inter-departmental 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 advisors in each major department or area.

Requirements for specific majors vary by program and are discussed under each department or program. A major consists of at least 36 credit hours in courses numbered 2000 or above as specified by the department or program. Up to 8 credit hours taken in the major may also be used to satisfy basic skills or distribution requirements where listed. A minor requirement must be earned in every course counted as part of a major. Students transferring from other institutions must complete at least 12 credit hours at UTK in each major awarded on this campus. Students may elect as many courses as desired in any department or program. In lieu of a major, students may develop an Individualized Program (described below). Majors available in the Basic B.A. or B.S. include: Anthropology, Art, Art History, Audiology, Biology, Botany, Chemistry1, Classics, Computer Science1, Cultural Studies, Economics, English, French, Geography, Geology, German Services, Italian, Mathematics1, Microbiology, Music, Philosophy, Physics1, Political Science, Psychology, Religious Studies, Russian, Sociology, Spanish, Speech Pathology, Speech and Theatre, Statistics, and Zoology.

(2) Optional Multiple Majors

After the general requirements of basic skills, distribution and a major have been satisfied, additional majors may be recorded on the transcript without regard to course overlap among majors or, among the additional majors and Basic Skills and Distribution requirements. Students developing multiple majors must declare this intent at the time of application for graduation. Once a student has graduated, the establishment of additional majors becomes subject to University second-degree requirements. Students who satisfy the requirements of a degree in a college other than Liberal Arts may also major inside the College of Liberal Arts with the approval of the degree granting unit. These students need complete only the major requirements, not the Basic Skills or Distribution requirements for Liberal Arts degrees. The Liberal Arts major may also be listed on the student's transcript.

(3) Optional Minors

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 minors and Basic Skills and Distribution requirements.

The minimum requirement for a minor is 24 credit hours in courses numbered 2000 or above. Minors are available in most departments or programs in which majors are offered and also in: Biochemistry, Physical Sciences, Portuguese, and Women's Studies. Minors may be developed in other colleges or schools of the University, but must be approved by the department head in which the minor is proposed and by the Associate Dean for Student Academic Affairs in Liberal Arts. At least 6 of the 24 credit hours required for a minor must be completed at The University of Tennessee, Knoxville.

A business minor is available to students who successfully complete the following required courses: Accounting 2110-20-30; Economics 2000-20-30; and Statistics 2100. Also, 16 hours of upper-division electives must be taken at UTK. No more than six upper-division hours of accounting, economics, or statistics may be used for the minor. Students are responsible for meeting prerequisites for any upper-division courses taken in a particular concentration.

(4) Supplementary Elective Courses

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

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

1. Additional courses in the major field;
2. A related minor;
3. An area in the arts;
4. An off-campus quarter.

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

II. 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 will satisfy the all Basic Skills and Distribution requirements, just as do those in the Basic Program. The point at which the greatest degree of individualization takes place, however, is in the area of concentration. Although the quantitative aspect of the area of concentration is the same as for the major in the Basic Program (i.e., a minimum of 36 hours in courses numbered above 2000), there is no restriction in principle on the choice of courses of which it is composed. The student may design a program, in consultation with an advisor, and submit it for consideration to the Committee on the Individualized Program. The proposed courses of study must have some clear central purpose, usually implemented through intensive work in two or three departments; an undirected scattering of courses will not be approved. For further information contact the Liberal Arts Advising Center.

III. College Scholars Program

A limited number of freshmen, entering transfer students with less than 60 credit hours, and resident students with less than 90 credit hours are invited each year to enter 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 upholding 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 advisor (tutor) who under ordinary circumstances continues to advise the student throughout the college career. Together they determine what kinds of course work and/or 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, required of all College Scholars. When College Scholars fulfill departmental requirements for additional majors or minors, these will be recorded on the Scholars' transcripts. Scholars will not be required to meet Basic Skills or Distribution requirements, either as general requirements or in order to have such majors or minors officially recognized.

Further information and applications may be obtained from the Liberal Arts Advising Center.

IV. Preparation for the Health Professions

Pre-Dental
Pre-Dental Hygiene
Pre-Medical
Pre-Medical Record Administration
Pre-Medical Technology
Pre-Nursing
Pre-Physical Therapy
Other Health Professions
Pre-health professional programs are available for students who plan a career in one of the health professions. The programs preparing students for the study of medicine, dentistry, and pharmacy include the specified courses required for admission to the respective colleges of The University of Tennessee for the Health Sciences at Memphis (UTCHS), as well as those required for the Bachelor of Arts degree in the College of Liberal Arts at The University of Tennessee, Knoxville. The pre-medical technology program prepares students to undertake professional training during the third year of study at UTCHS. Other pre-health professional programs—dental hygiene, medical record administration, cytotechnology, nursing, pharmacy, and physical therapy—are offered for those students who are planning to pursue

1 Students wishing to prepare to professional training at institutions other than UTCHS should consult the catalogs of those institutions to determine the specific preparation required for admission.
professional training in health professional areas which lead to an undergraduate degree from UTCHS but not to a degree from UTK.

Admission to any program at UTCHS or Knoxville is at the discretion of that program’s admissions committee. Admission to The University of Tennessee is competitive and completion of a pre-health professional program in the College of Liberal Arts does not assure admission to any professional training program. Because the competition for admission to most programs in the health professions is keen, pre-health professional students are encouraged to work towards the completion of a degree program in a major which will enable the individual to adapt to an alternative program in the event admission to the desired program is not achieved. The preparatory courses necessary for professional study can be incorporated into the chosen major program.

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

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 138 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 degree is granted upon completion of 190 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 in either the three-or four-year program must complete the last 45 hours of credit in residence at The University of Tennessee, Knoxville, before entering 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.

Freshman

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1010-11: 1020; 1031 or 1032 or 1033 or equivalent</td>
<td>12</td>
</tr>
<tr>
<td>History 1110-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Biology 1210-20-30 or Zoology 1118-20-29</td>
<td>12</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8</td>
</tr>
<tr>
<td>Basic Skills B. Foreign Language (Intermediate Level Sequence)</td>
<td>9</td>
</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 3211-21-31 and 3219-29-39</td>
<td>12</td>
</tr>
<tr>
<td>Advanced Biology and/or Zoology 12</td>
<td>12</td>
</tr>
<tr>
<td>Distribution (A) Non. U.S. History</td>
<td>8</td>
</tr>
</tbody>
</table>

Divisional Distribution (B) Social Sciences | 7-8 |

Junior

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 2210-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Speech 2211</td>
<td>4</td>
</tr>
</tbody>
</table>

Divisonal Distribution (C) Social Science | 7-8 |

Divisonal Distribution (D) Humanities (2) | 8-9 |

U.S. Studies | 6-8 |

Foreign Studies | 6-8 |

Electives | 4 |

Senior

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of major program and B.A./B.S. requirements or completion of one year at UT Center for the Health Sciences</td>
<td>41-48</td>
</tr>
</tbody>
</table>

Total Minimum Required: 190 hours

*Or equivalent honors courses.

**Any student who has had two years of biology or one very good year in high school should take the proficiency tests for Biology 1210:20-30 to determine eligibility for going directly into Biology 3110 or 3120.

Math placement depends on high school courses and grades, ACT scores, and B.A./B.S. requirements. Math is a prerequisite for Physics. A math placement handbook is available in the Liberal Arts Advising Center, 220 Ayres Hall.

Chemistry 1110-20-30 is a prerequisite to Biology 3110-20.

This requirement assumes a course in credit language background in high school to begin an intermediate language sequence at UTK. Effective with the class entering the College of Dentistry, July 1976.

*Recommended courses in biology and zoology are genetics, cell biology, and comparative vertebrate anatomy.

PRE-DENTAL HYGIENE PROGRAM

A Bachelor of Science in Dental Hygiene is granted by UTCHS upon completion of a program which includes 66 hours of prescribed courses in the College of Liberal Arts and six quarters of study at UTCHS. Students interested in the pre-dental hygiene program are encouraged to consult with the pre-health professional advisor in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office for more information. Bulletins describing the pre-dental hygiene program and requirements in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

PRE-MEDICAL PROGRAM

The college offers both three-year and four-year programs leading to the degree of Bachelor of Arts for students preparing for the study of medicine. Both programs are based upon the program outlined below. In the three-year program the student must complete at least 139 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 degree is granted upon completion of 190 or more credit hours while enrolled in the college, including a major of 36 or more hours in addition to the courses outlined below. The requirements for a major are 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 UTK before entering UTCHS.

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

Freshman

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1010-11: 1020; 1031 or 1032 or 1033 or equivalent</td>
<td>12</td>
</tr>
<tr>
<td>Chemistry 1110-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Biology 1210-20-30 or Zoology 1118-20-29</td>
<td>12</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8</td>
</tr>
<tr>
<td>Basic Skills B. Foreign Language (Intermediate Level Sequence)</td>
<td>9</td>
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</table>

Sophomore

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 3211-21-31 &amp; 3219-29-39</td>
<td>12</td>
</tr>
<tr>
<td>Physics 2210-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Biology 1210-20-30 or Zoology 1118-29-39</td>
<td>12</td>
</tr>
<tr>
<td>Chemistry 1110-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8</td>
</tr>
<tr>
<td>Basic Skills B. Foreign Language (Intermediate Level Sequence)</td>
<td>9</td>
</tr>
</tbody>
</table>

Junior

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 2100-20-30 &amp; 2101-20-30</td>
<td>12</td>
</tr>
</tbody>
</table>

Senior

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of major program and B.A./B.S. requirements</td>
<td>45-52</td>
</tr>
</tbody>
</table>

Total Minimum Required: 190 hours

*Or equivalent honors courses.

**Many colleges of medicine require, and others strongly recommend, preparation in calculus. Therefore, students preparing for the study of medicine are strongly encouraged to include 1840-50 in their programs. In some cases, Mathematics 1550-60 may be substituted. Math placement depends on high school courses and grades, ACT scores, and B.A./B.S. requirements. Math is a prerequisite for Physics. A math placement handbook is available in the Liberal Arts Advising Center, 220 Ayres Hall.

The College of Medicine at E.T.S.U. requires two quarters of laboratory in General Chemistry and one quarter of laboratory in Organic Chemistry.

*Although not specifically required by the College of Medicine, the Health Professions Advisory Committee strongly recommends that students include additional work in Chemistry 2140-49 or 4910-20-30, in Zoology 3050 and 3080, and in Microbiology 3700-3910.

PRE-MEDICAL RECORD ADMINISTRATION PROGRAM

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

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

PRE-MEDICAL TECHNOLOGY PROGRAMS

The college offers two programs leading to the study of medical technology:

1. The Science-Medical Technology Curriculum leading to a Bachelor of Arts degree with a major in medical technology from The University of Tennessee, Knoxville.

2. The Pre-Medical Technology Program leading to a Bachelor of Science in medical technology from UTCHS.

Science-Medical Technology Curriculum

The Science-Medical Technology Curriculum is a three-year program consisting...
quarters in length and leads to the degree of Bachelor of Science in Medical Technology from UTCHS. Classes are admitted in September and application must be made one year in advance.

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

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

PRE-NURSING PROGRAM

The minimum requirements for admission to the College of Nursing at UTCHS is 90 hours of prescribed courses in the College of Liberal Arts. The program in Memphis, which leads to the Bachelor of Science in Nursing from UTCHS, is two years in length.

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

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

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

PRE-PHARMACY PROGRAMS

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

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

The three-year and four-year programs, which lead to a Bachelor of Arts degree from The University of Tennessee, Knoxville, as well as to the professional degree in pharmacy from UTCHS, are based upon the program outlined below. In the three-year program, the student must complete at least 134 credit hours while enrolled in the College of Liberal Arts. A minimum of 127 hours of prescribed courses while enrolled in the College of Liberal Arts. The program in Memphis is 15 months in length.

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

PRE-VETERINARY MEDICINE PROGRAM

The following program is designed for students who wish to pursue a Liberal Arts degree while preparing for the study of Veterinary Medicine. Students in this program must complete at least 153 credit hours while enrolled in the College of Liberal Arts. The program must satisfy the Basic Skills and Distribution requirements, and must complete the last 45 hours in residence at UTK before enrolling in the College of Veterinary Medicine.
departmental major is not required. Upon successful completion of the first year (three quarters) of the professional veterinary medicine curriculum, the Bachelor of Arts degree will be conferred by the College of Liberal Arts.

Note: Admission to the College of Veterinary Medicine is at the discretion of the admissions committee of that College; admission to and successful completion of this program does not assure admission to the College of Veterinary Medicine.

**Freshman**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
<td>9</td>
</tr>
<tr>
<td>Chemistry 1110-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Biology 1210-20-30 or Zoology 1118-28-38</td>
<td>12</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8</td>
</tr>
<tr>
<td>Agriculture 1130</td>
<td>4</td>
</tr>
<tr>
<td>Basic Skills B. Foreign Language (Intermediate Level Sequence)</td>
<td>9</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 2211-21-31 and 3219-29-39</td>
<td>12</td>
</tr>
<tr>
<td>Physics 2110-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Animal Science 3320, 3330</td>
<td>7</td>
</tr>
<tr>
<td>Biology 3110 or Animal Science 3410</td>
<td>3-4</td>
</tr>
<tr>
<td>Divisional Distribution A. Non U.S. History</td>
<td>8</td>
</tr>
<tr>
<td>Divisional Distribution C. Social Science</td>
<td>6-7</td>
</tr>
</tbody>
</table>

**Junior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry 4110-20</td>
<td>8</td>
</tr>
<tr>
<td>Microbiology 3700-3519</td>
<td>5</td>
</tr>
<tr>
<td>Speech 2311 or 2361 or 2351</td>
<td>4</td>
</tr>
<tr>
<td>Divisional Distribution C. Social Science</td>
<td>8-9</td>
</tr>
<tr>
<td>Divisional Distribution (D) Humanities (1 and 2)</td>
<td>14-17</td>
</tr>
<tr>
<td>Upper Level Division (A) U.S. Studies</td>
<td>6-8</td>
</tr>
<tr>
<td>Upper Level Division (B) Foreign Studies</td>
<td>6-8</td>
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**Senior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of major program and B.A./B.S. requirements or</td>
<td></td>
</tr>
<tr>
<td>Completion of one year at UT College of Veterinary Medicine</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL MINIMUM REQUIRED: 190 hours**

**Other Health Professions**

Cytotechnology

Optometry

Veterinary Medicine

A library of materials about career opportunities in the health professions, including most allied health areas, has been developed and is located in the Health Professions Office, 216 Ayres Hall. Academic Advisors are available to assist students in planning their programs in order to meet the requirements for admission to other programs.

