2129-29-39, and 12 hours of an approved biological science.

Minor: A minor in Physics shall consist of Physics 2100-20-30 or 2130-28-38 and 15 hours of physics courses and astronomy courses numbered 3000 and above. Substitution provisions in the major statement also apply to the minor.

An Engineering Physics Curriculum is also available for students whose major falls outside the physical sciences. May be taken out of sequence only if approved by advisor. It is recommended that the courses be taken in sequence. Coreq: Math 1840-50-60.

A minor in Physics shall consist of Physics 2100-20-30 or 2130-28-38 and 15 hours of physics courses and astronomy courses numbered 3000 and above. Substitution provisions in the major statement also apply to the minor.

An Engineering Physics Curriculum is available for students whose major falls outside the physical sciences. May be taken out of sequence only if approved by advisor. It is recommended that the courses be taken in sequence. Coreq: Math 1840-50-60.

A minor in Physics shall consist of Physics 2100-20-30 or 2130-28-38 and 15 hours of physics courses and astronomy courses numbered 3000 and above. Substitution provisions in the major statement also apply to the minor.

An Engineering Physics Curriculum is available for students whose major falls outside the physical sciences. May be taken out of sequence only if approved by advisor. It is recommended that the courses be taken in sequence. Coreq: Math 1840-50-60.

A minor in Physics shall consist of Physics 2100-20-30 or 2130-28-38 and 15 hours of physics courses and astronomy courses numbered 3000 and above. Substitution provisions in the major statement also apply to the minor.

An Engineering Physics Curriculum is available for students whose major falls outside the physical sciences. May be taken out of sequence only if approved by advisor. It is recommended that the courses be taken in sequence. Coreq: Math 1840-50-60.

A minor in Physics shall consist of Physics 2100-20-30 or 2130-28-38 and 15 hours of physics courses and astronomy courses numbered 3000 and above. Substitution provisions in the major statement also apply to the minor.

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A minor in Physics shall consist of Physics 2100-20-30 or 2130-28-38 and 15 hours of physics courses and astronomy courses numbered 3000 and above. Substitution provisions in the major statement also apply to the minor.
their role in physical activities, particularly sports. Discussion of these ideas will emphasize physics, particularly mechanics and heat, as introduced. Linear and angular motion, momentum, force, work, and energy. 4 hrs lecture-demonstration.

1910 Physics of Music (M) Production, transmission, and reception of sound waves. Frequency, intensity, timbre. Basic acoustics of instruments and voice. 3 hrs lecture and 3 hrs laboratory.

1920-30 Elements of Physics (4, 4, 4) 2210-20-30 Mechanics; properties of fluids, heat; 2220- Elastodynamics 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. Must be taken in sequence. Prerequisite: Math 1350 or consent of instructor. 3 hrs of lecture and 3 hrs of laboratory.

2240-50 Elements of Physics for Architects (4, 4) 2246- Statics, dynamics, properties of fluids, heat, and thermodynamics, atomic physics, nuclear physics. Math 1580 or equivalent required. 20-30 to 20-50. Electrodynamics and magnetism, radiation and energy topics. Basic physical principles with applications particularly as applied in architecture. Limited to students in School of Architecture. Should be taken in sequence. 3 hrs of lecture and 3 hrs of lab.

2110-20-30 Fundamentals of Physics: Electricity, Waves, and Optics, Modern Physics (3, 3, 3) Required of all engineering students. 2110- Electricity, 2120- Waves and Optics, 2130- Modern Physics. Must be taken in sequence. Prerequisite: 2110-20-30 and 2220-20-30, and Engineering 1310-20-20, 2318-20. 3 hr lecture-discussion, 2 hrs of lab per week.

2120-23 Honors: Fundamental Physics: Electricity, Waves, and Optics, Modern Physics (4, 4, 4) Honors course designed for selected students admissible on the basis of performance. 4 hrs of lecture-discussion, 4 hrs of laboratory-recitation per week.

2150 Mechanics (5) Statics, kinematics, Newton's laws. Axioms of mechanics, conservation of momentum, 3 hrs lecture, 2 hrs of laboratory-problem sessions. Prerequisite: Math 1580 or equivalent.

2150-20-30 Mechanics (3, 3, 3) 3210-Statics, kinematics, and dynamics of a particle; 3220- Statics, kinematics, and dynamics of a rigid body. Hamiltonian equations of motion. Must be taken in sequence.

3210 Heat and Thermodynamics (3) Concepts of temperature and heat; laws of thermodynamics; applications to simple, heat engines. 3 hrs of lecture and 3 hrs of laboratory.

4160-20-30 Concepts of Modern Physics (3, 3, 3) Modern ideas of atomic structure, nuclei, radiation, particles, and radiation. Not for credit for physics majors and minors. Prerequisite: 2110-20-20 or consent of instructor. 3 hrs of lecture and 3 hrs of laboratory.

4310-20-30 Physical Measurements (3, 3, 3) Laboratory measurement of some physical quantities. Theory supplied where necessary. Prerequisite: 4160-20-20 or 2210-20-20, or consent. 3010H or 3010 and 3030 3 hrs of lecture and 3 hrs of laboratory.


4310-30 Introduction to Atomic and Nuclear Physics (3, 3, 3) 3710- Special relativity and electromagnetic radiation, quantum mechanics, particle detectors. 3720- Nuclear physics. Prerequisite: Math 2860 and Physics 2318-20 or equivalent. 3 hrs of lecture and 3 hrs of laboratory.

4400 Foundation of Physics (3) Selected topics from general relativity, quantum theory, and particle physics. Prerequisite: One year of graduate physics and consent of instructor. Required of M.A.C.T. candidates.

4510-20 Introduction to Quantum Mechanics (2, 2) Introduction to fundamental principles of quantum mechanics and their applications to atomic, molecular, and nuclear physics. Prerequisite: Math 2860 or equivalent. 3 hrs of lecture.

4610 Elementary Nuclear Physics (2) General principles of nuclear structure, nuclear reactions, nuclear models, nuclear reactions, nuclear models, and applications of nuclear physics. Prerequisite: Math 2860 or equivalent. 3 hrs of lecture.

4710-20-30 Interaction of Charged Particles and Matter (3, 3, 3) Interaction of charged particles with matter, radiation quantities and units, point detectors, nuclear properties. Experiments illustrate the principles of the course. Prerequisite: 4710-20-30 or consent of instructor. 3 hrs of lecture and 3 hrs of laboratory.

4820-20 Electromagnetic Theory and Magnetism (4, 4) Transfer of energy and momentum; radiation, waves, interference, diffraction and polarization; classical field theory; relationships among continuous and radiant energy. Prerequisite: Math 2860 or equivalent. 4 hrs of lecture and 3 hrs of laboratory.

5090 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of department.

4040 Foundation of Physics (3) Selected topics from general relativity, quantum theory, and particle physics. Prerequisite: One year of graduate physics and consent of instructor. Required of M.A.C.T. candidates.

4510-20 Introduction to Quantum Mechanics (2, 2) Introduction to fundamental principles of quantum mechanics and their applications to atomic, molecular, and nuclear physics. Prerequisite: Math 2860 or equivalent. 3 hrs of lecture.

4610 Elementary Nuclear Physics (2) General principles of nuclear structure, nuclear reactions, nuclear models, nuclear reactions, nuclear models, and applications of nuclear physics. Prerequisite: Math 2860 or equivalent. 3 hrs of lecture.

4710-20-30 Interaction of Charged Particles and Matter (3, 3, 3) Interaction of charged particles with matter, radiation quantities and units, point detectors, nuclear properties. Experiments illustrate the principles of the course. Prerequisite: 4710-20-30 or consent of instructor. 3 hrs of lecture and 3 hrs of laboratory.