**Bachelor of Fine Arts**

The Bachelor of Fine Arts degree represents intensive study preparing the student for graduate programs and careers relating to art. One major is available: Studio Art. Transfer students are advised that a minimum of 28 hours in studio courses and eight upper-division hours in art history must be earned at The University of Tennessee, Knoxville.

**STUDIO ART MAJOR**

A minimum of 189 credit hours is 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) drawing, (3) fiber-fabrics, (4) graphic design/illustration, (5) painting, (6) printmaking, (7) sculpture, and (8) watercolor. Inter-area concentrations are also possible.

**Electives**

A recommended sequence of courses from such areas as business, education, and sciences are designed to help the student combine art with other fields for possible careers in art administration, gallery and museum management, scientific illustration, non-credit teaching, and other art related occupations. Up to 60 elective hours may be used by applying the 20-credit-hour requirements of non-art electives (III.C) to a career preparation sequence. See Option II under Electives. Counseling and programs of study are available in the Art Center Student Advisement Center, Room 213.

**CORE CURRICULUM**

The Studio Art core is required of all B.F.A. candidates. It is designed to give a broad art background, in both studio and art history, at the earliest possible time. This background, during the freshman and sophomore years, gives a foundation upon which the student may build, and provides an opportunity to become acquainted with the various artistic disciplines. This gives each student the understanding to plan a better program during the remaining two years. Unless otherwise stated the art core courses are non-sequential.

**I. Art Core**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Art 1000 (to be completed during freshman year)</td>
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<tr>
<td>Art History</td>
<td></td>
</tr>
<tr>
<td>1. Art 1815, 1825, 3750</td>
<td>12</td>
</tr>
<tr>
<td>2. Elective art history</td>
<td>12</td>
</tr>
<tr>
<td>Studio</td>
<td></td>
</tr>
<tr>
<td>1. Art Fundamentals 1115, 1125, 1135 (to be completed during the freshman year)</td>
<td>12</td>
</tr>
<tr>
<td>2. Introduction to Media (to be completed prior to junior year)</td>
<td></td>
</tr>
<tr>
<td>a. Art 2105, 2205 or 2305</td>
<td>12</td>
</tr>
<tr>
<td>b. A minimum of 12 hours selected from</td>
<td></td>
</tr>
<tr>
<td>Art 2250, 2255, 2260, 2265, 2295</td>
<td>12</td>
</tr>
</tbody>
</table>

**Total: 64 hours**

**II. Art Concentration (A OR B)**

A. Recommended courses of study in ceramics, graphic/design illustration, drawing, fiber-fabrics, painting, printmaking, sculpture, and watercolor are available in the Art Office.

B. Inter-Area: A combination of courses from the various formal areas (listed in II.A above) to be approved by the department.

**Subtotal: 36 hours**

**III. General Curriculum**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. English Composition</td>
<td>9</td>
</tr>
<tr>
<td>B. Non-U.S. History or Social Science</td>
<td>8</td>
</tr>
<tr>
<td>C. Natural Science</td>
<td>8</td>
</tr>
</tbody>
</table>

**D. Philosophy 2010 | 4**

**E. Liberal Arts Non-art Electives | 20**

**Subtotal: 49 hours**

**IV. Electives**

Option I: Additional art or non-art electives...

Option II: Career preparation electives...

**Subtotal: 40 hours**

**TOTAL: 189 hours**

**COLLEGE ARTISTS PROGRAM**

A program of 189 hours is to be determined by the student and approved by the Department of Art honors committee. This program allows the student greater opportunity for establishing a unique education in studio art, which may include independent study, off-campus study, or foreign study in addition to formal class work. Participation and graduation in the College Artists Program will be noted on the student's transcript.

Students may apply for the program upon completion of 45 credit hours, but will not normally be considered after the completion of 90 hours. Admission to the College Artists Program is based on four criteria: (1) an overall grade-point average of at least 3.0, (2) a portfolio of work, (3) the proposed course of study, and (4) a personal interview. A minimum grade-point average of 3.25, at least 12 hours per quarter, and evidence of continuing motivation and interest must be maintained in the program. Each College Artist will normally enroll in one or more general or departmental honors course each quarter and must participate in an honors exhibition prior to graduation.

**STUDIO HONORS COURSES**

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

A. Grade-point average of 3.2 in studio art courses

B. Portfolio of class and/or outside work

C. Recommendation of the studio faculty, and/or approval of the instructor

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

**Bachelor of Music**

The Department of Music offers the degree of Bachelor of Music with concentrations in music theory, composition, electronic music, music history and literature, and applied music (voice; piano, organ, church music—organ or piano; church music—voice; piano—literature; strings; woodwind, brass, and percussion instruments; multiple keyboard instruments; multiple woodwind instruments; studio music and jazz; Suzuki string pedagogy). The study is designed to prepare students for graduate study or for positions in music for which a professional degree is required.

Students who plan to work for this degree are assigned an advisor in the Department of Music at the time they enter the program. Continuation in the program at the 3000 level requires the achievement of an average of 2.5 or better in all music courses taken. The minimum requirement for the degree is 180 credit hours, including the specified courses outlined below.
Note: In addition to the concentrations offered in the Bachelor of Music curriculum, a major in music with a concentration in either music history and literature or applied music is available in the Bachelor of Arts curriculum. (See page 190.)

MUSIC THEORY

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>3</td>
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<td>3000</td>
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<td>Ensemble</td>
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<tr>
<td>3</td>
<td>Applied music</td>
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<tr>
<td>3</td>
<td>Ensemble</td>
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<td>3</td>
<td>Liberal arts electives (not in music)</td>
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MUSIC HISTORY AND LITERATURE

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PIANO PEDAGOGY AND LITERATURE

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<tr>
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<td>9</td>
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</tr>
<tr>
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<td>3</td>
<td>Applied music</td>
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<td>Ensemble</td>
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<tr>
<td>3</td>
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MUTIPLE KEYBOARD INSTRUMENTS

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<tr>
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<td>Electives</td>
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<tr>
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<td>0</td>
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<td>Applied Music</td>
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COMPOSITION

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<tr>
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<td>Ensemble</td>
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<tr>
<td>3</td>
<td>Applied music</td>
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<td>Ensemble</td>
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<td>3</td>
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TOTAL: 180 hours

TOTAL: 180 hours

TOTAL: 180 hours
CHURCH MUSIC (Organ or Piano)

**Freshman**

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<tr>
<td>Music 1113-23-33</td>
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<td>Music 2300</td>
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</tr>
<tr>
<td>Principal applied study</td>
<td>3</td>
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<tr>
<td>Ensemble</td>
<td>3</td>
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<tr>
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**Total: 180 hours**

**Junior**

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<td>Music 2071-81-91</td>
<td>3</td>
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<tr>
<td>Music 4074-84</td>
<td>6</td>
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<tr>
<td>Music 3114</td>
<td>3</td>
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<tr>
<td>Music 4003-04-05</td>
<td>9</td>
</tr>
<tr>
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<td>3</td>
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<tr>
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**Senior**

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</table>

**Total: 180 hours**

**STRINGS**

**Freshman**

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<tr>
<td>Music 1113-23-33</td>
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<td>Music 3114</td>
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<td>Music 4003-04-05</td>
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**Total: 180 hours**

**WOODWIND, BRASS, AND PERCUSSION INSTRUMENTS**

**Freshman**

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<td>Music 2300</td>
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</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
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<tr>
<td>Senior</td>
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</tr>
<tr>
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<td>3</td>
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<tr>
<td>Music 3113-23</td>
<td>6</td>
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<td>Music 2071-81-91</td>
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<td>Music 4074-84</td>
<td>6</td>
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<tr>
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<td>9</td>
</tr>
<tr>
<td>Music 3071-81-91</td>
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<tr>
<td>Principal applied study</td>
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</tr>
<tr>
<td>Ensemble</td>
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</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
</tr>
<tr>
<td>Senior recital 4000</td>
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</table>

**Total: 180 hours**

**MULITPLE WOODWIND INSTRUMENTS**

**Freshman**

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**Total: 180 hours**
**SUZUKI STRING PEDAGOGY**

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<td>Ensemble</td>
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**Sophomore**

| English 1010 or 1011; 1020; 1031 or 1032 or 1033 | 9 | |
| Music 1111-21-31 | 9 | |
| Music 1112-23-33 | 3 | |
| Music 2300 | 3 | |
| Principal applied study | 12 | |
| Music 1010-20-30 | 3 | |
| Ensemble | 3 | |
| Liberal arts electives (not in music) | 4 | |
| Music 2000 | 0 | |

**ELECTRONIC MUSIC**

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**Sophomore**

| English 1010 or 1011; 1020; 1031 or 1032 or 1033 | 9 | |
| Music 1111-21-31 | 9 | |
| Music 1112-23-33 | 3 | |
| Music 1199 | 2 | |
| Applied Music | 3 | |
| Ensemble | 3 | |
| Music 2000 | 0 | |

**TOTAL: 180 hours**

**COOPERATIVE PROGRAM IN CHEMISTRY**

A cooperative program is available to students who have not had two years of one of these languages in high school; who have had two years of high school German, French, or Russian; and who have had a year of laboratory science. Students interested should contact the head of the Chemistry Department, 575 Buehler Hall.

**COURRICULUM REQUIREMENTS**

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<thead>
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<th>Credit</th>
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<td>Mathematics 1110-20-30</td>
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<tr>
<td>Physics 2510, 2310-20</td>
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<tr>
<td>Computer Science 1510</td>
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<tr>
<td>L. A. Electives</td>
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**Sophomore**

| Chemistry 1510-20-30 (or 1110-20-30) | 12 | |
| Chemistry 1525-35 | 2 | |
| Mathematics 1110-20-30 | 10 | |
| Physics 2510, 2310-20 | 11 | |
| Physics 2310-20 | 11 | |
| Chemistry 2140 | 4 | |
| Chemistry 2140-20 | 4 | |
| Physics 2510, 2310-20 | 11 | |
| Computer Science 1510 | 3 | |
| Computer Science 1520 | 3 | |
| L. A. Electives | 4 | |

**Junior**

| Chemistry 3121-23, 3129-29 | 12 | |
| Chemistry 3211-23, 3219-29 | 12 | |
| Chemistry 3210-20 | 11 | |
| Computer Science 3150 | 3 | |
| L. A. Electives | 4 | |

**Senior**

| Chemistry 3211-23, 3219-29 | 12 | |
| Chemistry 3210-20 | 11 | |
| Computer Science 3150 | 3 | |

**TOTAL: 190 hours**

Note: The curricula in strings, woodwinds, brass, and percussion; multiple woodwinds; and voice allow 12 hours of ensemble credit to apply toward electives. This is in addition to the hours in ensemble listed in the tabular resumes.

**Bachelor of Science in Chemistry**

Students who desire to major in chemistry may select from among three courses of study: Bachelor of Science/Concentration A, Bachelor of Science/Concentration B, or Bachelor of Science in Chemistry. The last program is approved by the Committee on Professional Training of 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 student in the B.S. in Chemistry or cooperative program should, at the earliest opportunity, ask the Liberal Arts Advising Center for an advisor in the Chemistry Department. For further information, contact the head of the Chemistry Department, 575 Buehler Hall.

**COOPERATIVE PROGRAM IN CHEMISTRY**

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

The Divisional Distribution requirements of the College of Liberal Arts are satisfied by taking: A. Non-U.S. History (2 course sequence, 8 hrs.), B. Social Sciences (4 or 5 courses, 15-16 hrs.), C. Humanities: I. Literature or Philosophical Perspectives (2 course package, 6-8 hrs.). The number of credits shown in each year of the curriculum are merely intended as guidelines.

It is recommended that a portion of these elective hours be applied to advanced chemistry courses in biochemistry, applied mathematics, physics, or chemical, metallurgical, and polymer engineering.

**Bachelor of Science in Social Work**

The primary objective of the undergraduate social work program is to educate students for entry level positions in professional social work practice in traditional and innovative agency settings and to ensure growth in ability and knowledge as future practitioners and as citizens. The social work curriculum builds on a strong liberal arts base of humanities and the social and behavioral sciences in order to help students understand human diversity and the transactions between people and their environment. The curriculum contains classroom theory and agency-based field placements. Educationally directed field placements, which consist of over 400 clock hours of supervised field instruction in agency settings throughout greater Knoxville, provide extensive and challenging opportunities for students to apply the lessons of the classroom to the problems of society and to prepare for employment.

Students interested in pursuing the Bachelor of Science in Social Work should confer with the Director of the Social Work Program during their first academic year. Those completing this course of study will be prepared to engage in beginning professional social work practice and enter many graduate schools of social work with advanced standing. This degree is designed in accordance with standards set by the Council on Social Work Education.

- **Freshman**
  - English 1010 or 1011; 1020; 1031 or 1032 or 1033... 9
  - Foreign Language (Intermediate level sequence)... 9
  - History (Non-U.S.)... 8
  - Physical Science Sequence... 12
  - Zoology 2510-20-30 (Human Biology)... 12
  - **Sophomore**
    - Social Work 2000... 4
    - Computer Science 1510... 4
    - Social Sciences (Anthropology 2520, Political Science 2540, Psychology 2545, Women’s Studies 2010)... 15
    - Humanities... 17
    - U.S. Studies... 8 (6)
  - **Junior**
    - Social Work 3400-10... 8
    - Social Work 3500-10... 8
    - Child & Family Studies 3515... 3
    - Economics Electives... 3
    - Foreign Studies... 8 (6)
    - Sociology 3910-20... 8
    - Human Services 3200... 4
  - **Senior**
    - Social Work 4103... 6
    - Social Work 4120-30... 8
    - Social Work 4200... 4
    - Social Work 4520-30... 16
    - Electives... 11
  - **TOTAL:** 190 hours

*Courses selected with faculty advice from approved list.

**Preparation for Other Professions**

**Law**

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

**Library Science**

Certain courses in the Graduate School of Library and Information Science are open to students in the College of Liberal Arts interested in beginning positions in a library or in preparation for future graduate study in professional librarianship. For further information, see page 55 or consult the Director of 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 55. Students are accepted into planning from a broad variety of undergraduate backgrounds. Detailed 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.

- **Freshman**
  - Political Science 2510-20, 2530 (choose 8 hours)... 8
  - **Sophomore**
    - Economics 2510-20... 8
    - Political Science 3565-66... 8
    - Political Science 3545-46 or 3801-02-03-04... 8
    - Economics 3340... 3
    - Accounting 2110-20-30... 9
  - **Senior**
    - Political Science 4610-20... 7
    - Political Science 4410... 4
    - Economics 3410... 4
    - Accounting 3510... 3
    - Finance 4350-60... 8

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

*Or equivalent honors courses.
May also be counted toward Distribution requirements.

**Social Work**

Students who wish to prepare for graduate professional training in social work will find a brief description of the program of the School of Social Work on page 56. Detailed information about courses and curricula, as well as requirements for admission, will be found in the catalog of the School of Social Work.

**Teaching**

Students in the College of Liberal Arts who wish to be certified for secondary school teaching must satisfy state certification requirements as well as all degree requirements of the College of Liberal Arts and must be recommended for certification by the College of Education. The College of Education is approved by the National Council for Accreditation of Teacher Education (NCATE); recommendation for certification by the college, therefore, in effect certifies the student in 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 records; (5) successful field experience.

One quarter during the senior year must be reserved for student teaching (Education C & I 4710-20). Application for student teaching must be filed not later than January 1 of the year preceding the academic year in which the student teaching will be undertaken. Those planning to student teach during the 1985-86 academic year must apply by January 1, 1985.

For additional information contact Teacher Certification Office, Room 212 Claxton Education Building. Note: The same course may be applied both to certification requirements and to Basic Skills, Distribution or major requirements of the College of Liberal Arts.

**Theology**

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

**General Information**

**Association with the College**

For information regarding association with the College of Liberal Arts, see page 28.

**Course Load**

The average course load in the college for any quarter is 14-16 credit hours. The University defines full-time undergraduate students as those who register for a minimum of 12 hours. The maximum number of hours which may be taken by liberal arts students is 18, 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 few courses in the college are offered only on a Satisfactory/No Credit (S/NC) basis and students may elect to take others on this basis, except in areas where the option is specifically prohibited. Such courses, if successfully completed, will count as hours for graduation although neither S nor NC grades will be calculated in the student's grade point average. Satisfactory is defined as C or better work on the traditional grading scale and No Credit is defined as less than C. The following regulations apply:

1. S/NC courses, except those offered only on this basis, may not count for Basic Skills or Distribution requirements or major and minor requirements unless specifically permitted by petition. This restriction applies also to major or minor prerequisites or co-requisites.
2. The maximum number of S/NC elective hours which may be counted toward graduation is 30, exclusive of courses offered only S/NC, physical education courses, and/or satisfactory hours earned by examination, military service, etc.
3. A student who desires to take a course S/NC should indicate that intention at the time of registration. A change from S/NC grading to regular grading or from regular grading to S/NC will not be permitted beyond the add deadline in each quarter. (Exception: Students who register for a course S/NC in a restricted area will be required to change to regular grading when the error is discovered.)
4. A transfer student who has more than 30 S/NC or equivalent hours earned prior to admission to The University of Tennessee, Knoxville, may count all of these hours toward graduation but may not elect additional S/NC hours.
5. A transfer student with S/NC or equivalent credit earned prior to admission to The University of Tennessee, Knoxville, in a course which satisfies a major or Distribution requirement may count it for that purpose. In the case of a course which satisfies a major or minor requirement, statement (1) applies.

**Independent Study**

Certain educational goals may be best met through independent study done by an individual under the direction of a faculty member. Students who wish to do such independent work should obtain the approval of the faculty members and the departments concerned prior to embarking upon their study. Credit per quarter will vary from 1-16 hours. Up to 24 hours of credit earned in this way may be applied toward a degree in the college, 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 terms basis. A second is through group programs conducted abroad by other academic institutions to which UTK students with approval may enroll for credit. Assistance in identification of and registration in such programs may be obtained through the Overseas Study Information Service located in the University's Division of International Education. A third opportunity is through individualized programs under the foreign study number 4101. The nature of this work as well as credit for it should be negotiated by students prior to departure with the appropriate liberal arts departments. Credit will be awarded only after completion of all agreed upon requirements, and may vary from 1-16 hours in any one department. Up to 24 hours of such credit, exclusive of that earned in group programs offered by departments, could apply toward a degree in the college. Departments may in any of the above forms limit the number of hours of credit which can be applied toward a given major.

**Liberal Arts Advising Center**

Academic advising for students of the college is offered through the Liberal Arts Advising Center, 220 Ayres Hall, as well as through the several major departments. The Advising Center is staffed on a regularly scheduled basis by members of the college faculty, each of whom has been trained for this specialized work. Students in their first quarter of residence are assigned to the Advising Center where they may relate themselves to a particular 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, at which time they may be transferred for advising to a faculty member in the major department.

**Student Academic Affairs Office**

Academic assistance for students is also provided through the Student Academic Affairs Office, 218 Ayres Hall. This office serves primarily those students not assigned to the Liberal Arts Advising Center, helping them meet a variety of academic needs relating to the development of their academic programs, satisfying curriculum 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 institutions supplies information on financial assistance for Black students, and serves as the focal point for the coordination and development of an improved and expanded 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 Political Science serves as director of the Bureau of Public Administration.

**Psychological Clinic**

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

**University Theatres**

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

**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 (mathematics and computer science), Austin Peay (psychology), Hesler (botany), Walters Life Science (biochemistry, biology, microbiology, and zoology). The Nielsen
Physics Building (physics and astronomy), Geology-Geography (geology and geography), Dabney and Buehler (chemistry and ecology), and South Stadium Hall (audiology and speech pathology and anthropology). West of "The Hill" is a recently built group of buildings for the humanities, social sciences, and fine arts: McClung Tower and the Humanities-Social Sciences classroom building (classics, English, foreign languages, history, philosophy, political science, religious studies, sociology, and speech and theatre), the Music Building (music), and the Hearing and Speech Center (audiology and speech pathology).

Alumni Hall (human services), the Art and Architecture Building (art). In this area also are the McClung Museum and the Clarence Brown and Carousel Theatres, as well as the Undergraduate Library.

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

Departments of Instruction

Afro-American Studies
See Cultural Studies.

American Studies
See Cultural Studies.

Ancient Mediterranean Civilizations
See Cultural Studies.

Anthropology (122)

Professors: W. M. Bass (Head), Ph.D., Pennsylvania State; A. H. Faull, Ph.D. Indiana; A. K. Gutsche, Ph.D. Michigan; R. L. Jantz, Ph.D. Kansas; P. W. Parmelee, Ph.D. Texas A & M.

Associate Professors: J. Chapman, Ph.D. North Carolina

Assistant Professors: W. E. Kipple, Ph.D. Missouri; B. J. Howell, Ph.D. Michigan.

Research Assistant Professor: J. A. Bass, Ph.D. Kansas State (part-time).

Instructor: M. A. Bass, Ph.D. Kansas State (part-time).

1Alumni Distinguished Service Professor.

UNDERGRADUATE

A B.A. major in anthropology shall consist of 42 hours, 12 of which are to be in the introductory 2500-level courses, of the remaining 30 hours, 3333, 4480 and six hours are required in each of these subfields: (a) Cultural; (b) Physical; and (c) Archaeology.

(a) Cultural: 3240, 3340, 3450, 3550, 3540, 3560, 3580, 3700, 4111, 4200, 4240, 4250, 4400, 4420, 4450, 4550, 4560, 4740; (b) Physical: 2910, 2920, 2930, 3070, 3900, 3920, 4930, 4940, 4950, 4960; (c) Archaeology: 3610, 3611, 3620, 3630, 3640, 3670, 4400, 4600, 4610, 4640, 4650. At least 24 of these hours must be at the 3000-level or above. Students with senior standing may also substitute appropriate 5000-level courses with permission of the appropriate instructor.

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

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

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

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

2910 Human Paleontology (3) Examination of the human fossil record with emphasis on the analysis and explanation for the emergence and subsequent evolution of humans from the perspective of the biological sciences. Prereq: 2510 or consent of instructor.

2920 Human Identification (3) Analysis of basic techniques applicable to the study of human skeletal biology and the identification of human skeletal material in forensic medicine. Prereq: 2510.

2930 The Biology of Races (3) Processes of racial differentiation with emphasis on genetic and adaptive factors; influence of interaction between biology and culture in race formation; analysis of studies concerning blood groups, constitution, growth, and nutrition in humans. Prereq: 2510.

3010 Prehistoric Humans and Their Lifeways (3) A survey of the development of humans and their cultural behavior from earliest evidence of humans until the end of the Pleistocene. Emphasis on the interaction between cultural and biological development and adaptation. Prereq: 2510 or 2520 recommended.

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

3333 Visiting Lecture Program (3) Developed around lectures by visiting scholars in physical anthropology, cultural anthropology, or archaeology. Offered fall quarter with subdisciplines repeated on rotating basis. May be repeated. Maximum credit 9 hours.

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.

3420 Linguistic Anthropology (3) Basic linguistic concepts and their applications in cultural anthropology. Relationship between language and culture. Prereq: 2530 or Linguistics 2000. (Same as Linguistics 3420.)

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

3450 Community Studies in Complex Culture (3) Review of cross-cultural comparative urban and village communities and methodologies used in community studies. 2530 recommended.

3460 Alcohol, Health and Culture (3) Socio-cultural perspectives and consequences of alcohol use/abuse in various cultural groups.

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

3530 Peoples and Cultures of Africa (3) Ethnographic survey of attitudinal cultures of sub-Saharan Africa. Cultural diversity and human ecology in a real perspective. 2530 recommended.

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


3550 Cherokee Ethnology (3) Survey of sociopolitical aspects of internal affairs and external relationships from first European contact to present. Emphasis on 18th and 19th centuries.


3850 Peoples and Cultures of Mesoamerica (3) Ethnographic survey of aboriginal peoples and post-conquest changes in Indian cultures. Emphasis upon analysis of small rural communities using modern village studies as source material. Recommended prereq: 2530. (Same as Latin American Studies 3580.)

3610 Archaeology of United States and Canada I (3) Survey of prehistoric peoples north of Mexico from initial occupation to European contact. 2520 recommended.

3611 Archaeology of United States and Canada II (3) Prehistoric archaeology of Euro-American, African-American, and Asian-American cultures in the United States and Canada from the 15th to the 20th centuries.

3620 European Prehistory I (3) Cultural developments during Paleolithic, Mesolithic, and Neolithic periods. 2520 recommended.

3630 European Prehistory II (3) Cultural developments during Metal Ages. From close of Neolithic through Iron Age. 2520 recommended. 3620 and 3630 should be taken in sequence.

3660 Prehistory of Tennessee (3) History of archaeological research in Tennessee and survey of prehistoric American Indian cultures identified through research.

3670 Principles of Archaeology (2) Research strategies in archaeological excavation, interpretation, and explanation. Prereq: 2520 or consent of instructor.

3700 Forms of Folklore (4) Introduction to anthropological study of folklore.

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

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

4101 Foreign Study (1-16) See page 159.

4102 Off-Campus Study (1-16) See page 159.

4103 Independent Study (1-16) See page 159.

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. Particular attention is paid to American Indians, African tribal groups, and Asian culture. (Same as Education C & 14111.)

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

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

4250 Medical Anthropology: Lecture (3) Survey of medical anthropology. Emphasis on Western and non-Western cultural aspects of health, disease, treatment, death, and related concepts. Focus on analyses and descriptions of anthropological fieldwork.
4300 Readings in Anthropology (1-9) Intensive reading, problem oriented. For anthropology majors with senior standing. Others by consent of instructor. May be repeated to a maximum of 9 credit hours.

4340 Field Work in Archaeology (3-9) Practicum work surveying, excavating, processing, and analyzing data; intensive reading. Prereq: 2510-20-30 and consent of instructor. May be repeated to a maximum of 9 credit hours.

4400 Cultural Ecology (3) Survey of concepts and methods in studying dynamic interaction between cultures and their environments. Topics include ecological theory, methods of analysis, and application from selected case studies. Prereq: Anthropology 2520 or 2530, or 3410, or consent of instructor.

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

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

4480 Current Trends in Anthropology (3) Analytical interpretive review for symposium of current disciplines, research directions, theories, fieldwork methods, and general assumptions of the four subfields of anthropo-

logy: physical anthropology, linguistic, and cultural anthropology. Required of anthropology majors in senior year. Prereq: Senior standing.

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

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

4600 Method and Theory in American Archaeology (3) Historical development of New World archaeology with emphasis on theory and field techniques. Prereq: 2520 or consent of instructor.

4610 African Prehistory (3) Survey of cultural history in Africa, south of the Sahara, from earliest evidence of human activity to time of European contact. Prereq: 2520 or consent of instructor.

4640 Zooarchaeology (3) Basic osteological studies of vertebrate classes; emphasis on aboriginal man's utilization of native animals in his subsistence and cultural adaptation. Identification, analysis, and interpretation of archaeological molluscan and vertebrate remains.

4650 Archaeology of Southeastern United States (3) Intensive study of prehistoric American Indian. Special emphasis on the Southeastern prehistoric. Prereq: 3610 or consent of instructor.

4720 American Folklore (3) Anthropological perspectives on folklore of geographical regions and ethnic groups of the United States. Prereq: 3700 or consent of instructor.

4740 Southern Appalachian Folk Culture (3) A survey of the settlement history and economic development of southern Appalachia in relation to its traditional culture: economics, social organization, beliefs and values, oral traditions, and customs. Consent of instructor.

4741 Research in Southern Appalachian Folk Culture (3) Research-oriented course dealing with a wide range of traditional cultural phenomena. Prereq: 2530, or consent of instructor. May be repeated. Maximum 6 hrs.