4820-20 Electromagnetic Theory and Magnetism (4, 4) Transfer of energy and momentum; radiation, waves, interference, diffraction and polarization; classical field theory; relationships among continuous and radiant energy. Prerequisite: Math 2860 or equivalent. 4 hrs of lecture and 3 hrs of laboratory.

5090 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of department.

GRADUATE General requirements for the master's degree and doctoral program are found in the Graduate Catalog.

5000 Thesis Preparation

5110-30-30 Interaction to Theoretical Physics (3, 3, 3) Interaction of Charged Particles and Matter (3, 3, 3)

5110-20-30 Advanced Modern Physics (3, 3, 3)

5110-20-30 Advanced Dynamics (3, 3, 3)

5110-20-30 Electromagnetic Theory (3, 3, 3)

5440 Experimental Methods of Infrared and Raman Spectroscopy (3)

5110-20-30 Advanced Thermodynamics and Statistical Mechanics (3, 3, 3)

5150-20-30 Mathematical Methods in Physics (3, 3, 3)

5450 Numerical Methods in Physics (3)

5720 Physics of Polyatomic Molecules (3)

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

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

5990 Seminar (1) 6000 Doctoral Research and Dissertation

6110-20-30 Quantum Mechanics (3, 3, 3)

6110-20-30 Nuclear Structure (3, 3, 3)

6130 Electromagnetic Theory of Light (3)

6320 Special Relativity (3)

6330 General Relativity (3)

6420 Advanced Topics in Classical Theory (3)

6450 Advanced Topics in Quantum Theory (3)

6520-10-20 Electrical Conduction In Gases and Plasma Physics (3, 3, 3)

6610 Interaction of Electrons with Gases (3, 3, 3)

6620 Interaction of Radiation with Matter (3, 3, 3)

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

6910 Vibrational Problems in Molecular Spectroscopy (3)

6510 Molecular Vibrational-Rotation Theory (3)

Political Science (801)


Associate Professors:

R. D. Cunningham, Ph. D. Indiana; J. W. Dodd, Ph. D. Wyoming; M. S. Columbo, Ph. D. Pennsylvania; G. C. Evans, Ph. D. Columbia; A. H. Hopkins, Ph. D. State University of New York; R. L. Patton, Ph. D. Yale; T. Nold-Simpson, Ph. D. Johns Hopkins; D. M. Welborn, Ph. D. Texas.

Assistant Professors:

W. Fierman, Ph. D. Harvard; M. R. Figge, Ph. D. Oklahoma; K. K. Friedman, Ph. D. Colorado; R. B. Cunningham, Ph. D. Indiana; J. W. Dodd, Ph. D. Wyoming; M. S. Columbo, Ph. D. Pennsylvania; G. C. Evans, Ph. D. Columbia; A. H. Hopkins, Ph. D. State University of New York; R. L. Patton, Ph. D. Yale; T. Nold-Simpson, Ph. D. Johns Hopkins; D. M. Welborn, Ph. D. Texas.


Studies.

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GPA of at least 3.0. least 3.3 in PoliticalScience, and an overall Science, the student must have a GPA of at

Honors concentration is usually a two year program and consists of 56 hours, including : Upper-division courses on the Triad list may be included. The triad 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 24 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.

(3) Twelve 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. Honors in Political Science: The Honors concentration encourages highly motivated students to obtain a superior liberal education and more rigorous preparation in the discipline. Admission is selective. The Honors concentration is usually a two year program and consists of 36 hours, including:

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. Forty-eight additional hours in political science courses, including:
   a. Political Science 3919-28-38
   b. Political Science 4918-28-38
   c. 24 additional hours numbered 3000 and above.

These 48 hours must include 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. Upper-division courses on the Triad list may be included.

To graduate with Honors in Political Science, the student must have a GPA of at least 3.3 in political science, and an overall GPA of at least 3.0.

College of Liberal Arts


United States Government and Politics/Public Administration

3020 Introduction to Political Science (4) A variety of the basic substantive concepts and problems of political science.
3120 United States Government and Politics (4, 4) A principle of the Constitution, federalism, separation of powers, campaign and elections, partisan and sectional interest, and the political process.
3220 United States Congress (4, 4) Organizations, executive, legislative, judiciary, and bureaucracy at the state, city, and local level.
3138-19 Honors: United States Government and Politics (4) Topics in American government. Students of superior ability and interest. Enrolls into 3138 require a superior aptitude test; students accepted will be accepted on the basis of placement scores and high school ranking, state 6 in 15 is necessary for entrance into 3138.
3230 Tennessee Government and Politics (4) An analysis of political institutions and processes in Knox County.

United States Government and Politics/Public Administration

3045 United States Constitutional Law: Sources of Power and Restriction (4) Analysis of judicial review, constitutional powers of President and Congress, federalism, sources of regulatory authority, and constitutional protection of civil rights. 210-20 desires as preceding courses.
3050 Minority Group Politics in the United States (4) Content varies from quarter to quarter. May be repeated to a maximum credit of 8 hours with consent of department.
3055 Introduction to Public Administration Organization and Management (4) Organization and management of public and private sectors, organizational theory, leadership, personnel management; administrative responsibility, 210-20 desirable as preceding courses.
3110 Public Administration in the Policy-Making Process (4) Public bureaucracies and the policy-making processes. Their role in policy formulation, implementation, and evaluation. Emphasis on selected theoretical and policy issues, and state administration. State government is a function of the institutions and processes of state government. Federal government is a function of the institutions and processes of the federal government. Students of superior ability and interest. Enrolls into 3110 require a superior aptitude test; students accepted will be accepted on the basis of placement scores and high school ranking, state 6 in 15 is necessary for entrance into 3110.
3112-20 United States Government and Politics (4, 4) May be repeated to a maximum credit of 8 hours with consent of department.
3170 State Politics (4) Focus on formal and informal political institutions and processes of state government, including the executive, legislative, and judiciary branches of government. The role of state government in the formulation and administration of public policies is emphasized, a function of state government. 3110 desirable as preceding courses.
3175 The Urban Polity (4) Analysis of political institutions and processes in metropolitan areas (same as Urban Studies 3750).
3176 Urban Policy Process (4) Analysis of urban problems and policies in metropolitan areas.
3180 American Political Thought (4) Examination of selected theoretical and policy issues concerning political thought in America, emphasizing their development and relationship to particular social and political events. 210-20 desirable as preceding courses.
4133 Administrative Politics, Attitudes, Opinions, and Communication (4) Roles of government, executive, legislative, and administrative branches of government in developing and implementing policies. 210-20 desirable as preceding courses.
4140 Legal System and Administrative Procedure (4, 4) Principles of administrative procedure, the effect of administrative decisions on individuals, and the judicial role in the resolution of conflicts.
4150 Presidential, Congress, and Public Policy (4, 4) The Presidency and Congress in the formulation and implementation of public policies.
4165 Public Management: Policy Analysis (4) Techniques of policy analysis, and processes of the U.S. Presidency.
4166 The Judicial Process (4, 4) The study of courts as components of political systems, and pub-
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<td>Studies in Ancient Political Thought</td>
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<td>Use of methodology, nature, character, and functions of research design, data collection, and statistical techniques</td>
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<tr>
<td>3090</td>
<td>Introduction to Political Analysis</td>
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<tr>
<td></td>
<td>Methodology and application in policy making, research for seniors, primarly for majors.</td>
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<tr>
<td>2244-28</td>
<td>The Systematic Study of Politics (4, 4) The development, scope, methods, and theory of political analysis.</td>
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<td>3002</td>
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<td>From Augustine to Luther: emphasis on problems and principles</td>
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<td>3090</td>
<td>Introduction to Political Analysis</td>
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<td></td>
<td>Emphasis upon imperialism, intervention, and principles.</td>
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<td>4815</td>
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<td>4918-28</td>
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<td>5170-30</td>
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**Psychology (630)**