4760 Italian Folklore (3) (Same as Romance Languages 4760.)

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

4940 Biology of Native Americans (3) American Indian origins and evolution; influence of ecology, environment, and methodological issues on skeletal remains and morphology and genetics of living populations. Emphasis on North American Indians. Prereq: 2510 or consent of instructor.

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

4960 Primate Paleontology (3) Survey of fossil primate forms and determination of major primate lineages, emphasizing the earliest Hominid and related forms. Prereq: 2510. Recommended: Zoology 4360.

The general requirements for the master's and doctoral degrees, as well as the course description, are given in the Graduate Catalog.

Arabic

Sea Cultural Studies.

Art (140)

Professors: Dr. Kurka (Head), Ph.D. New York; R. J. Clarke, M.S. Wisconsin; D. G. Cleaver, Ph.D. Chicago; J. S. Falsetti, M.S. Ohio State; W. C. Kennedy, M.F.A. Wisconsin; F. H. Martinson, Ph.D. Chicago; B. G. McKeoby, M.F.A. Tulane; P. G. Nichols, M.F.A. Michigan; F. C. Stewart, M.F.A. Claremont.


Instructors: L. J. Kocianski, M.F.A. California (Davis); T. C. Sauppe, M.S. Wisconsin.

BI PETA PHI ARROWMOUNT SCHOOL OF CRAFTS

Lecturers, summer 1981:

D. Agudo; K. Bates; P. Bourke; E. Carlos; M. Croft; D. Daehnert; M. D. DeWitt; R. Donhausen; E. Erickson; J. Furrer; M. Goldstein; M. Golding; P. Grayson; P. Hasler; M. Hu; W. Hunt; C. Jansen; A. Kasuba; C. Kipich; J. Klein; B. Klop; T. Lang; M. Lenderman; B. Low; H. McNaughton; J. McQueen; T. Markuson; G. Oberski; P. Pajk; R. Pajol; B. Ramsey; T. Reising; Sr. M. Revor; J. Roberts; V. Rivero; J. Sahlstrander; L. Schlueter; W. Seelig; G. Spinks; J. Suomalainen; T. Turner; D. Valenki; D. B. Vandommelen; J. Wallace; D. Warner; L. Watson; C. Yarbrough; N. Zarnowsky.

Each summer the craft workshops in Gatlinburg, Tennessee, are made possible through cooperative efforts between the Department of Art and the Pi Beta Phi Arrowmount School of Crafts. The Pi Beta Phi Fraternity provides the funds, the facilities, and the management for Arrowmount. The University of Tennessee, Knoxville, College of Liberal Arts, Department of Art appoints the instructors and provides for the administration of craft classes with appropriate accreditation. In addition to providing advanced instruction in designer-created crafts through classes taught by nationally known craftspeople, the craft workshops have expanded to include commissioned work in art history courses number 2000 and above. Greek and Roman art and archaeology from the Department of Classics may be included. Art 1815 and 1825 are prerequisites to the major. Undergraduate work in art history is enhanced by knowledge of at least one foreign language and by studio art experience. Graduate work normally requires reading knowledge of at least two foreign languages, usually German and French.

200 Visual Art (4) Lecture course with guest artists for art majors and non-art majors. Role of visual artist. Language of art and design. Materials and processes of art disciplines (painting, sculpture, graphics, craft, photography, and architecture). Major issues and concerns in visual arts and career opportunities. Must be taken freshman year.

110 Introduction to Studio Art: Various Media (4) Instruction to individuals interested in individual sections for various artistic disciplines. For non-majors only. Course may be repeated; medium may not be repeated. Maximum 12 hrs.

115 Studio Fundamentals (4) Development of observational skills and perception of reality. Fundamentals of drawing—line, tone, space, form, and composition. Presentation of architecture, interior design, and art education majors.

125 Studio Fundamentals (4) Surface composition and color. Primarily for art, architecture, interior design, and art education majors.

135 Studio Fundamentals (4) Real space and volume. Primarily for art, architecture, art education, and interior design and housing majors.

170 Experiencing Art (4) Form and meaning in visual arts. Lecture discussion. Especially for non-majors.

1815 World Art I (4) Art from ancient, classic, and imperial civilizations of Asia, Africa, Europe, and America. Prerequisites: history or theology, or consent of instructor.

1825 World Art II (4) Study through slides and lectures of works of great artists from the conicado di Vinci and Michelangelo to Matisse and Picasso.

204 Special Topics (1-4) Student or instructor initiated course offered at convenience of Department. May be repeated.
2006 Special Topics (2-4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

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

2105 Survey of Drawing (4) Further exploration and refinement of fundamental aspects of drawing with more emphasis on composition and techniques. Prereq: 1115.

2106 Special Topics in Drawing (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

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


2205 Introduction to Painting (4) Capacities 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 hours.

2215 Painting II (4) Techniques of expression in oil and/or acrylic. May be repeated. Maximum credit 6 hours. Prereq: 2205 for art majors, none for non-art majors.

2256 Special Topics in Fiber and Fabrics (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

2260 Fabric: Painting and Dyeing (4) Survey of painting and dyeing processes in the development of surface design on fabric. Includes batik, direct drawing, and/or other related approaches.

2265 Fiber: Three-Dimensional Non-woven Structures (4) Development of three-dimensional structures through non-woven fiber techniques. Crochet, half-stitch knitting, and/or coiling.


2275 Fiber: Woven Structures (4) The woven structure as two-dimensional surface. Tapestry, knotted pile, woven weave techniques in the development of imagery, color structures and textual surface.


2285 Fiber: Fabricated Structure (3) Fabricating methods for two and three dimensional fiber structures. Experimental approaches to weaving, wrapping and/or knotless netting. Traditional and non-traditional materials.

2305 Introduction to Watercolor (4) Capacities of transparent watercolor. Prereq: 1115, 1125, 1135 for art majors, none for non-art majors.

2315 Watercolor II (4) Techniques that make watercolor a major medium of expression. May be repeated. Maximum credit 8 hours. Prereq: 2305 for art majors, none for non-art majors.

2405 Introduction to Sculpture (4) Problems in clay modeling, clay construction, and basic plaster casting techniques.

2406 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 hours.

2407 Sculpture: Mixed Media (4) The use of two or more materials, and a variety of sculptural techniques, joined to create dimensional form. Possibilities include carving, modeling, mounding, construction and found objects. May be repeated. Maximum 8 hrs.

2408 Sculpture: Metal Casting (4) Introductory metal casting methods of bronze or aluminum. May include lost wax, styrofoam sand, ceramic shell casting methods. May be repeated. Maximum 8 hours.

2409 Sculpture: Welding and Metal Fabrication (4) Introduction to metal fabrication/arc and oxyacetylene welding and use of joints. Prereq: 1115-25-35 for art majors, none for non-art majors.

2415 Sculpture II (4) Development of skills and experience in particular area of sculpture as agreed by student and instructor. Prereq: Determined by department. Maximum credit 8 hours. Prereq: 2405.

2416 Sculpture: Life Modeling (4) Modeling techniques in clay and wax, working from figure. Possibilities of expression with human figure as subject. Emphasis on modeling process as both observational and material handling technique. Students desiring to cast their work are advised to do so in 2415 or 3415 taken after this course. Prereq: 1115, 1125, 1135, or consent of instructor. May be repeated. Maximum 8 hours.

2450 Introduction to Wood Sculpture (4) Exploration of wood as design media. Introduction to power tools and basic skills in lamination, finishing, carving, and use of joints. Prereq: 1115-25-35 for art majors, none for non-art majors.

2460 Wood Sculpture: Studio Projects (4) Application of lamination and carving skills in designing utilitarian and nonutilitarian art objects. Prereq: 2450. May be repeated. Maximum credit 8 hours.

2505 Introduction to Graphic Design/Illustration (4-5) Survey of methods of advertising design. Study of use of design tools and equipment. Prereq: 1115, 1125, 1135 for art majors, none for non-art majors. Will not substitute for 2516.

2506 Special Topics in Graphic Design/Illustration (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.


2516 Advertising Design (4) Fundamentals of lettering and layout for newspaper, magazine, television, outdoor advertising. Non-art majors only.


2566 Introduction to Printmaking (4) Relief, lithography, intaglio, and screen printing.

2615 Intaglio II (4) Metal plate intaglio printing in traditional and contemporary techniques of etching, drypoint, mezzotint, aquatint, and phototinting. May be repeated. Maximum credit 8 hours.

2616 Lithography II (4) Exploration of stone and aluminum plate lithography applying traditional and contemporary printing techniques. May be repeated. Maximum credit 8 hours.

2617 Screen Printing II (4) Creative explorations of a variety of screen printing techniques. May be repeated. Maximum credit 8 hours.

2655 Introduction to Metal Design (4) Basic techniques of jewelry and metalworking. Prereq: 1115, 1125, 1135, 1140. May be repeated. Maximum credit 8 hours.

2665 Metal Design II: Jewellery (4) Additional jewelry and metalworking techniques including casting, stone setting, and forming. Prereq: 2655. May be repeated. Maximum credit 8 hours.

2675 Metal Design II: Enameling (4) Exploration of vitreous enamel as individual art form and in combination with other materials. Prereq: 2655. May be repeated. Maximum credit 8 hours.

2705 Black Art (4) Black art history in America. 15th century to contemporary trends. (Same as Afro-American Studies 2705.)

2905 Introduction to Photography (4) Introduction to the art of black and white photography. Field and studio shooting, history of photography, basic developing and enlarging techniques.

3235 Fiber Design (4) Introductory theory and practice of fiber design. Emphasis on graphic elements through use of motion picture camera. May not receive credit for both 2116 and 2905.


2956 Special Topics in Ceramics (4) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

2960 Ceramics II: Handbuilding Techniques (4) Prereq: 2950.

2970 Ceramics II: Wheel Techniques (4) Prereq: 2960.

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

3115 Drawing III (4) Development of personal drawing techniques and concepts through class problems. May be repeated. Maximum credit 12 hours. Prereq: 2115.

3215 Painting III (4) Individual experience with varied media on canvas. May be repeated. Maximum credit 12 hours. Prereq: 8 hours of credit in 2215 for art majors; consent of instructor for non-art majors.

3270 Fabric: Individual Class Projects (4) Prereq: 8 hours from 2260, 2270, 2280 or consent of instructor. May be repeated. Maximum 12 hrs.

3275 Fiber: Individual Class Projects (4) Prereq: 8 hours from 2265, 2275, 2285 or consent of instructor. May be repeated. Maximum 12 hrs.

3315 Watercolor III (4) Individual experience with varied water-based media on paper. May be repeated. Maximum credit 12 hours. Prereq: 8 hours of credit in 2315 for art majors; consent of instructor for non-art majors.

3415 Advanced Sculpture III (4) Individual projects through discussion with instructor. May be designed to widen previous experience. Prereq: Permission of instructor. May be repeated. Maximum 12 hours.

3416 Sculpture: Advanced Life Modeling (4) Advanced modeling techniques in clay and wax, working from figure. Prereq: 2416 or consent of instructor. May be repeated. Maximum 8 hours.


3516 Typography (4) Theories and techniques of typesetting and printing as fine art medium. Creative problems are solved using type and printing presses. May be repeated. Maximum credit 12 hours.

3517 Airbrush (4) Technique of airbrush. Emphasis on skill and creative applications. May be repeated once for credit. For art majors only.


3535 Package Design (4) Study of contemporary concepts and techniques applied to all types of package design and production. Prereq: 3515, 3525.

3536 Intaglio III (4) Color intaglio printing from zinc or cardboard plates. Extra techniques—mezzotint, sand-paper, etc. May be repeated. Maximum credit 12 hours.
3616 Lithography Ill (4) Color lithography from stone or plates. Extra techniques—stone engraving, acid etch, intaglio, reverse. May be repeated. Maximum credit 12 hours.

3617 Screen Printing (4) Stencils: making of hand-made negatives on transparent film. May be repeated. Maximum credit 12 hours.

3665 Metal Design Ill: Individual Class Projects (4) Prereq: 2665 or 2675 or consent of instructor. May be repeated. Maximum credit 12 hours.

3704 Medieval Art (4) Byzantine and western art of Middle Ages: manuscript illumination, mosaic, Romanesque pilgrimage church, Gothic cathedral.

3705 Northern European Painting: 1350-1600 (4) From courtly art of late Middle Ages to Northern Renaissance. Jan van Eyck, Roger van der Weyden, Bosch, and Durer; early printmakers.


3725 Art of Southern Europe and New World, 1550-1830: Iberia and Latin America; Pop, Op, Minimal, and Concept art.

3726 The Art of Northern Europe, 1550-1765 (4) Concentrated study of Bruegel, Rubens, Rembrandt, Georges de la Tour, Vermeer, Poussin, and Hals.

3735 History of Nineteenth-Century Painting in Europe and America (4) Emphasis with France: Neoclassicism, Romanticism, Friedrich, Constable, Turner, Courbet and Barbizon landscapists, Hudson River Group, Pre-Raphaelite Brotherhood, Manet, Courbet, Impressionism, Eakins, Homer, Seurat through Cezanne.

3736 History of Twentieth-Century Painting in Europe and America (4) Fauvism, Die Brucke, Cubism, Der Blaue Reiter, Futurism, Dada, Surrealism, geometric abstraction, social commentary painting, Abstract Expressionism in the U.S.A. and parallels in Europe; Pop, Op, Minimal, and Concept art.

3745 History of Modern Architecture in Europe and America (4) Survey of 19th-century styles, Sullivan and skyscraper. 20th century: Viennese leaders, the Bauhaus, Gropius, Van der Rohe, Le Corbusier, and skyscraper. 20th century: Viennese leaders, the Bauhaus, Gropius, Van der Rohe, Le Corbusier, and skyscraper.

3776 Chinese Art (4) 3777 Japanese Art (4)

4315 Introduction to Museology (3) Concepts, practices, and historical development of museums of art, archaeology, anthropology, and science. (Same as Anthropology 3611)

4305 Intermediate Photography (4) Individual example in the photographic medium. May be repeated. Maximum credit 12 hours. Prereq: 2905 or consent of instructor.

4395 Film Design (4) Theory and practice of film making. Prereq: 2935.

4396 Glazes (4) Prereq: 2970.

4396 Ceramics Ill: Individual Class Projects (4) Prereq: 3950 or consent of instructor. May be repeated. Maximum credit 8 hours.