- **Professors:**
  - W. H. Calhoun (Head), Ph.D. California
  - R. E. Deutsch, Ph.D. Ohio State
  - J. F. Byrne, Ph.D. Tennessee
  - J. C. Cohen, Ph.D. California
  - J. E. Croner, Ph.D. Emory
  - F. D. Denenberg, Ph.D. Georgia
  - J. F. Dalgleish, Ph.D. California
  - S. J. Harned, Ph.D. Johns Hopkins
  - J. W. H. St鮨evy, Ph.D. Chicago
  - R. D. Kline, Ph.D. Illinois
  - J. L. Lishner, Ph.D. Washington
  - H. J. Fine, Ph.D. Syracuse
  - M. G. Johnson, Ph.D. Johns Hopkins

- **Associate Professors:**
  - J. M. Barlow, Ph.D. Tennessee
  - H. R. Friedman, Ph.D. Tennessee
  - M. L. Johnson, Ph.D. Johns Hopkins
  - J. K. Kendrew, Ph.D. Tennessee
  - J. E. Lawler, Ph.D. North Carolina
  - R. D. L. Kendrew, Ph.D. Johns Hopkins
  - M. J. O'Connell, Ph.D. Pennsylvania
  - J. S. Ray, Ph.D. Pennsylvania
  - P. E. Sandman, Ph.D. Utah
  - C. L. Travis, Ph.D. Tennessee
  - L. R. Wilson, Ph.D. Pennsylvania
  - D. F. Purdie

- **Assistant Professors:**
  - N. W. Daughn, Ph.D. Tennessee
  - E. J. Fisher, Ph.D. Tennessee
  - D. S. Freeman, Ph.D. Michigan
  - S. R. Freud, Ph.D. Georgia
  - K. R. Leib, Ph.D. North Carolina
  - J. E. Lawler, Ph.D. Michigan State
  - M. A. Wood, Ph.D. Syracuse

- **Visiting Assistant Professor:**
  - D. K. E. van der Linden, Ph.D. California

**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 areas such 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 or 4150, a practicum in laboratory, field, or practicum courses, and 32 or more hours of upper-division psychology courses.

**Concentration in Behavioral Psychology**

- Designed to prepare students for advanced work in the scientific, professional, and clinical aspects of psychology. Prerequisites to the major include Psychology 2518 and 2518-30, and 28 or more hours of upper-division psychology courses, with 12 hours to be in courses at the 4000 level.

- **Eligibility:** Selection of participants is determined by the departmental Undergraduate Honors Committee. The interested student should apply to the psychology department. Successful applicants usually have a G.P.A. of at least 3.0.

- **Requirements:** Psychology 2500 or 2518 and one other 2000-level course in psychology, plus any one of the following courses: Psychology 3150 or 4150, and 16 hours of upper-division psychology courses.

- **Major:** Minor in psychology shall consist of Psychology 2500 and 2518, and an additional 12 hours of upper-division psychology courses.

- **Eligibility:** All students who plan to major in psychology are admitted to the psychology major. Successful applicants usually have a G.P.A. of at least 3.0. Psychology 2500 or 2518 and one other 2000-level course in psychology, plus any one of the following courses: Psychology 3150 or 4150, and 16 hours of upper-division psychology courses.

- **Eligibility:** Selection of participants is determined by the departmental Undergraduate Honors Committee. The interested student should apply to the psychology department. Successful applicants usually have a G.P.A. of at least 3.0.

- **Requirements:** Psychology 2518 or 2518-30, and any other 2000-level course in psychology, at least 4 hours of upper-division psychology courses, and 28 or more hours of upper-division psychology courses.

- **Eligibility:** All students who plan to major in psychology are admitted to the psychology major. Successful applicants usually have a G.P.A. of at least 3.0. Psychology 2518 or 2518-30, and any other 2000-level course in psychology, at least 4 hours of upper-division psychology courses, and 28 or more hours of upper-division psychology courses.

- **Eligibility:** Selection of participants is determined by the departmental Undergraduate Honors Committee. The interested student should apply to the psychology department. Successful applicants usually have a G.P.A. of at least 3.0. Psychology 2518 or 2518-30, and any other 2000-level course in psychology, at least 4 hours of upper-division psychology courses, and 28 or more hours of upper-division psychology courses.

- **Eligibility:** All students who plan to major in psychology are admitted to the psychology major. Successful applicants usually have a G.P.A. of at least 3.0. Psychology 2518 or 2518-30, and any other 2000-level course in psychology, at least 4 hours of upper-division psychology courses, and 28 or more hours of upper-division psychology courses.
methods, and contributions of the major move-
ments and ideas which define contemporary psy-
chology.
3519-20 Honors: General Psychology (4, 4) First and
second quarters participation is psychological re-
search, either individually or group arranged. Pre-
req: 2515. Second quarter participation is psychologi-
cal research, either individually or group arranged. Pre-
req: 2516. Consent of instructor.
3520 Biological Foundations of Behavior (4) Survey of
theories and research pertaining to the biological
foundations of behavior: general psychology rec-
ommended.
3530 Psychology as a Social Science (4) Introduction to
social behavior and experience in a social context.
3540 Psychology of the Individual (6) Study of indi-
vidual behavior: the progressive changes in behavior
that occur in normal environments: introduction to
personality, developmental abnormalities, and
normal psychology. Recommended: 2540.
3529 Social Psychology (4) General survey of theories,
methods, and research findings on individ-
ual behavior in a social context. Prereq: 3540.
3210 Laboratory in Social Psychology (5) Prereq:
3319. Recommended prereq: 3319.
3510 Psychological Statistics (4) Introduction to basic
statistical methods used in behavioral sci-
ences.
3210 Learning and Thinking (4) Study of theoretical
and empirical tests of learning and thinking. Gen-
eral psychology recommended.
3219 Laboratory in Learning and Thinking (2) Prereq:
3210. Recommended prereq: 3319.
2210 Motivation and Emotion (6) Current theories, ap-
proaches, and their development.
2430 Psychology of Music (6) Introduction to psy-
chological study of musical sounds and instru-
melody, rhythm, and melody, and their relation to
sensation and perception. Recommended prereq: 2540.
2410 Research in Psychology (5) Basic techniques of research in behavioral sciences, including experimentation and normative observa-
tion.
3500 Child Psychology (6) Origin and principles of
behavior in infancy and childhood: physical, intel-
lectual, social, emotional, and language behavior of
the normal child. Recommended prereq: 3319.
3510 Laboratory in Child Psychology (2) Field and
laboratory studies of child development. Prereq: 3500.
3518-20 Human Relations (2, 2, 2) Experience and
study of human relations in groups and small and
large groups. SNC.
3540 Abnormal Psychology (4) Constitutional and
environmental factors in abnormal behavior: neu-
rosis and psychoses. Emphasis on theory and tech-
niques of diagnostic and therapeutic methods.
3540 recommended.
3720 Ecology and Sociology (4) Basic concepts of
ecological psychology. Includes an introduction with spe-
cial reference to controversial issues in applications to
psychology, the social sciences, and the arts. (Same as Zoology 3720.)
4104 Paraprofessional Study (1-6) See page 182.
4102 On-Campus Study (1-18) See page 183.
Psychology 4103, 4107, 4109, and 4110 are
courses of independent study and research taken by
consent of instructor only. Course requirements, meeting times, and grading
procedures are established by agreement between the student and a member of
the psychology faculty. For each credit hour, a student may expect to spend from two
to three hours per week for the quarter. No more
than 24 credit hours may be earned in courses 4103, 4107, 4109, 4110 combined.
4102 Independent Study (1-18) May be repeated. Maximum credit 18 hrs.
4107 Experience in Individualized Instruction (1-6)
May be repeated. Maximum credit 12 hrs. Granted by letter grade only.
Prereq: Consent of instructor.
4106 Undergraduate Research (1-18) May be re-
peated for credit to maximum of 16 hrs. Prereq:
Consent of instructor.
4110 Undergraduate Participation in Community Research (1-18) May be repeated. Maximum credit 16 hrs.
4210 Topics in Social Psychology (4) Intensive analy-
sis of selected research topics. Prereq: 3120 or
Sociology 3130. (Same as Sociology 4120.)
4150 Probability Models in Psychology (4) Intro-
duction to use of probability models in theory of binary
and different psychological processes: different popula-
tions with specific psychological char-
acteristics: individual psychological behavior: testing of
hypotheses in human and animal behavior.
Prereq: Math 1560 or consent of instructor.
4280 Sensory Processes and Perception (5) Survey of
sensory and perceptual processes with emphasis on
acuision and vision. Prereq: 3120, 2420 recom-
nended.
4239 Laboratory in Sensory Processes and Per-
ception (5) Prereq: Coreq: 4230.
4430 Organizational-Industrial Psychology (3) Cannot be taken for credit by students who have
completed Management 4460. (Same as Management 4460.)
4510 Personality Theories (4) Prereq: 3500.
4520 Personality and Social Systems (4) Prereq:
2540.
4610 Group Processes (4) Study and exploration of
theory and techniques of group process and facili-
tation. These courses are offered in 4610 and
4820. Prereq: 3319 or consent of instructor.
4830-32 Seminar in Group Processes (3, 3) Didactic
and laboratory exploration of individual and group
processes. Prereq: 4610 and consent of instructor.
4640 Psychological Tests and Measures (4) Theory
and construction of individual and group measures. Survey of various methods of assessment of intelli-
genius, personality, achievement. Prereq: 2540, and
dependent achievement. Prereq: 3150.
450 Symbolic Process Models (4) Logic of signs and
symbols; process-oriented approaches to learning: mem-
ory, problem solving, and concept formation; na-
ture, use, and development of language. Prereq:
2430.
4660 The Psychology of Language (4) Theories and
description of phonology, syntax, and semantics as
applied to psychology and related areas. Prereq:
4640 or Linguistics background recommended.
4670 Cognitive Development (4) Theory and re-
search on development of language and thinking in
children and adolescents. Prereq: 4610 or 3319.
4710 Physiological Psychology (4) Nervous system
and physiological correlates of behavior. Prereq:
One year of biology or zoology and psychology
2410.
4711 Physiological Psychology Laboratory (4) Labo-
atory studies of nervous system and physi-
ological correlates of behavior: Coreq: 4710.
4780 Comparative Animal Behavior (4) Methods and
principles of comparative animal behavior. Prereq:
2790.
4720 Comparative Animal Behavior Laboratory (4) Lab-
oratory and field studies. Coreq: 4720. (Same as Zoology 2790.)
4729 Evolutionary and Ontogenetic Study of Behavior (4)
Genetic, evolutionary, ecological, and devel-
opy is encouraged to study the evolution and
dynamics of various vertebrates. Prereq: Con-
sent of instructor.
4780 Psychology and Current Issues (4) Research and
teaching related to current issues, 4 credit hrs per week. Prereq: Consent of
instructor. May be repeated. Maximum credit 6 hrs.
4781 History and Systems of Psychology (4) Pre-
req: 6 hrs of upper-division psychology.
4850 Learning Theories (4) Historical and theoreti-
cal development of learning models. Prereq: 3101.
4890 Programmed Learning (2) Same as Edus. C 42
4790 Contemporary Research in Behavior of Women (6) Study of interaction of cultural and
biological factors in determining the behavior of women, with emphasis on psychologi-
cal mechanisms involved.
4900 Afro-American Psychology (4) Review and analy-
sis of psychological literature on Afro-
Americans. Prereq: Consent of instructor.
4909-4498-4506 Honors: Reading and Research (4, 4, 4)
Honors candidates only.
4978-4986 Honors: Senior Reading and Research (4, 4, 4) Honors candidates only.
GRADUATE
General requirements for the master's degree and doctoral degree are given in the
Graduate Catalog.
5003 Thesis
5002 Non-Thesis Graduate Comprehensive (3-18)
5017 Colloquium in Ethology (1)
5019 Research Practicum (1-0)
5038 Research Practicum in Applied Psychology (1)
5070 Seminar in College Teaching (2)
5079 Practicum in College Teaching (2)
5100 Developmental Psychology (3)
5108 Developmental Assessment (3)
5110 Clinical Aspects of Human Sexuality (3)
5111-1313 Seminar in Current Issues in School Psychology (1, 1, 1)
5140-69-69 Psychodiagnostic Assessment, 3, 3, 3
5159-56-59 Practicum in School Psychology 1, 2, 3
5170-80-90 Practicum in Organizational Psychol-
yogy (2, 2, 2)
5230 Topics in Developmental Psychology (3)
5210 Readings in Psychology (1)
5230 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)
5300 Special Problems in Psychology (4)
5300 Special Problems in Psychology (5)
5019 Field Work in School Psychology: Level I (2)
5035 Behavioral Interventions (3)
5040 Max-Neef Therapy (2)
5060-69-70 Seminar in Psychology 3, 3, 3
5400 Physicopsychics and Scaling Methods (3)
5410-47-50 Advanced Psychological Statistics (3, 3)
5410-20-30 Psychotherapy (3, 3, 3)
5411-13-14 Psychotherapy: Elective Concentration Learning Laboratory (3, 2, 2, 2)
6419-20-30 Psychotherapy Practice (1-3, 1-3, 1-3)
6540-40 Advanced Psychometrics (3, 3)
5490 Continuing Education in Professional Mental Health (1-4)
4541 Field Placement in Clinical Psychology Level 1 (1-4)
4542 Field Placement in Clinical Psychology Level 2 (1-4)
4543 Field Placement in Clinical Psychology Level 3 (1-4)
6550 Seminar in Psychometrics (3, 3)
5550 Experimental Design (3)
6550 Seminar in Advanced Social Psychology (3)
6575 Seminar in Mental Health Administration (3)
6580 Assessment of Human Service Organizations (3)
6580 Organizational Development in Human Service Settings (3)
6585 Practicum in Organizational Development in Human Service Settings (2, 2, 2)
6590 Field Work in Industrial Psychology (1-5)

Religious Studies (863)

Professors: R. E. Gundry (Chair), B.D. Crovetto (Assistant Professor), D. O. Dunlop, Ph.D. Harvard; R. V. Norman, Jr. (Associate Professor), Ph.D. Chicago;

Associate Professors: K. W. Hursting, Ph.D. Union; D. E. Loewe, Ph.D. Vanderbilt.

Assistant Professor: R. W. Earl, Jr., Ph.D. Vanderbilt.


Instructor: B. F. Ong, Ph.D.

COURSES AND LABORATORIES

Major: Two options are available in religious studies. One religious studies 2000-level course is a prerequisite for either option, and Religious Studies 4550 is required in both options.

The basic option consists of 36 hours of courses at the 3000 level or above (including 4500) with a minimum of 12 hours selected from courses listed below under History and Literature of Religions and a minimum of 12 hours selected from courses listed below under Problematic of Religion. Majors are invited to discuss their programs with a member of the religious studies faculty.

The student-initiated option is recommended for students who plan to pursue graduate study in religion or a closely related field. Further details are available in the department office, located at 501 McClung Tower, or from any member of the religious studies faculty. Writing and Literature of Religion: 3011, 3201, 3206, 3710, 3711, 3710, 3710, 3720, 3720, 3730, 3780, 3780, 4101, 4102, 4111, 4237, 4270, 4410, 4540, 4541, 4920, 4920, 4950, 4950.

Minor: Twenty-four hours of courses at the 3000 level and above is suggested that the students minor in religious studies discuss their programs with a member of the department faculty.