4004 Special Topics (1-4) Student or instructor initiated course offered at convenience of Department. May be repeated.

4006 Special Topics (2-4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

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

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

4016 Special Topics in Drawing (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

4101 Foreign Study (1-16) See page 159.

4102 Off-Campus Study (1-16) See page 159.

4103 Independent Study (1-16) See page 159.

4115 Drawing IV (4) Individualized pursuit of personal drawing techniques and concepts, supplemented by individual and group critiques as well as weekly life drawing sessions. May be repeated. Maximum credit 12 hours. Prereq: 12 hours of 3115.

4150 Craft Media (4) Possibilities and limitations of variety of craft media; designing and executing craft problems using inexpensive materials and tools. For non-art majors only.

4206 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 hours.

4215 Painting IV (4) Individual concepts on personal expression with varied media on canvas. May be repeated. Maximum credit 12 hours. Prereq: 12 hours in 3215 for art majors, consent of instructor for non-art majors.

4256 Special Topics in Fiber and Fabrics (4) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

4270 Fabric: Advanced Projects (4) Prereq: 8 hours of 2370 or consent of instructor. May be repeated. Maximum credit 12 hours.

4275 Fiber: Advanced Projects (4) Prereq: 8 hours of 3275 or consent of instructor. May be repeated. Maximum credit 12 hours.

4315 Watercolor IV (4) Individual concepts in personal expression with varied water-based media on paper. May be repeated. Maximum credit 12 hours. Prereq: 12 hours in 3315 for art majors, consent of instructor for non-art majors.

4406 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 hours.

4415 Advanced Sculpture IV (4) Individual development of sculptural problems and techniques. May be repeated. Maximum credit 12 hours. Prereq: Permission of instructor.

4470 Advanced Wood Sculpture (4) Application of laminating, carving, and joining techniques in design and construction of contemporary forms. Prereq: 3450 or consent of instructor. May be repeated. Maximum credit 12 hours.

4506 Special Topics in Graphic Design/Illustration (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

4515 Corporate Design (4) Concepts of corporate graphics. Problems include all areas of graphic design and illustration. Prereq: 3355. May be repeated. Maximum credit 12 hours.

4516 Portfolio and Exhibition Techniques (4) Application of design principles as they relate to promotion, construction, display, and evaluation for two- and three-dimensional artists. Prereq: Senior or graduate standing or consent of instructor.


4545 Visual Communications Seminar (2) Political, social, economic, and ethical problems of contemporary designer. Sessions with outside guest speakers and field trips are employed. Prereq: 4515.

4606 Special Topics in Printmaking (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 16 hours.

4615 Intaglio IV (4) Photographic, collage techniques; combining printing with media. May be repeated. Maximum credit 12 hours.

4616 Lithography IV (4) Extensive use of aluminum plates, color combine printing, photographic techniques. May be repeated. Maximum credit 12 hours.

417 Screen Printing (4) Traditional hand cut and photographic stencils, combine printing on paper and other surfaces. May be repeated. Maximum credit 12 hours.


4855 Studies in Art History (3) Concentration in selected areas. Prereq: 16 hours of art history and consent of instructor. May be repeated. Maximum credit 6 hours.

4956 Special Topics in Ceramics (4) Student of instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hours.

4960 Ceramics IV: Advanced Projects (4) Prereq: 3960. May be repeated. Maximum credit 12 hours.

4970 Glaze Calculation (4) Prereq: Senior or graduate standing and consent of instructor.

4971 Kiln Construction (4) Prereq: Senior or graduate standing and consent of instructor.

The following courses are offered periodically ONLY at the Pi Beta Phi Arrowmont School of Arts and Crafts, Gatlinburg, Tennessee. Content varies with faculty. Students should check specific course content as printed in the Arrowmont timetable published each spring.

2104 Drawing (1-4) Beginning to intermediate. May be repeated.

2204 Painting (1-4) Beginning to intermediate. May be repeated.

2254 Fiber Processes (1-4) Beginning to intermediate. May be repeated.

2264 Fiber Constructions (1-4) Beginning to intermediate. May be repeated.
Asian Studies
See Cultural Studies.

Astronomy
See Physics and Astronomy.

Audiology and Speech Pathology (160)

Professors:
H. L. Lupey (Head), Ph.D. Ohio State; S. Adler, Ph.D. Ohio State; C. W. Asp, Ph.D. Ohio State; J. C. Kerney, Ph.D. Illinois; D. M. Laposata, Ph.D. Washington; I. V. Nabelek, Ph.D. Czech Technical (Prague); H. A. Peterson, Ph.D. Illinois; B. Silverstein, Ph.D. Purdue.

Associate Professors:
S. B. Burnfield, Ph.D. Michigan State; C. G. Maisel, M.Ed. Texas.

Assistant Professors:
A. O. Defendorf, Ph.D. Washington; C. J. Ferrell, M.A. Tennessee; E. I. Hamby, Ph.D. Iowa.

Instructors:

UNDERGRADUATE

General Information. The Department of Audiology and Speech Pathology offers course work in the scientific study of human communication sciences and disorders. The two undergraduate majors (audiology and speech pathology) are pre-professional; that is, they are preparatory to graduate work and to professional certification in some aspect of speech, language and hearing disorders. The master's degree is required for most professional certificates and employment positions. Information about the audiology and speech pathology programs may be obtained from the departmental office, 457 So. Stadium Hall.

Students who wish to enroll in clinical training courses in speech pathology must apply for admission at the Hearing and Speech Center prior to the initial practicum enrollment. Clinical success is defined as performance judged as "adequate" on at least 75 percent of the clinical contact hours assigned during each quarter's enrollment. Failure to meet either the academic or academic success criteria for two successive quarters automatically removes the student from clinical practice.

400 Introduction to Speech Pathology and Audiology (3) (Same as Special Education 4030.) F, W.

4050 Speech and Language Development (4) Speech and language development in the normal child including development of distinctive features and implications of this process for diagnosis of speech and language disorders. Prereq: Psychology 3850 or Educational Psychology 2450 recommended. F, W.

310 Articulation Disorders (4) Etiology, diagnosis, and treatment of articulatory defects. Prereq: 3040, 3050, or consent of instructor. (Same as Special Education 3110.) W, SU.

3160 Phonetics (3) Basic phonetics including recognition and production of spoken English sounds with analysis of their formation; acoustic characteristics of speech and speech perception. F, W.

3200 Speech Science I (4) Anatomy and physiology of speech production mechanism. Prereq: 3050. W, SU.

3201 Speech Science II (4) Anatomy and physiology of speech production mechanism. Prereq: 3050. W, SU.

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

4210 Language Development of the Hearing Impaired (3) (Same as Special Education 4210.) F, W.

4220 Language Development of the Hearing Impaired (3) (Same as Special Education 4220.) F, W.

4310 Language Development of the Hearing Impaired (3) (Same as Special Education 4310.) F, W.

4320 Introduction to Clinical Practice in Speech Pathology (3) Prereq: 3040, 3050, 3310, 4040, and consent of instructor. S/NC. (Same as Special Education 4320.) F, W.

4330 Clinical Practice in Speech Pathology (1-6) Prereq: 4320 and consent of instructor. S/NC. (Same as Special Education 4330.) E.

4332 Clinical Practice in Speech Pathology (1-6) Prereq: 4320 and consent of instructor. S/NC. (Same as Special Education 4330.) E.

4333 Clinical Practice in Speech Pathology (1-6) Prereq: 4320 and consent of instructor. S/NC. (Same as Special Education 4330.) E.

4334 Clinical Practice in Speech Pathology (1-6) Prereq: 4320 and consent of instructor. S/NC. (Same as Special Education 4330.) E.

4335 Clinical Practice in Speech Pathology (1-6) Prereq: 4320 and consent of instructor. S/NC. (Same as Special Education 4330.) E.

4336 Clinical Practice in Speech Pathology (1-6) Prereq: 4320 and consent of instructor. S/NC. (Same as Special Education 4330.) E.
**Bacteriology**

See Microbiology.

**Biochemistry (188)**

**Professors:**
- W. D. Wicks, Ph.D. Harvard (Head);
- J. E. Churchich, Ph.D. Sheffeld (Director of Graduate Studies);
- J. A. Joshi, Ph.D. Poona (India);
- K. J. Monty, Ph.D. Rochester.

**Associate Professors:**
- L. Huang, Ph.D. Michigan State.

**Graduate Assistant Professors:**
- R. H. Feinberg, Ph.D. California (Berkley);
- E. Freire, Ph.D. Virginia;
- J. Koontz, Ph.D. Kentucky;
- J. Richter, Ph.D. Arizona State.

**UNDERGRADUATE**

No major is offered, although course work in biochemistry is applicable to majors in biology and chemistry.

For the Bachelor of Arts degree with a minor in biochemistry, the following courses are required: Chemistry 2100-49, 3211-21-30, 3219-29-39, and Biochemistry 4110-20 and 4119. Additional credits from Biochemistry 4210-20-30 and/or 4500 are desirable.

**3110 Introduction to Biochemistry (4)** Biochemical principles underlying physiological events in animal tissues. Metabolism of carbohydrate, lipid, protein, and nucleic acids. Biochemistry of body fluids. Action of drugs and hormones. Prereq. Chemistry 1110-20 or 1210-20-30 and at least 2 quarters of introductory biological sciences. Not available for credit if credit has been previously received for 4110 or 4120.

**4120-20 Cellular and Comparative Biochemistry (4.4)** Electrophoretic behavior; chemistry and structure of proteins; enzyme behavior and biological function; catabolism and energy capture; synthetic metabolism; nucleic acid function; protein synthesis and biochemical genetics; regulation of biological processes. Must be taken in sequence. Prereq. Chemistry 3211-21-31, 3219-29-39, and one course from Biology 1210-20-30 or Botany 1110-20-30. Three lectures and discussion.

**4119 Cellular and Comparative Biochemistry Laboratory (2)** Basic biochemical procedures of general application in biochemistry and molecular biology. Prereq. or coreq. 4110.

**4129 Cellular and Comparative Biochemistry Lab (2)** In-depth study experiments with enzymes, nucleic acids and membranes/organelles. Chromatography, kinetics, hybridizations, gel filtration, sedimentation, radioisotopic labeling, and immunochromatographic analysis. Prereq. or coreq. 4120 or 4110. W.

**4130 Selected Topics in Biochemistry and Molecular Biology (3)** Biochemistry as it relates to current research interest (e.g., recombinant DNA, monoclonal antibodies, biotechnology, etc.). Emphasis will be on original literature and the experimental basis of current knowledge. Historical background, impact on society, the making of moral and ethical judgments, and future development of the technologies will also be discussed. Written reports required. Prereq. 4110-20. S.

**4210-20 Introduction to Physical Biochemistry (3.3)** 4210—Introduction to thermodynamics: phase stability and phase change; chemical potential; osmotic pressure; activity and the Debye-Huckel model; electrochemistry; membrane permeability. 4220—Elements of statistical mechanics, diffusion, collision theory; chemical kinetics; and transition state theory; higher order kinetics; specialized kinetics of enzymatic processes; some biochemical considerations. Prereq. Mathematics 1440-50-60, Chemistry 3211-21-31 and 3219-29-39, and an introductory course in biology.

**4230 Introduction to Physical Biochemistry (3)** Physical foundations of macromolecules: polymerized light, absorption and fluorescence, sedimentation and transport hydrodynamics, electrophoretic mobility, light scattering, and structural x-ray crystallography of proteins and nucleic acids. Prereq. 4220 or Chemistry 3430, or equivalent.

**4500 Independent Research in Biochemistry (1-6)** Special experimental problems under direction of staff member. Limited to undergraduates and by consent only. May be repeated for credit. Prereq. or coreq. 4110-20, 4119.

**GRADUATE**

Master's and doctoral degree requirements, as well as course work in biochemistry, are listed in the Graduate Catalog. Master's degree candidates usually should offer an undergraduate major in biochemistry, biology or chemistry. Doctoral degree candidates must present an undergraduate major in biochemistry, biology or chemistry.

**Biology (190)**

**Coordinator:** J. K. Monty

A B.A. major in biology may be obtained by completing one of the three following concentrations:

A. Concentration in Cell Biology. Consists of Biology 3110-20-30, Chemistry 3211-21-31, 3219-29-39, Biochemistry 4110-20, and 12 hours of upper-division courses from: Biochemistry 4119, 4500; Botany, any 3000 or 4000-level courses (except 3050, 3070, 3090); Microbiology 3200, 3700, 3519, 4110-19, 4140-49, 4270-79, 4420, 4909; Zoology 3050, 3070, 3519, 4140-49, 4270-79, 4280, 4369, 4380, 4450. In meeting upper-division minimum requirement, not more than 8 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 1210-20-30 or Botany 1110-20, or 1118-28 or Zoology 1118-28 and Chemistry 1210-20-30. Consists of Mathematics 1841-51 (or 1840-50) plus one of the following: Computer Science 1510, 1610; Math 1180, 1200, 3050, 3060, 3861; Plant & Soil Science 3610; a year sequence in physics (except 1410-20-30); and Chemistry.

B. Concentration in Organismal and Systems Biology. Consists of Biology 3110, 3120, 3130, Chemistry 3211-21-31, 3219-29-39, and 18 hours of upper-division courses from: Biochemistry 4110-20, 4119, 4500; Botany, any 3000 or 4000-level courses including not more than one from 3050, 3070, 3090; Microbiology, any 3000 or 4000-level courses; Zoology, any 3000 or 4000-level courses except 3010-20-30 and 3090. In meeting upper-division minimum requirement, 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 emphasis are Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28 and Chemistry 1110-20-30. Consists of a 3-course math package described under Concentration A above or Math 1550-60 plus 3000; a year sequence in physics (except 1410-20-30) or Geology 1410-20-30.