1010 Introduction to Religion (4) Introduction to brief religions in a variety of cultural settings.

1020 Current Themes in Religious Studies (4) Introduction to the study of religion through consideration of selected contemporary themes, problem areas, variable content. May be repeated. Maximum of 3 credit hours.

2010 Introduction to the World (4) Introduction to the study of religion through selected historical traditions, East and West.

2011 Introduction to Ancient Near Eastern Religions (4) Introduction to study of religion through selected ancient Near Eastern and Mediterranean traditions.

2012 Issues in Religious Studies (4) Introduction to study of religion through selected religious problems.

HISTORY AND LITERATURE

4850-70-98 History of Western Religious Thought and Institutions (2, 2, 3) 2000—First century; 3000—6th century in 10th; 4000—135 A.D. (Same as History 4850-70-98.)

4910 Ancient Israel's Historical and Political Traditions (4) (Same as History 4900-1600.)

4915 The Rise of Judaism (4) (Same as History 4915-1600.)

4916 Religious Traditions of Ancient Egypt (4) Religious and cultural traditions of ancient Egypt from Old Kingdom to Hellenistic period.

4917 Religious Traditions of Ancient Mesopotamia (4) Religious and cultural traditions of ancient Babylonians, Assyrians, and Anunnaki.

4930 Early Greek Mythology (3) (Same as Classics 4930)

4932 Greek Mythology in the Classical Period (3) (Same as Classics 4932)

4935 Roman Mythology (3) (Same as Classics 4935)

4970 Russian Philosophical and Theological Thought (4) (Same as Russian 4970 and Philosophy 4970)

3131 Images of Jesus (4, 4) Introduction to ancient and modern portraits of Jesus, understanding of Jesus within their cultural milieu. Must be taken in sequence. 3 credit hours.


3420 Judaism in the Common Era. (3) Survey of
solar, lunar, and communal.

Myths and rituals are transmitted among preliterate peoples through a specific motif, of interrelation of myths, symbols, and rituals. Initiations, and ascensions. of recurrent forms, themes, and patterns in history.

PROBLEM OF RELIGION

Credit of 12 hrs.

Prereq: 3650-60-71. May be repeated. Maximum credit of 12 hrs. Students only, except by consent of department.

4670 Topics in Eastern Religions (4) Selected figures. May be repeated. Maximum credit of 12 hrs.

4310 Jesus and Paul Compared (4) Jesus' teaching and culture, interaction with modern cultures. As Philosophy 4370.

4370 Theoretical Issues in Medical Ethics (4) Major problems and themes in European and American religious thought between 1800 and the beginning of World War II.

3705 Contemporary Religious Thought (3) Major issues, themes, and thinkers.

3760 Eastern Religions and Western Thought (3) Critical consideration of influences of Hindu and Buddhist philosophy on Western thinkers.

3750 The Literature of Dissent (3) Critical of religion to history, methods, and theories of science.

3705 Sociology and Religious Change (3) Change; the religious implication of major historical changes and movements. May be repeated once for credit.

4540 Social and Religious Change (3) May be repeated once for credit.

3705 Sociology of Religion (3) Historical and critical examination of formation and development of black religious thought and institutions. Seniors and graduate students only, except by consent of department. Staff of department will participate. Specific topics, e.g., native American religious studies; staff of department will participate. Specific topics, e.g., native American religious studies.

3715 Religious Thought in the Nineteenth Century (3) Major problems and themes in European and American religious thought from perspectives of modern philosophy.

3740 Issues in Science and Religion (3) Relation of religious thought to science; basic theories and their application in social problems.

3600 Religious and Philosophical Issues in Medicine (4) Theoretical issues and social problems. May be repeated once for credit. Staff of department will participate.

3610 Religious Ethics (4) (Same as Philosophy 4600.) Historical and critical survey of religious ethics; basic theories and their application in social problems.

3611 Religious and Philosophical Issues in Medical Ethics (4) Ethical issues in medicine such as abortion, euthanasia, human experimentation, and the doctor-patient relationship. (Same as Philosophy 4611.)

3612 Topics in Religious Ethics (4) Examination of particular theoretical theories and systems of religious ethics. May be repeated once for credit.

3685 Philosophy of Religion (4) (Same as Philosophy 4650.)

3720 Initiations of religious thought by transmission of myths, symbols, and rituals. Examination of problems of literary criticism. Relation of religious language to certain forms of human expression (symbol, metaphor, myth, image) identified in study of literature.

3706 Eastern Religions and Western Thought (4) Critical consideration of influences of Hindu and Buddhist philosophy on Western thinkers.

3705 Sociology of Religion (3) Historical and critical examination of formation and development of black religious thought and institutions. Seniors and graduate students only, except by consent of department. Staff of department will participate. Specific topics, e.g., native American religious studies; staff of department will participate. Specific topics, e.g., native American religious studies.

3715 Religious Thought in the Nineteenth Century (3) Major problems and themes in European and American religious thought from perspectives of modern philosophy.

3740 Issues in Science and Religion (3) Relation of religious thought to science; basic theories and their application in social problems.

3600 Religious and Philosophical Issues in Medicine (4) Theoretical issues and social problems. May be repeated once for credit. Staff of department will participate. Specific topics, e.g., native American religious studies; staff of department will participate. Specific topics, e.g., native American religious studies.

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3600 Religious and Philosophical Issues in Medicine (4) Theoretical issues and social problems. May be repeated once for credit. Staff of department will participate. Specific topics, e.g., native American religious studies; staff of department will participate. Specific topics, e.g., native American religious studies.

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3740 Issues in Science and Religion (3) Relation of religious thought to science; basic theories and their application in social problems.

3600 Religious and Philosophical Issues in Medicine (4) Theoretical issues and social problems. May be repeated once for credit. Staff of department will participate. Specific topics, e.g., native American religious studies; staff of department will participate. Specific topics, e.g., native American religious studies.

3715 Religious Thought in the Nineteenth Century (3) Major problems and themes in European and American religious thought from perspectives of modern philosophy.

3740 Issues in Science and Religion (3) Relation of religious thought to science; basic theories and their application in social problems.
2130 or French, Italian, or Spanish 2520.

Students pursuing a minor are strongly advised to consult with a departmental adviser. Courses which are the equivalents of the foregoing may be substituted with consent of the department; but courses in French literature in English translation may not be counted toward either a major or a minor.

1111-1220 Elementary French (3, 3, 3) The sequence should precede courses for students intending to take upper-division courses in French. Must be taken in sequence. 3 hours.

1130-1220 Intermediate French (3, 3, 3, 3) Dialect will vary depending on instructor. 6 class meetings and 2 laboratory periods.

1510-20 Spoken Arabic (4, 4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

1110-2030 French Literature In English Translation (4) Survey from origins to modern period of major Islamic literatures, especially Arabic, Persian, and Turkish. Prereq: 3210. The Arabian Nights, the Rubaiyat of Omar Khayyam, and Gibran's The Penitent.

2130 or 2520 in basic skills of reading, speaking and writing French.

3110-20-30 or 3810-20-30 (aspects of French literature, 9 hours) French literature, both written and oral; exercises in free translation into English; 4002-Consecutive Translation (3, 3, 3) No foreign language credit.

2130 or 2520 in basic skills of reading, speaking and writing French.

2110-20-30 or 3810-20-30 (aspects of French literature, 9 hours) French literature, both written and oral; exercises in free translation into English; 4002-Consecutive Translation (3, 3, 3) No foreign language credit.
ITALIAN (584)

UNDERGRADUATE:
Major: Consists of 36 hours in courses numbered 3110 or above, to include the following (or equivalents, with consent of the department): 3410-20-30 (advanced grammar, composition, and conversation, 9 hours); 3510-20-30 (topics of Italian literature, at least 9 hours); 9 additional hours selected from courses in literature, language, or civilization. Students may substitute Foreign Study (4101) for certain courses; students with special interests, such as comparative literature, may make certain substitutions with consent of the department.
Minor: Consists of 24 hours in courses numbered 3110 or above, to include the following: 3410-20-30 (advanced grammar, composition, and conversation, 9 hours); 3110-30-30 or 3510-20 (topics of Italian literature, at least 7 hours); 7 additional hours selected from courses in literature, language, or civilization. Courses in Italian literature in English translation may not be counted toward either a major or a minor.