C. Concentration in Ecology. Consists of Biology 3110-20-30, Chemistry 3211-21-31, and 3219-29-39, Environmental Engineering 3000, either Geography 3520 or Geography 3530, and 17 hours of upper-division courses from: Botany 3030, 3210, 4030, 4510; Forestry 3030, 3550, 3730, 4020; Geography 3520-30; Microbiology 4110, 4150; Wildlife 3200, 4500, 4460, 4510; Zoology 3080, 4240, 4469, 4720-29. In meeting upper-division minimum requirement, at least 8 hours must be chosen from the group Botany, Microbiology, and Zoology. Prerequisites to this concentration are Biology 1210-20-30 or
Botany 1110-20 or 1118-28 or Zoology 1118-28 and Chemistry 1110-20-30 Corequisites. are a 3-course math package as described under Concentration A above, or 1550-60, plus 3000; Physics 1210-20 or 2210-20.

Minor: Concentration of Biology 3110-20-30 and 12 hours of upper-division courses chosen from the list below. Biochemistry 4110-20, 4119, 5010; Botany, any 3000 or 4000-level courses; Microbiology, any 3000- or 4000-level course; Zoology, any 3030- or 4000-level courses except 3010-30. (In meeting the upper-division minimum requirement, not more than 10 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited.) Prerequisites to the minor are introductory biology courses (Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28) and Chemistry 1110-20-30.

Note: Certain upper-division courses require organic chemistry or other prerequisites; consult the catalog description in each case.

1210-20-30 General Biology (4,4,4) 1210—Biology of cells: chemical basis of life, cell structure and function, energetics, metabolism, DNA, RNA, protein synthesis, monera, protista, and fungi. 1220—Biology of plants and animals; survey of plant kingdom, structure and function, reproduction and growth, animal kingdom, reproduction and development in animals, animal tissue systems. 1230—Biology of Organisms, Genetics, evolution, populations and ecology. May be taken in any sequence. Students who receive credit for 1210-20-30 may not also receive credit for Botany 1110-20-30, 1118-28 or Zoology 1118-28-38. 1210-F, W; SU; 1220-W, W, SU; 1230-S, SU.

3110 General Genetics (4) Classical and modern principles of heredity. Prereq: 1210-20-30 or Botany 1110-20 or equivalent of 2 years of high school biology and satisfactory ACT scores; Chemistry 1110-20-30: 3 hours and 1 additional class meeting. May be taken in any sequence or combination with 3120 and 3130. E.

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

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

4510 Scientific Illustration (3) Introduction to design and representation of graphics, charts, for scientific illustration; planning of poster presentations and displays. No artistic talent assumed. Prereq: Advanced standing in a science curriculum; consent of instructor.


Associate Professors: C. C. Amundson, Ph.D. Colorado; J. D. Caponetti, Ph.D. Harvard; A. S. Heilman, Ph.D. Ohio State; R. H. Henke, Ph.D. Ohio State; O. J. I. Mikkelsen, Ph.D. Massachusetts; K. W. Hinchliffe, Ph.D. (Utah); B. M. Mullin, Ph.D. North Carolina State; O. J. Schwarz, Ph.D. North Carolina State; W. O. Smith, Ph.D. Duke.

Assistant Professors: E. E. Wolcott, Ph.D. (Dakota); D. K. Smith, Ph.D. Tennessee; B. E. Wolcott (Curator), Ph.D. Tennessee.
4830 Field Measurements in Plant Ecology (3) Practice in the use of field and laboratory instruments for the measurement of environmental factors, plant functions, and/or community characteristics. Data collection will be followed by analysis and interpretation of data. Visits to highly instrumented field sites will be included. Prereq: 3030 or equivalent; 1 year of physics and chemistry recommended. F.

GRADUATE
Consult the Graduate Catalog for listing of graduate level courses.

Chemistry (205)

Professors:
G. Mamantov (Head), Ph.D. Louisiana State; J. E. Bloor, Ph.D. Manchester (England); N. S. Bowman (Emeritus), Ph.D. Princeton; C. A. Buehler (Emeritus), Ph.D. Ohio State; W. E. Bull, Ph.D. Illinois; J. G. Chambers, Ph.D. Kansas; J. A. Dean (Emeritus), Ph.D. Michigan; J. F. Eastham, Ph.D. California (Berkeley); W. H. Fletcher, Ph.D. Minnesota; G. W. Kabalka, Ph.D. Purdue; D. C. Kleinfelter, Ph.D. Princeton; M. H. Lietzke, Ph.D. Wisconsin; R. M. Magid, Ph.D. Yale; R. F. M. Pagni, Ph.D. Wisconsin; J. R. Peterson, Ph.D. California (Berkeley); G. K. Schwindt, Ph.D. Texas A&M; R. F. Willey (Emeritus), Ph.D. Iowa State; W. T. Smith, Ph.D. Emeritus, Ph.D. Ohio State; W. A. Van Hook, Ph.D. Johns Hopkins; E. L. Wehry, Ph.D. Purdue; T. F. Williams, Ph.D. London (England); J. H. Wood (Emeritus), Ph.D. North Carolina.

Associate Professors:
J. L. Adcock, Ph.D. Texas; F. A. Grimm, Ph.D. Cornell; J. D. Kovac, Ph.D. Yale; C. A. Lane, Ph.D. California (Berkeley); L. J. Magid, Ph.D. Tennessee; F. M. Schnell, Ph.D. Indiana; C. Woods, Ill.; Ph.D. North Carolina State.

Assistant Professors:
S. D. Alexandratos, Ph.D. California (Berkeley); M. J. Sepanak, Ph.D. Iowa State.

# Alumni Distinguished Service Professor

UNDERGRADUATE
For information regarding the Bachelor of Science in Chemistry degree and the cooperative program in chemistry, see page 157.

For students wishing to major in chemistry and desiring a more flexible course of study than the B.S., Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 2140, 2142; Chemistry 2140, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)

A minor in chemistry should consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-23, 3219-29-39, 4910-20-30, 4929 and 10 hours of additional upper-division work in chemistry including at least one of the following courses: Chemistry 4210, 4220, 4310, 4510, 4550. (Up to 6 hours of Biochemistry 4110-20 or Geology 4610 may be applied to the 10-hour requirement.)
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 sequences may be substituted for 1120 or 1130. Credit may be received for only one of the courses 1110, 1310, or 1510.

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 12. Students may not take this course for credit if they have not completed 1120-30 as a prerequisite. Students may use this course as a prerequisite for the honors requirement in the chemistry department.

Chemistry 1110-20-30 is a prerequisite for 1510-20, 1510-30, and 1510-40. It is required of chemistry majors or minors. Credit may not be received for both Chemistry 2290 and 3211, toward graduation or otherwise. F, S.

3211-21-31 Organic Chemistry (3,3,3) Introduces modern chemical theory and reaction mechanisms. Spectroscopic and other physical properties. Must be taken in sequence. Prereq: 1110-18. Corresponding laboratory 3519-29-39 is recommended, not having credit for the laboratory. 3211-21-F, W, S; 3231-E.

3219-29-39 Organic Chemistry Laboratory (1,1,1) Experiments on topics discussed in 3211-21-31. Corresponding lecture 3211-21-31 is coreq for students not having credit for the lecture. 3219-29-F, W; 3239-E.

3310 Molecular Basis of Polymers (3) Molecular features of polymers as opposed to small molecules, polymerization reactions, polymer structures, and molecular characterization of polymers. Not for credit by chemistry majors. Coreq: 3329-A.

4110 Physical Chemistry (3) Theoretical aspects of chemistry on society, how scientists reach conclusions in chemistry, quantum mechanics of atomic and molecular systems. Molecular symmetry, crystal structure, and solid state. Statistical thermodynamics. Prereq: 3430. F, W.

4119 Physical Chemistry Laboratory (2) Solutions, phase equilibria, reaction kinetics and spectroscopy. Coreq: 4110. F, W.

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

4210 Advanced Analytical Chemistry (3) Chemical separations including chromatography, ion exchange, and solvent extraction; spectrophotometric techniques. Prereq: 2140-49. W.

4219 Advanced Analytical Chemistry Laboratory (2) Experiments on topics discussed in 4210. Coreq: 4210. W.

4220 Advanced Analytical Chemistry (3) Electroanalytical methods of analysis (including potentiometry, coulometry, polarography, and voltammetry); magnetic resonance methods, mass spectrometry; X-ray absorption and fluorescence techniques. Prereq: 2140-49, 3420 or 4920 recommended. S.

4229 Advanced Analytical Chemistry Laboratory (2) Experiments on topics discussed in 4220. Coreq: 4220. S.

4310 Introductory Polymer Chemistry (3) Fundamental principles, stressing the role of chemistry in the interdisciplinary field of polymer science; relations of molecular structure to bulk properties of polymers. Prereq: 3231; Prereq, or Coreq: 4920 or 3420. S.

4420 Physical Inorganic Chemistry (3) Theoretical concepts leading to an understanding of inorganic chemistry; quantum theory of the atom, principles of molecular structure, and fundamental nuclear chemistry. Prereq: 3410-30-W.

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

4510 Organic Qualitative Analysis (3) Identification of compounds and mixtures using advanced instrumental techniques as well as classical chemical approaches. Prereq: 3231-39. 3 labs. (Not open to students who have completed 4610.) F.


4610 Advanced Chemical Experimentation (2) Laboratory course in application of modern experimental techniques to solution of chemical problems. Synthesis and characterization of organic and inorganic compounds with emphasis on independent study using advanced techniques. Prereq: 3231-39 or 3231-3936. 4343-39. 4520. Students who receive credit for 4610 may not also receive credit for 4510. W.

4640 Chemical Instrumentation (4) Principles of chemical instrumentation, practice in the design and construction of chemical instruments. 2 hours and 2 labs. Prereq: 2143-49.

4710 Research in Chemistry (2) Open to senior majors with consent of department head. Written report must be submitted to research director at termination of project. May be repeated. Maximum credit 6 hours. E.

4811-21-31 Senior Seminar (1,1,1) Discussion by faculty and students of current research and topics from the recent literature which illustrate the role of chemistry. Problems in conjunction with present-day societal concerns (e.g., environment, energy, national security, nuclear warfare, etc.) Oral and written reports required. All chemistry majors are encouraged to attend. Prereq: Senior standing in chemistry.

4929 Biophysical Chemistry Laboratory (2) Experiments in the physical chemistry of biologically impor- tant systems. Coreq. 4920. Not open to students in 3410-20-30-29-39-S.

GRADUATE

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

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

The master's and doctoral degree requirements, as well as course listings, are found in the Graduate Catalog. The department offers specialization in nine areas for the Ph.D.: analytical, energy, environmental, inorganic, organic, physical, theoretical, chemical physics, and polymer science.

Chinese

See Cultural Studies (Asian Studies).

Classics (257)

Professors:
H. C. Rutledge (Head). Ph.D. Ohio State

Associate Professors:
G. C. Gesell, Ph.D. North Carolina (Chapel Hill); J. E. Sherwin, Ph.D. Pennsylvania (State University); Kathleen. Assistant Professors:
C. P. Craig, Ph.D. North Carolina (Chapel Hill); S. D. Martin, Ph.D. Michigan; D. W. Tandy, Ph.D. Yale.

Greek

UNDERGRADUATE

A B. A. major in Greek consists of 39 hours distributed as follows: 30 hours of Greek language courses numbered above 2000, and including 6 hours of Classics 4220 (senior seminar); 9 hours chosen from Classics 2210-20-30, 3310, 3340, 3350, 4101 (maximum of 6 hours with approval of the department), History 3121. The student majoring in Classics is encouraged to take 3 hours of classics 4220 (senior seminar).

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

1110-20-30 Beginning Latin (3,3,3) Must be taken in sequence. 1110-F, W, S; 1120-W, S; 1130-S.

2511 Intermediate Latin: Grammar Review and Prose Readings (3) Prereq.: Classics 2510 or demonstration of proficiency at that level. W.

2521 Intermediate Latin: Vergil's Aeneid (3) Prereq.: Three years of high school Latin (without Vergil) or Classics 2515 (or demonstration of proficiency at that level). S.

3140 Cicero (3) Prereq.: 3 or 4 years of high school Latin or 2521. F.

3150 Plautus and Terence (3) Prereq.: 3 or 4 years of high school Latin or 2521. S.

3160 Catullus and Horace (3)

3460 Livy (3) A.

4120 Horace, Satires and Epistles (3) A.

4140 Cicero and Techniques of Latin Prose Com- position (4) Recommended for Latin majors and mi- nors, especially those intending to teach or pursue graduate work. Works of Cicero studied as models for prose composition. A.

4310 Selected Readings from Latin Literature (3) A.

4320-30 Selected Readings from Latin Literature (3,3) May be repeated for credit. A.

4340 Horace, Odes (3) A.

4350 Tacitus (3) A.

4360 Lucretius (3) A.

4370 Readings in Medieval Latin (3) A.

GRADUATE

Consult the Graduate Catalog for a listing of graduate level courses.

GENERAL COURSES

2210 Early Greek Mythology (3) Comprehensive study of Greek myths with an emphasis on how they reflect the ancient Greek vision of the universe and man's place in it. Origins and development of Greek myths and the concurrent rise of organized religion. The symbolic use in later cultures of Greek mythic figures and events will be a persistent emphasis. In time the course goes from Bronze Age to about 500 B.C.

2220 Greek Mythology in the Classical Period (3) The use of myth in literature, history, religion, philoso- phy and art of Greece from about 500 B.C. to the death of Alexander the Great, with emphasis on new myths and new uses for old myths that reflect the proud confidence of the Classical Greeks.

2230 Roman Mythology (3) Myths created by the Romans; the gods of the state and the gods of the home. Contribution of myth and ritual to the Roman perception of man's relationship to divinity. Although the first century B.C. is its temporal focus, the course ranges from the Etruscans to the Oriental relations of the Empire, including early Christianity.

2320 Art and Archaeology of Ancient Greece (3) A survey of the development of Greek art with emphasis on architecture, sculpture, and painting with some attention to the minor arts and relationship of art and archaeology. Illustrated lectures.

2330 Art and Archaeology of Etruria and Rome (3) A survey of Etruscan and Roman art, with some attention to the major arts and urban planning. Classics 2320 is recommended for background. Illustrated lectures.

2510-20 Greek and Roman Literature in English Translation (4,4) 2510-Greek Literature. A survey of the major literature of ancient Greece from Homer to Menander, with emphasis on the sixth and fifth centu- ries B.C. 2520-Roman Literature. A survey of major literary works of the Romans from Plautus to Tacitus. How the Romans borrowed from the Greeks and then achieved their own artistic identity by the time of Vergil's Aeneid.