1110-30-30 Elementary Italian (3, 3, 3) must be taken in sequence. Three class meetings and 2 laboratory periods.
1510-20 Elementary Italian (4, 4) must be taken in sequence. 4 class meetings and 2 laboratory periods.
2130-20-30 Intermediate Italian (3, 3, 3) must be taken in sequence. Three class meetings and 2 laboratory periods.
2510-20 Intermediate Italian (4, 4) must be taken in sequence. 4 class meetings and 2 laboratory periods.
2610-30 Panorama of Italian Culture (4, 4) 2610-2620 Italian culture from Roman Times through the 17th century. 2630-2650 Survey of Italian culture in the 18th, 19th, and 20th centuries.
3000 Italian Translation (3) Development of linguistic skills necessary for satisfactory work in courses above 3000. Recommended for students who feel that their knowledge of Italian is limited. Must present appropriate amount of extra work after add deadline. Option of 4 hrs credit for local present amount of extra work above that required for 3 hrs.
3340 The Italian Cinema (3) Italian film masterpieces of such directors as Rossellini, De Sica, Fellini, Pasolini, and cinematography and political relations. The Italian image in America.
3340-3300 Advanced Grammar, Composition, and Conversation (3, 3) Laboratory work, skills, and tapes. Prerequisite: 2130 or equivalent.
3510-20 Aspects of Italian Literature (4, 4) Prerequisite: 2510 or equivalent. Recommended for literature majors.
4010 Italian Drama in English Translation (3, 4, 4) Italian comedies, tragedies, and major works of Masuccetti, Metastasio, Alfieri. Goldoni. 3000--19th century theatre and theater dramas of Goldoni, Petroni, De Filippo, Pirandello. No change in number of credit hrs after add deadline. Option of 4 hrs credit for local present amount of extra work above that required for 3 hrs.
4500-60 Dante and Medieval Culture (3, 3) Readings and lectures in English for students majoring or minoring in either departments. Readings, reprints, and term papers in Italian for students majoring or minoring in Italian. (Same as Comparative Literature 4500-60-70)
4610 Foreign Study (1-16) See page 181.
4780 Portuguese (3) Prerequisite: 3130, 3520, or equivalent.
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4780 Portuguese (3) Prerequisite: 3130, 3520, or equivalent.
4830 Contemporary Portuguese (3) Prerequisite: 3130, 3520, or equivalent.
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primary interest in literature must have a minimum of 8 hours chosen from the following sequences: 3310-20-30, 3610-20, or 3610-20 (aspects of Spanish American literature, 8 hours); 3410 (composition and conversation, 6 hours); 4210 (phonetics, 3 hours); 9 hours of literature at the 4000 level; 3 hours of civilization; sufficient additional hours selected from courses in literature, language, or civilization to fulfill the major requirement. Students whose primary interest is language must have a minimum of 8 hours chosen from the following sequences: 3310-20-30, 3610-20, or 3610-20 (aspects of Spanish American literature, or aspects of survey of Spanish American literature, 8 hours); 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 9 hours of literature at the 4000 level; 3 hours of civilization; sufficient additional hours selected from courses in literature, language, or civilization to fulfill the major requirement. With all of the above options, students may substitute Foreign Study (4191) for certain courses; students with special interests, such as comparative civilization, may make certain substitutions with consent of the department.

Minor: Consists of 24 hours in courses numbered 3300 or above, including a minimum of 8 hours chosen from the following sequences: 3310-20-30, 3610-20, or 3610-20 (aspects of Spanish American literature, or aspects of survey of Spanish American literature, 8 hours); 3410 (composition and conversation, 3 hours); 9 hours of civilization; sufficient additional hours selected from courses in literature, language, or civilization to fulfill the minor requirement. Students pursuing a minor are strongly advised to consult with an advisor.

Courses which are the equivalents of the foregoing may be substituted with consent of the department; but courses in Spanish literature in English translation may not be counted toward the minor.

1518-28 Elementary Spanish (3, 3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hrs and 2 labs.

1518-20 Elementary Spanish (3, 3) This sequence must be taken in sequence. 4 class meetings and 2 laboratory periods.

1528-28 Honors: Elementary Spanish (4, 4) Honors course for students of superior ability. Open to students who have taken Spanish in high school and have a B average and a score of 550 or above on the diagnostic test or conference with the instructor prior to registration. Course is based on the use of the ACT. This class will be held to a maximum of 15 so that each student receives more attention. This class closely follows the high school curriculum during the first year, but will be enriched wherever 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 if they plan to take 1518 with a grade of B or higher may take 1528 instead of 1518.

2510-20 Intermediate Spanish (3, 3) This sequence must be taken in sequence. Students intending to take upper-division courses in Spanish. Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2518-28 Intermediate Spanish (4, 4) Honors course for students of superior ability. Open to students who have taken Spanish in high school and have a B average and a score of 550 or above on the diagnostic test or conference with the instructor prior to registration. Course is based on the use of the ACT. This class will be held to a maximum of 15 so that each student receives more attention. This class closely follows the high school curriculum during the first year, but will be enriched wherever 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 if they plan to take 1518 with a grade of B or higher may take 1528 instead of 1518.

4020-30 Advanced Grammar (3, 3) Prereq: 2130, 2520, or equivalent.

4160-70-80 Advanced Conversation (2, 2, 2) Intensive preparation in preparing students for oral presentations in advanced level Spanish. Students who pass 1518 with a grade of B or higher may take 1528 instead of 1518.

4510 Special Topics in Nineteenth Century Spanish Literature (3) Prereq: 3330, 3520, or equivalent and at least 3.0 on a cumulative year. Open to graduate students.

4618-30 Spanish Literature of Twentieth Century (3, 3) Prereq: 3330, 3520, or equivalent.

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5110-20-30 Old Spanish (5, 5, 5) recommended for literature majors. Not offered for graduate credit.

5118-38 Honors: Readings in Literature (3, 3) Prereq: 3310-20-30. 3 hrs and 2 labs.

5231 The Exemplary Novels, Persiles y Sigismunda (3)

5335-40-50 Studies in Modern Spanish Style (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5450-60-70 Hispano-American Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5631 Spanish American Essay (3)

5632 The Spanish American Short Story (3)

5633 Twentieth-Century Latin American Theatre (3)

5634 Problems in Hispanic Culture (3)

5635 Special Topics in the Spanish Theatre after the Golden Age (3)

5640 American Literature (3, 3)

5711-21 Don Quijote (3, 3)

5730-32-34 Advanced Prose Fiction: the Modern Period (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5750-51-61 Bibliography and Methods of Research in Spanish (3, 3, 3)

5751-61-71 Bibliography and Methods of Research in Spanish (3, 3, 3)

5752-61-71 Bibliography and Methods of Research in Spanish (3, 3, 3)

5810-20-30 Spanish Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5910 Literary Criticism: Foundations of Romance Criticism (3)

5920-30-40 Modern Spanish Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5930-40-50 American Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5940-50-60 American Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5950-60-70 American Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5960-70-80 American Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5980-90-100 American Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

5990-100-110 American Lyric Poetry (3, 3, 3) Prereq: 3330, 3520, or equivalent.

6000 Doctoral Research and Dissertation

Graduate students will be assigned an advisor when they enter the program.
Sociology (915)

Professors: C. B. Plach (Head), Ph.D. North Carolina; D. B. Carter, Ed.D. California; F. C. Flick, Ph.D. Pennsylvania; L. E. Stewart (Vice Chancellor for Planning and Administration), Ph.D. Pennsylvania; W. B. James (Emeritus), Ph.D. Vanderbilt; J. R. Knapp (Emeritus), Ph.D.; H. N. Swain (Emeritus), Ph.D.; S. S. Wilson (Emeritus), Ph.D.


Instructor: S. C. Farmer, Ph.D. California (San Diego).


UNDERGRADUATE

Major: Consists of 36 upper-division hours in sociology. Eight lower-division hours in sociological prerequisites to a major. The minor shall consist of 24 upper-division hours. Eight lower-division hours in sociological prerequisites to a minor.

Social Work: Students contemplating entrance into the field of professional social work will have an opportunity to plan their upper-division programs to this end. Suggested course offerings for students planning a social work career can be obtained from the Graduate School of Social Work. The catalog and general information on the School are given on page 51.

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.

Suggested Course Offerings


Elective credit only. Prerequisite: Determined by department and instructor with consent of department.

Suggested course offerings for students planning a social work career can be obtained from the Graduate School of Social Work. The catalog and general information on the School are given on page 51.

Suggested Course Offerings

Minor shall consist of 24 upper-division hours. Eight lower-division hours in sociological prerequisites to a minor.

Social Work: Students contemplating entrance into the field of professional social work will have an opportunity to plan their upper-division programs to this end. Suggested course offerings for students planning a social work career can be obtained from the Graduate School of Social Work. The catalog and general information on the School are given on page 51.

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.

Suggested Course Offerings


Elective credit only. Prerequisite: Determined by department and instructor with consent of department.
4151 Theatre Practicum: Performance (1-4) Contact of 3151. Available for credit only to theatre majors. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hrs.

4152 Theatre Practicum: Production (1-4) Contact of 3152. Available for credit only to theatre majors. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hrs.

4153 Summer Repertory Productions (1-4) Contact of 3153. Available only to members of summer company by consent of instructor. May be repeated. Maximum credit 4 hrs.


3151 Theatre Practicum: Performance (1-4) Supervised work on departmental productions. Available for credit only to theatre majors or with consent of department. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hrs.

3153 Summer Repertory Productions (1-4) Supervised work on summer repertory productions. Available only to members of summer company by consent of department. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hrs.


2211-21 Stagecraft (4, 4) Techniques of scenery construction. 3211—Fundamental methods of stage lighting. Crew assignments on major productions.

3131 Basic Stage Costume (4) Costume history and its application to the stage; basic techniques in costume construction.


3210 Introduction to Costume Design (4) Special techniques in costume and property construction; stage management; problems in basic technical theatre practice. Must be taken in sequence. Prereq: 2211-21 and consent of instructor.

3221-22 Introduction to Scene Design (4, 4) 3221—Problems in stage design with reference to space and form, movement, scale, and style; rudiments of rendering and ground-plan preparation. 3222—Play interpretation through scenic means; setting as essential for establishing mood, indicating character, and locating the action. Must be taken in sequence.

3230-30 History of the Theatre (4, 4) Drama in performance with particular emphasis in theatre production; major plays and theatre practices. 3250—Antiquity to the Renaissance 3250—The European theatre, 1650-1850. 3254—Modern theatre.

3250-52 History of the American Theatre (3, 3) Development of the theatre as social institution in America. 3250—From its beginnings to 1900. 3252—From 1900 to present.

3221-22 Introduction to Scene Design (4, 4) Special techniques in stage lighting; elementary theory; problems in basic technical theatre practice. Must be taken in sequence. Prereq: 2211-21 and consent of instructor.

3451-42 Advanced Stagecraft (4, 4) Special techniques in and theory of stage lighting; elementary theory; problems in basic technical theatre practice. Must be taken in sequence. Prereq: 2211-21 and consent of instructor.

4214-22 Advanced Technical Theatre (4, 4) Advancement of technical theatre management; advanced scenic, lighting, and property execution; special problems in technical theatre.

4241-42 Advanced Scene Design (4, 4) Descriptive drawing as an approach to three-dimensional design; theatrical graphics and technical design. 4243—Perception of surface color; construction of spatial illusion through color with reference to rendering, scene painting, and preparation of painter's elevations. Must be taken in sequence. Prereq: 2211-21, 3221-22, and consent of instructor.

4341-43 Advanced Lighting Design (4, 4) Relationship of light to setting in creating stage environment. Must be taken in sequence. Prereq: 3211-22 and consent of instructor.

4441-42 Advanced Play Directing (4, 4) Problems of play interpretation; directing period pieces; preparation of a play for public performance. Must be taken in sequence. Prereq: 2453-52 and consent of instructor.

4541-42 Advanced Theatre Costume Design (4, 4) Advanced problems in costume design and construction; pattern drafting; drawing. Prereq: 3111-12. 4791-50 Dramatic Theory and Criticism (3, 3) 4601-22 Playwriting (4, 4) Prereq: Consent of instructor.

GRADUATE

5011-13 Projects in Litue of Theatre (3, 3, 3) 5230 Seminar in Playwriting (3)

5310 Studies in European Theatre History (3) 5320 Studies in American Theatre History (3)

5360 Projects in Lighting Design (3) 5630 Projects in Designing Lighting (3)

5690 Projects in Scene Design (3) 5860 Projects in Costume Design (3)

5710-71-73-74-76 Master Class in Acting (5, 5, 5, 5, 5) 5860-81-82 Design and Technical Theatre Seminar (5, 5, 5)

5980 Studies in Theatrical Production (3) 5912 Play Production in Secondary Schools (4)

5910 Studies in Drama Theory and Criticism (3, 3, 3) Speech and Theatre (945)

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

2011 Introduction to Oral Interpretation (2) Art of reading aloud; development of interpretive techniques and their application to selected passages of prose, poetry, and drama.

3691 Oral Interpretation of Poetry Literature (4) Prereq: 2011 or consent of instructor.

3671 Oral Interpretation of Drama (4) Prereq: 2011 or consent of instructor.

4101 Foreign Study (1-16) See page 183.

4102 Off-Campus Study (1-16) May be repeated for major credit to maximum of 12 hrs. See page 183.

4103 Independent Study (1-16) May be repeated for major credit to maximum of 8 hrs. See page 183.

4170-80 Film History and Theory (3, 3, 3) Analysis of history and style of film. 4180—Exhibition and persuasion. 4190—Experimantal forms and 6 hrs.

4460 Group Performance of Literature (4) Oral interpretation of selected works of literature; readers theater, and chamber music.

GRADUATE

5900 Thesis

5902 Non-Thesis Graduation Completion (3-15)

5110 Introduction to Graduate Research in Speech and Theatre (3)

5120 Directed Reading and Research (3)

5160 Theory and Technique in Oral Interpretation

Statistics

See faculty list page 93.

Liberal arts students may major or minor in statistics under the supervision of the faculty of the statistics department in the College of Business Administration. The major is designed to prepare students for graduate studies in statistics or for professional work in various applications of statistical methods, including applications in the natural and social sciences, business, and industry. It is highly recommended that a student majoring in statistics have a minor in an area of application.

Major: (a) Required courses: 27 hours to consist of Mathematics 2840-50-60; Statistics 3460; Computer Science 4310; Computer Science 4310; Statistics 3500 or Mathematics 4600 or 4750. (b) Electives: 12 hours to be selected from no more than two of the following groups: Computer Science 3150, 3510, 3510, 3520, 4320; Industrial Engineering 3450, 3510, 3520, 3530, 4580; Industrial Management 4100, 4520; Statistics 3790-80, 4060-70, 4510-20-30 or 4510-20-30 (total 45 hrs).

Minor: (a) Required courses: 21 hours to consist of Mathematics 2840-50-60; Statistics 3460-40; Computer Science 4310.

(b) Electives: 9 hours from upper-division statistics courses not in part (a) of the minor.