2710 Scientific and General Vocabulary from Greek (3) Study of word roots and words in English language derived from Greek. Designed to build general vocabu- lary with special emphasis on scientific and technical terminology.

2720 Scientific and General Vocabulary from Latin (3) Study of word roots and words in English language derived from Latin. Designed to build general vocabu- lary with special emphasis on scientific and technical terminology.

2730 Medical Terminology (3) The student prepares to make sense of, and so more easily remember, thousands of complex medical words through a knowl- edge of the simple classical roots which combine to form most medical vocabulary.
2740 Word Power: Basic Vocabulary from Greek and Latin (3) Vocabulary building from Greek and Latin bases. General, non-technical vocabulary. Exercises in English etymology. F, W, S.

3310 Art and Archaeology of the Aegean Bronze Age and Early Greece (3) Troy, the Cycladic islands, Greek mainland, and Crete. Emphasis on palaces of the Mycenaean and Minoan civilizations. Illustrated lectures. W.

3340 Cities of the Greek and Roman World (3) Archaeological survey of Greek and Roman cities from 1000 B.C. to A.D. 600. Focus on the development of city planning and quality of life. Such cities as Mycenae, Athens, Persepolis, Rome, and Leptis Magna will be studied. F.

3350 Shrines and Sanctuaries of the Greek and Roman World (3) Survey of major shrines and sanctuaries of Greek and Roman world with emphasis on archaeological remains. Such sites as Olympia, Epidauros, Paestum, Cumae, Praeneste, and Baalbek will be considered. Readings in selected classical authors add to understanding of place of great shrines and sanctuaries in Greek and Roman life. A.

3610 Greek Civilization (3) A survey of major aspects of ancient Greek civilization: religion, fine arts, political life, pan-Mediterranean relations, emphasizing the sixth and fifth centuries B.C.

3620 Roman Civilization (3) A survey of major aspects of ancient Roman civilization: religion, political institutions, law, art and architecture, daily life revealed by Pompeii, Herculaneum, and Rome itself.

3830 Women in the Greek and Roman World (3) A study of the condition of women in the apparently male-dominated world of Classical Greece and Classical Rome. The evidence from literature, vase paintings, and other art is examined from the age of Homer to the second century A.D., with emphasis on Athens in the fifth century B.C. and Rome in the first century A.D. (Same as Women's Studies 3830.)

4101 Foreign Study (1-16) See page 159. E.

4220 Seminar in Classical Studies (3) Intended to conclude the Classics major, the course surveys the field of Classical studies today. Recent achievements in the areas of both philology and archaeology; the impact of the decipherment of Linear B; new understandings of the culture and politics of the "golden age" of Pericles and Augustus; Classical studies and the academic profession on both the high school and college levels. May be repeated. Maximum 6 hours. A.

4510 Selected Readings in Latin Literature (3) Independent studies; may be repeated for credit with consent of department. A.

4610 Studies in Classical Archaeology (3) Variable content course offering subject matter not taught in an existing course, or concentrating on one aspect of the existing survey. May be repeated for credit to a maximum of 9 hours. Prerequisites according to topic. A.

GRADUATE
Consult the Graduate Catalog for listing of graduate level courses.

Comparative Literature
See Cultural Studies.

Computer Science (266)

Professors:
Ph.D. Clarkson; D. L. Perry; Ph.D. Ohio State; D. W. Strait; Ph.D. Texas.

Instructors:
J. W. Mayo, M.S. Tennessee; W. B. Gunn, M.S. Tennessee.

UNDERGRADUATE
Computer science offers an undergraduate major and minor as well as a Master of Science degree which must attain an average in Computer Science (see course Catalog). Information about computer science programs may be obtained from the departmental office, 8 Ayres Hall, or from the Computer Science Advising Center, 220 Ayres Hall. A B.S. major in Computer Science is offered by the departments of Computer Science and Computer Science and Statistics. Prerequisites to computer science intermediate and advanced courses. Also required are Math 240-50-60.

Minor: A minor in computer science consists of 2610, 2710, and an additional 15 hours of upper division computer science courses.

Acceptance and Progression: Acceptance to the major or minor in computer science is competitive and is based on the resources available in the computer science program. Students are considered in the decision are both subjective and objective. Included is consideration of overall grade point average, grades earned in computer science courses, grade point average in the lower division curriculum of the major or minor, the seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges. The standards applied may be adjusted from time to time to balance overall demand with available departmental resources.

A student enrolled in lower-division courses in the department may progress to the major or minor program only after completing the lower-division courses required by the department. Students who have completed the required lower-division computer science courses with a minimum GPA of 3.0 and wish to progress to the major or minor program must apply to the departmental office. This must be done as soon as the stated requirements are met so that a decision can be reached prior to the Advanced Registration date for the next quarter. Those who are accepted into a C.S. Degree program will be counseled and advised of educational alternatives.

A student's computer science average has not been considered in the decision are both subjective and objective. Included is consideration of overall grade point average, grades earned in computer science courses, grade point average in the lower division curriculum of the major or minor, the seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges. The standards applied may be adjusted from time to time to balance overall demand with available departmental resources.

A student enrolled in lower-division courses in the department may progress to the major or minor program only after completing the lower-division courses required by the department. Students who have completed the required lower-division computer science courses with a minimum GPA of 3.0 and wish to progress to the major or minor program must apply to the departmental office. This must be done as soon as the stated requirements are met so that a decision can be reached prior to the Advanced Registration date for the next quarter. Those who are accepted into a C.S. Degree program will be counseled and advised of educational alternatives.

For computer science majors who have taken at least three computer science courses at UTK, grades in all computer science courses from UTK will be averaged. If a course is repeated, all grades received for the course will be counted. If a course in which a student has received an A or B is later retaken, only the first A or B is counted; no subsequent grades will be counted.

If a student's computer science average as described above falls below 2.5, the student will be given a warning. If after one more quarter's grades have been received the student's computer science average has not risen to 2.5, the student will not be allowed to graduate with a major in computer science.

A student who desires to be readmitted to the major after being withdrawn as described above must fill out an application for Graduate computer science courses (computed as described above) of at least 2.7.

The policy applies to all computer science courses taken during or after Winter Quarter.

1982. This policy will be enforced by the Department of Computer Science. This policy will not change the present method of recording grades and grade point averages on the student's permanent academic record maintained in the records office.

Introductory and Service Courses

1410 Introduction to Business Oriented Programming (3) Current and potential uses of comput- ers as tools in the business with emphasis on learning FORTRAN programming. Not for computer science majors. Students may not receive credit for both 1410 and 1510. Intended primarily for stu- dents in College of Business Administration.

1510 Introduction to Programming—FORTRAN (3) Computer as a tool of varied uses in modern world; emphasis on basic programming in FORTRAN. Problem-solving process; organization and characteristics of digital computers. Survey of applications of comput- ers in various disciplines. Students may not receive credit for both 1410 and 1510.


2215 Discrete Structures (3) Introduction to discrete structures useful in computer science. Sets, set logic, Relations, functions, Proof techniques, induction, logic, Graphical representations and algorithms. Prereq: 1620 and Math 1850. (Same as Math 2215.)

2610 Programming Techniques (3) Problem formulation and solution. External devices and direct access input and output. For students who have programming background in a higher level language. Prereq: 1610-20.

2710 Machine Organization (3) Elementary computer architecture. Introduction to machine and assembly language programming, representation of data, microprogramming. Prereq: one course in computer programming.

3010 Computers and Society (3) History of comput- ing and computer systems; capabilities of a computer; applications in areas such as artificial intelligence, humanities, social sciences, sciences and engineering; computing in foreign countries; computer-assisted instruction; future advances in computing technology. Prereq: Consent of instructor.

3150 Introduction to Numerical Algorithms and Programming (3) Roots of equations, systems of linear equations, least-squares data fitting, numerical integration, numerical methods for ordinary differential equations. Introduction to programming in FORTRAN. 3150 and 3155 may not both be taken for credit. Students with a knowledge of FORTRAN should take 3155. Prereq or coreq; Math 2650. (Same as Math 3155.)

3410 Computer Programming—COBOL (3) Comput- er programming in business-oriented language COBOL. Prereq: one course in computer science programming.

3910 Commercial Computer Concepts and Controls (3) Elements, operation and control of computer systems in a business environment. Topics include input, storage, data manipulation, output, flowcharting, and error control. Prereq: 3410 and Accounting 2210.

4310 Statistical Data Processing (3) FORTRAN lan- guage for organizing and analyzing data; use of computer for statistical data analy- ses such as frequency distributions, percentiles, data reduction, graphical and numerical analysis of vari- ance. Not for credit for computer science majors. Prereq: Statistics 2100 or equivalent.

4330 Independent Study in Computer Science (1-3) Special project in area of student's primary interest. To
Intermediate and Advanced Courses

3155 Introduction to Numerical Algorithms (3) Roots of equations, systems of linear equations, least-squares data fitting, numerical integration, numerical methods for ordinary differential equations. 3150 and 3155 may not both be taken for credit; students with no knowledge of Fortran should take 3155. Prereq: 1510 or 1610 or consent of instructor. Prereq: or coreq: Math 2860. (Same as Math 3155.)

3180 Logic Design of Digital Systems (3) Introduction to Boolean algebra and design of combinational circuits; analysis, simplification, and logic characteristics. Design of clocked sequential systems and other circuits containing memory. Introduction to microcomputer architecture and system components to include basic structures and function of arithmetic, storage, input/output, and control systems. Instruction set capabilities and implementation. Prereq: 3520 or 2710 or Elec. Eng. 3010. 3 hours including biweekly lab. (Same as Elec. Eng. 3180.)


4050 Number Systems for Digital Computers (3) Floating-point number representation, mixed-radix number representation, multiple-modulus residue number representation, finite-precision fixed-point number representation, errors in floating-point computation, finite fields, and exact computation using digital computers. Prereq: 3155.

4210 Introduction to Artificial Intelligence (3) Artificial processes and their performance by a computer. Computer representation of knowledge, problem solving, games, playing, autoresponder design, machines, natural language understanding, computer vision and learning. Computer implementation of AI problems. Prereq: 4510. (Same as Electrical Engineering 4210.)

4225 Numerical Solution to Equations and Numerical Approximations (3) (Same as Math 4225.)

4235 Numerical Methods for Ordinary Differential Equations (3) (Same as Math 4235.)

4245 Numerical Linear Algebra (3) (Same as Math 4245.)

4470 Programming Languages (4) Comparison and analysis of programming languages, design, features, and implementation. Comparison of FORTRAN, BASIC, FORTRAN 77, and block-structured languages. Prereq: 2710 or consent of instructor. Prereq or coreq: Math 2860. (Same as Math 3155.)


4620 Operating Systems—Case Studies (3) Alternatives in operating system design, dynamic relocation, paging, segmentation, protection, device management, deadlock, concurrency, real-time systems. Examples from different operating systems analyzed as appropriate. Prereq: 4610 or equivalent or consent of instructor. Students may not receive credit for both 4620 and 5680.

4660 Principles of Compiler Design (3) Techniques of compiler design, scanning and parsing of languages described by regular and context-free grammars. Prereq: 4510.

4710 Formal Languages and Automata (3) Grammars of Chomsky hierarchy and their recognizers. Properties of languages and regular and context-free languages, introduction to computability and enumerability. Prereq: 2215.


4780 Interactive Computer Graphics (3) Point plotting, vector generation, interactive graphical techniques, two- and three-dimensional transformation, perspective depth, hidden line elimination, shading, hardware and software system design. Discussion of use of these techniques in design, problem solving, mapping, architecture, and many other areas. Prereq: Senior standing in computer science, electrical engineering, or geography and a knowledge of computer programming, or consent of instructor. (Same as Elec. Engr. 4750 and Geography 4750.)

4820 Introduction to Pattern Recognition (3) (Same as Elec. Engr. 4820.)

4830 Digital Image Processing (3) (Same as Elec. Engr. 4830.)

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

4910 Analysis and Management of Computer Installations (3) Analysis and design of computer systems; implementation, justification, personnel in systems perspective on systems. Prereq: 3520 or equivalent.

4980 Special Topics in Computer Science (1-4) Maximum credit 9 hours with consent of department. Prereq: recommendation of Comp. Sci. staff.

GRADUATE: Consult the Graduate Catalog for listing of graduate level courses.

Cultural Studies

Director: Dr. Charles O. Jackson

Basic Faculty:
B. K. Dumas, Ph.D., English; Donald M. Fiene, Ph.D., Russian; C. Fleming, Ph.D., Special Programs; E. J. Gangloff, Ph.D., Special Programs; R. W. Gwynne, Ph.D., Special Programs; T. J. A. Heffernan, Ph.D., English; Ferdinand A. Hilenski, Ph.D., Special Programs; C. O. Jackson, Ph.D., History; I. Leki, Ph.D., Special Programs; D. M. Morrow, M.A., Special Programs; M. L. Humphreys, Ph.D., Religious Studies; C. C. Flutleed, Ph.D., Classics; S. E. Wallace, Ph.D., Sociology.

include multi-tasking, overlays, advanced I/O techniques, high-level language macros, interrupt handling, teleprocessing facilities, virtual systems (all in a high-level language), and OS utilities. Prereq: 4510 and 4550.

The ideal curriculum encourages not only proficiency in a given field of knowledge but also the comprehension of similarity and complementarity between major 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 Afro-American Studies, American studies, Ancient Mediterranean Civilizations, Asian studies, comparative literature, Latin American studies, linguistics, Medieval studies, Russian and East European studies, and urban studies. Minors are provided in Afro-American Studies, Asian studies, comparative literature, Latin American studies, linguistics, Medieval studies, urban studies, and women's studies.

Afro-American Studies (022)

The Afro-American Studies Program (AAS) offers both a concentration and a minor under the general Cultural Studies Program of which AAS is a part. Courses in the Program are located in several colleges and numerous departments as well as those offered by the AAS Program. The requirements are:

Concentration: Afro-American Studies 2010-2020 plus 4310 and 4103 are required courses for B.A. majors. In addition to courses offered by AAS Program, at least two other departments must be included in the 36 hours required for a major, 24 of which must represent upper-division hours. Minor: Afro-American Studies 2010-2020 are required courses, with 16 additional hours at the upper-division level needed to complete the requirements for a minor. The 24 hours must be selected from the AAS Program and at least two other departments.