University Studies (984)

(Non-Departmental)

Approved for study deals with important contemporary topics which are sufficiently current to require study and reference of students and faculty from more than one more college; they are open to all qualified members of the UTK community.

2010 Technology, Society and the Common Good: The Energy Problem (3) Designed for students of all ages. An exploration of the scientific, political, ethical, and philosophical/religious differences among the various energy policies in the United States and global energy policy. Seminar format.

4108 Energy Needs and Our Environment (3) Problems of present and projected energy resources and
Zoology (995) Programs

Prerequisites:...J.H. Abel (Head), Ph.D. Brown; R.M. Bagby, Women's Studies
sumption. Topical focus will change from quarter to regional impacts of energy production and con-
demands: economic, behavioral, legal, technical, but 3000-level biology courses may be used.

1841-51 or 1540-50-60 and Chemistry 1110-20-30 . Corequisites are Mathematics 1840-50 or 1550-60 (Mathematics 1118-28 are additional prerequisites-consult the catalog for actual topics and lab. Students who receive credit for 1118-28 may not also receive credit for Biology 1210-20-30 Botany 1110-30 or 1118-28.

2450-70 Human Anatomy and Physiology for Nurses (3, 3, 3) Fundamentals of human anatomy and physiology. 2 hrs and 1 lab.

2461-71 Human Anatomy and Physiology for Nurses (4, 4, 4) Same as 2450-70 except 2 hrs and 2 labs.


2920-30 Human Physiology (4, 4, 4) Same as 2461-71 except 2 hrs and 2 labs.

3060 Comparative Vertebrate Anatomy (5) Developmental morphology of selected vertebrates. 3 lectures and 1 lab. Students who receive credit for 1118-28 must achieve at least a B in whichever quarter is completed. Students who do not satisfy this requirement must complete the sequence with appropriate quarters of Biology 1210-20-30, 1118-20-30. Corequisite: Biology 1210-20-30.

3190 Mammalogy (4) Classification, evolution, distribution, reproduction, populations, and behavior. 2 hrs and 2 labs. (Not open to students with credit for former 3200.)

3200 Prerequisites to upper-division courses:...1110-20-30-40. Corequisite: 4250.

3320 Histology (4) Study of animal tissues. Prerequisite: Biology 2130 or 3130. 2 hrs and 1 lab. Students who receive credit for 1118-28 may not also receive credit for Biology 1210-20-30 Botany 1110-30 or 1118-28.

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

3720 Ethology and Sociobiology (3) Basic concepts of behavior and behavior in relation to biological and social organization, the evolution of mental capacities, the psychology of the sciences, and the arts. (Same as Psychology 3720.)

3920 Human Endocrinology (4) Basic course in physiology (endocrine, reproductive, cellular, inter-divisional relations) of hormones for analysis of gland function, mechanism of endocrinological and metabolic mechanisms. 3 lectures and 1 discussion. Prerequisite: A 2050.

4050-4157 Minicourse in Zoology of the Major and minor.

4070-4181 Microbiology and Immunology (3, 3, 3, 3) 2 lectures and 1 lab. Required for students majoring in zoology and biology. 2 hrs and 2 labs. (Not open to students with credit for former 3300.)


4120-20-30 Undergraduate Research Participation (2, 2, 2) Experience in active research projects under supervision of staff members. Prerequisite: Junior or senior standing and prior consent of instructor.

4140 Predictron in Zoology (1-2) Participation in practical application of zoology in community institutions, government organizations, and industry. Approximately 5 hrs of involvement per week. Prerequisite: Biology 3110, 3130, and senior standing.

4150 Membrane (4) Classification, evolution, distribution, reproduction, populations, and behavior. 2 hrs and 2 labs. (Not open to students with credit for 3150.)

4200 Ethology (3) Classification, collection and identification, distribution, life histories, and economic importance of fishes. Prerequisite: Biology 2130 or 3130. Prerequisite: Biology 2460-70-80 except 2 hrs and 2 labs.


4259 Comparative Animal Physiology Laboratory I (2) Comparative physiology laboratory sequence. 1 lab.

4280 Comparative Vertebrate Anatomy Laboratory (1) (2) Corequisites: 4280-90-100.

4320 Comparative Animal Physiology Laboratory II (2) Corequisite: 4280.

4350 Comparative Animal Physiology Laboratory III (1) Prerequisite: Biology 2130 or 3130. Corequisite: 4280.

4360 Immunology (3) (Same as Microbiology 4360)

4370 Comparative Evolution (3) Comparative analysis of the physiology of man in relation to vertebrates and invertebrates. Prerequisite: Biology 3130-30-40. (Same as Biology 4230.)

4380 Hemeprology (3) Corequisites: 4280-90-100. Distribution, life histories, collection, and identification of anemia in clinical diagnosis of hormones for analysis of gland function, mechanism of endocrinological and metabolic mechanisms. 3 lectures and 1 discussion. Prerequisite: A 2050.

4380 Hemeprology (3) Corequisites: 4280-90-100. Distribution, life histories, collection, and identification of anemia in clinical diagnosis of hormonal levels for analysis of gland function, mechanism of endocrinological and metabolic mechanisms. 3 lectures and 1 discussion. Prerequisite: A 2050.
identification. 2 hrs and 2 labs or field periods. (Not open to students with credit in 3230.)

4320 Microtechnique (4) 3320 recommended. 2 hrs and 2 labs.

4330 General Genetics Laboratory (2) Mainly Drosophila experiments designed to illustrate basic principles of inheritance. Prereq: Biology 3120.

4360 Organic Evolution (4) Study of cellular organelles at the light and electron microscope levels and the functioning of these organelles. Prereq: Biology 3120.

4450 Protozoology (4) Morphology, taxonomy, and physiology of protoza in relation to fundamental biological concepts. Recommended: Biology 3120. 2 hrs and 2 labs.

4660 Introduction to Aquatic Ecology (4) Introduces the physiochemical nature of inland waters. Biotic communities are described, and their interrelationships explored. Prereq: Chemistry 1110-20-30, and Biology 3130. 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 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 consent 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 3940.)

GRADUATE

5000 Thesis

5017 Colloquium in Ethology (1)

5110 Zooplankton Ecology (4)

5120 Graduate Research Participation (3)

5150 Zoological Bibliography (1)

5160 Fresh-Water Invertebrates (4)

5210 Plant Parasitic Nematoidea (4)

5250 Physiology of Hormones (4)

5270 Advanced Neuromuscular Physiology (5)

5280 Insect Physiology (4)

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

5350 Biometry (3)

5360 Isotopic Methods and Techniques: Lecture (2)

5380 Isotopic Methods and Techniques: Laboratory (4)

5410 Advanced Parasitology (4)

5490 Advanced Medical Entomology (3)

5510-20 Advanced Animal Physiology (5, 5)

5550 Advanced Ornithology (4)

5570 Animal Populations (3)

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

5630 Methods of Experimentation with Laboratory Mammals (2)

5660 Physiology of Development (3)

5700 Cellular Immunology (4)

5740 Physiological Ecology of Animals (2)

5770 General Vertebrate Neuroanatomy (3)

5780 Radiation Physiology (4)

5790 Transport of Ions across Epithelia (4)

5820 Methods of Taxonomy (4)

5830 Aquatic Insects (4)

5860 Geographic Distribution of Animals (4)

5870 Insect Systematics (4)

5990 Doctoral Research and Dissertation

6110 Seminar in Cellular Biology (2)

6140 Seminar in Immunobiology (2)

6210 Seminar in Physiology (2)

6310 Seminar in Cytology (2)

6350 Seminar in Developmental Biology (2)

6410 Seminar in Parasitology (2)

6510 Seminar in Genetics (2)

6610 Seminar in Oncology (2)

6650 Seminar in Aquatic Biology (2)

6710 Seminar in Ecology (2)

6810 Seminar in Entomology (2)

6910 Seminar in Radiation Biology (2)