For further information consult the chairperson of the Afro-American Studies Committee, Mr. Marvin Peak.

Afro-American Studies (022)

1510-20 Elementary Swahili (4,4) Taped language program. Must be taken in sequence.

2010-20 Introduction to Afro-American Studies (3,3)

2725 Black Art (4) (Same as Art 2725.)

3410-S6-80 Directed Readings in Afro-American Studies (1,1) Designed for students who are interested in doing intensive reading in some area of Black studies which is not covered by the courses and offerings of the department. Must be taken in sequence. Prereq: 2010 (or 2020) and consent of instructor.

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

3340 Sociology of Poverty and Inequality (4) (Same as Sociology 3340.)

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

3550 Religion and Racism in America (4) (Same as Religious Studies 3550.)

3560 Black Religion in America (4) (Same as Religious Studies 3560.)

3570 History and Philosophy of Afro-American Education (4) (Same as Edu. 3570.)

3680 Contemporary Issues in Afro-American Education (4) (Same as Afric. St. 3680.)

3760 Studies in Afro-American Art (4) (Same as Art 3760.)
American Studies (099)

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

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

3233-34 Forms of Popular Literature and Culture (3,3) (Same as English 3233-34).

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

Asian Studies (145)

The Asian Studies concentration consists of 40 credit hours from the upper-division courses of Asian Studies and approved departmental offerings. 20 of the hours must be taken from courses listed within one of the four geographical-cultural areas (Islamic World; South Asia: China; Japan), and no more than 12 of those 20 hours can come from one sub-division. Sub-division A includes: Art, Asian Cultures, Literature, Music, Philosophy, and Religious Studies; Sub-division B includes: Anthropology, Economics, Geography, History, Political Science, and Sociology. Two of the Asian Studies culture courses (Asian Studies 3310-20-30-40) must be taken as part of the concentration. Prerequisite to the concentration is Asian Studies 2510-20. Corequisite to the concentration is competence in a major Asian language of the area of concentration (at the level attained by successful completion of the intermediate level sequence of that language or by demonstration of the equivalent competence).

The Asian Studies minor consists of Asian Studies 2510-20 and 16 credits hours taken from courses listed within one of the four geographical-cultural areas.

For further information consult the chairperson of the Asian Studies Committee, Dr. Walter Neale.

2431-32-33 Elementary Modern Standard Arabic I, II, III (4,4,4)

2551-32-33 Intermediate Modern Standard Arabic I, II, III (4,4,4)

3670 Islamic Literature in English Translation (4) Survey from origins to modern period of major Islamic literatures, especially Arabic, Persian, and Turkish. Readings include The Arabian Nights, The Rubaiyat of Omar Khayyam, and Gibran's The Prophet. Available for graduate credit.

3731-32-33 Intermediate Persian (4,4,4) Taped language program. Prereq: 2731-32-33 or equivalent or consent of instructor. Must be taken in sequence.

3831-32-33 Intermediate Modern Hebrew (4,4,4) Taped language program. Prereq: 2831-32-33 or equivalent or consent of instructor. Must be taken in sequence.

4000 Common Seminar (4) Interdisciplinary seminar conducted by members of the Asian Studies Committee for students in the concentration: Relations hip of Asian values to Western scholarship.

4010-20-30 Readings in Asian Literature (4,4,4) Prereq: Mastery of Intermediate-level of Japanese, Chinese, Arabic, or Sanskrit and consent of instructor.

4012 Selected Topics in Asian Studies (4) Content varies. May be repeated. Maximum credit 12 hours.


4434-35 Spoken Lebanese/Palestinian Arabic I, II, III (4,4,4) Arabic oral introduction to a central dialect of the Arabic-speaking world. Prereq: Asian Studies 2431-32-33 or consent of instructor.

4531-32-33 Advanced Chinese I, II, III (4,4,4) Taped language program. Prereq: 3531-32-33 or equivalent or consent of instructor.

4631-32-33 Advanced Japanese (4,4,4) Class will include conversation, drill, and composition practice.
33 or equivalent or consent of instructor. Must be

Art 3777 Japanese Art (4)

Asian Studies 3310 Indian Culture (4)

Asian Studies 3320 Chinese Culture (4)

Asian Studies 3330 Japanese Culture (4)

Asian Studies 3340 Islamic Culture (4)

Asian Studies 3610 The Literature of India in English Translation (4)

Asian Studies 3650-60 Japanese Literature in English Translation (4, 4, 4)

Asian Studies 3670 Islamic Literature in English Translation (4)

Asian Studies 4010-20-30 Readings in Asian Literature (4, 4, 4)

Music 2460 Introduction to Ethnomusicology (3)

(b) Economics, Geography, History, and Political Science

Economics 4232 The Political Economy of Asian Development (3)

Geography 3870 Geography of Asia (4)

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

History 3795 Contemporary Middle East (4)

History 3800 North Africa since 1830 (3)

History 3810-20-30 History of East Asia (3, 3, 3)

History 4791 Modernization of the Middle East (3)

History 4792 Historical Writers in Islamic History (3)

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

History 4870 Cultural History of China (3)

History 4880 History of Modern China (3)

History 4890 History of Contemporary China (3)

Political Science 3621 Contemporary China and Japan (4, 4)

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

Political Science 3795 Contemporary Middle East (4)

(c) Anthropology, Philosophy, Religious Studies, and Sociology

Philosophy 3650 Philosophy and Religion in India (4)

Philosophy 3660 Buddhist Philosophy and Religion (4)

Philosophy 3671 Religion and Philosophy in China (4)

Religious Studies 3560 Philosophy and Religion in India (4)

Religious Studies 3660 Buddhist Philosophy and Religion (4)

Religious Studies 3671 Religion and Philosophy in China (4)

Religious Studies 3672 Religion and Society in Japan (4)

Religious Studies 3680 Islam (4)

Religious Studies 3760 Eastern Religions and Western Thought (3)

Religious Studies 3770 Zen Buddhism (3)

Religious Studies 4670 Topics in Eastern Religions (4)

Religious Studies 4960 Tradition, Change and Modernity in Asia (4)

Sociology 3672 Religion and Society in Japan (4)

Cinema Studies

Minor: Consists of English 2690 and Art 2935 plus sixteen additional hours of approved area courses. It is strongly recommended that English 2950 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. Hilenski.

Approved Area Courses

Art 3935 Film Design (4)

Broadcasting 3670 TV Film News (3)

Broadcasting 4030-40 Television Production (3, 3)

Comparative Literature 4032 Topics in Film and Literature (3)

English 3233 Film and American Culture (3)

English 3440 Literature and Film (3)

English 4090 Topics in Film Study (3)

Italian 3340 The Italian Cinema (3)

Comparative Literature (260)

A concentration in comparative literature consists of 36 hours including Comparative Literature 4010, 4012-22-32, 9 hours of literature in a foreign language in courses numbered 3000 and above, and one classics course selected from Classics 4010, 4230, 4510. The remaining 12 hours should include literature courses, either in English or in a foreign language, numbered 3000 and above, from at least two of the following departments: English, Germanic and Slavic Languages, Religious Studies, Romance Languages (certain courses in Philosophy and Speech 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 4012-22-32, 6 hours of literature in a foreign language in courses numbered 3000 and above, and 9 hours of literature courses numbered 3000 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 Speech and Theatre may be substituted with the approval of the chairperson of the Comparative Literature Program). Minors in comparative literature are strongly encouraged to continue their study of a foreign language beyond the minimum requirement.

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

2010 Introduction to Comparative Literature (4)

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

3010 Computer Techniques for Literary Study (3)

Introduces students to the growing field of computer
research in literary study. Students will learn to write programs in BASIC which have literary research applications. Students study the specific kinds of literary study for which a computer is a useful tool. Projects include the following: indexing and bibliography, concordances, thematic analysis, content analysis, authorship attribution, textual editing, and stylistic analysis. No previous computer knowledge or background is assumed or required.

3236-37 Special Themes in Literature (3,3) (Same as English 3516-17)

4010 Methodology of Comparative Literature (3) Research and writing of comparative literary studies. Major project will be preparation of seminar paper in comparative literature. Prereq: 2010 and one course from 4012-22-32 or consent of instructor.

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

5012 Comparative Theories of Literature (3)

5022 Approaches in Comparative Literature (3)

5032 Studies in Comparative Literature (3)

Approved Area Courses

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

Classics 4010 Greek Drama in English Translation (3)

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

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

English 3710 Literature of the English Bible (3)

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

English 4720 Folklore (3)

English 4730 Popular Ballad (3)

English 4950 Approaches to Literature (3)

English 5860 Introduction to Literary Research (3)

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

German 4030 German Drama in English Translation (3)

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

German 4050 The Faust Legend (3)

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

Romance Languages 4010-20-30 Masterpieces of French Literature in English Translation (3,3,3)

Romance Languages 4020 Masterpieces of French Drama in English Translation (3)

Romance Languages 4030 Masterpieces of Spanish Literature in English Translation (3)

Romance Languages 4040 Masterpieces of Spanish Drama in English Translation (3)

Romance Languages 4050-60-70 Dante and Medieval Culture (3,3,3)

Ancient Mediterranean Civilizations

The concentration in Ancient Mediterranean Civilizations consists of Classics 2810, Classics 2820, Religious Studies 2611, and 28 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 3751, 3752; Religious Studies 3110, 3120, 4210.

(b) Greek Culture: Classics 3210, 3220, 3310, 3320, 3340, 3350, 4010, 4220 (where applicable), 4230 (where applicable); History 3760; Philosophy 3111, 4410, 4420; Political Science 3601.

(c) Roman Culture: Classics 3230, 3330, 3340, 4220 (where applicable), 4230 (where applicable); 4510, History 3770, Religious Studies 3311-12, 3330, 4300, 4310, 4320.

Courses of variable content, topics courses, reading and research, off-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 Foreign Language requirement with Greek, Latin, or Hebrew.

For further information, consult Dr. H. C. Rutledge (Classics) or Dr. W. L. Humphreys (Religious Studies).

Latin American Studies (600)

Concentration consists of 36 hours including language study, literature courses, and Latin American studies sequences.

Approved Area Courses

Latin American Studies (600)

Concentration consists of 36 hours including language study, literature courses, and Latin American studies sequences.

Approved Area Courses

Latin American Studies (600)

Concentration consists of 36 hours including language study, literature courses, and Latin American studies sequences.

Approved Area Courses

Latin American Studies (600)

Concentration consists of 36 hours including language study, literature courses, and Latin American studies sequences.
and linguistics. It provides the additional possibility of emphasizing the teaching of English as a second language for the student interested in employment at the B.A. level. The requirements of this concentration are:

Concentration
The concentration shall consist of 36 hours distributed as follows:

1. 33 hours composed of Audiology and Speech Pathology 3050; English 3330,
   3332, 4440; French, German, Russian, or Spanish 4250-60-70; French 4611;
   Linguistics 4120-30.
2. 6 hours of the following, selected in consultation with the Linguistics Committee:
   Anthropology 3420; Audiology and Speech Pathology 3200, 4650, 5651,
   5790; Educational Curriculum and Instruction 3562-63; Special Education and
   Rehabilitation 5220, 5310-20-30; English 3331, 4450, 4455, 4460, 4461,
   4471, 4481, 5150, 5170-80; French 4210-20-30, 5110-20-30; German 4310-
   20; 4810-20-30, 5710-20-30; Linguistics 4000; Russian 4310-20-30; Philosophy
   4630; Psychology 4560, 4566, 5360-70; Spanish 4210-20-30, 5110-20-30.
3. Other hours may be substituted in (b) by approval of the Linguistics Committee.

A minor in linguistics shall consist of 27 credit hours composed of 9 from section (b),

1. 36 hours composed of Audiology and Speech Pathology 3050; English 3330,
   3332, 4440; French, German, Russian, or Spanish 4250-60-70; French 4611;
   Linguistics 4120-30.
   2. 6 hours of the following, selected in consultation with the Linguistics Committee:
      Anthropology 3420; Audiology and Speech Pathology 3200, 4650, 5651,
      5790; Educational Curriculum and Instruction 3562-63; Special Education and
      Rehabilitation 5220, 5310-20-30; English 3331, 4450, 4455, 4460, 4461,
      4471, 4481, 5150, 5170-80; French 4210-20-30, 5110-20-30; German 4310-
      20; 4810-20-30, 5710-20-30; Linguistics 4000; Russian 4310-20-30; Philosophy
      4630; Psychology 4560, 4566, 5360-70; Spanish 4210-20-30, 5110-20-30.
3. Other hours may be substituted in (b) by approval of the Linguistics Committee.

Note: In addition to the above listed courses for the concentration and the minor there are occasional 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 chairman of the program, Dr. Bethany Dumais, or the program director, Dr. Chauncey Mellor.

3330 Introduction to Study of English Language (4)  (Same as English 3330.)
3331 Cultural History of the English Language (3)  (Same as English 3331.)

3332 Modern English Grammar (3)  (Same as English 3332.)
4000 Topics in Linguistics (3)  Content varies. May be repeated. Maximum credit 9 hours.
4020-30 Historical Linguistics, Neogrammarians, School, and Growth of Structuralism (3,3) 4020-
   Trace development of scientific approach to linguistics from Jacob Grimm and Franz Bopp through 19th
   century. 4030-Traces change in linguistic interest brought about by Saussure's Cours and growing im-
   pact of anthropology and behaviorism on linguistic studies.
4250 Introduction to Descriptive Linguistics (3)  (Same as French, German, Russian, and Spanish
   4250)
4260 Introduction to Historical and Comparative Linguistics (3)  (Same as French, German, Russian,
   and Spanish 4260).
4270 Introduction to Romance Linguistics (3)  (Same as French and Spanish 4270).
4271 Introduction to Slavic Linguistics (3)  (Same as Russian 4271).
4440 Sociolinguistics (3)  (Same as English 4440.)
4460 Special Topics in English Linguistics (3)  (Same as English 4460.)
4461 Quantitative Analysis of Language (3)  (Same as English 4461.)
4471-481 English as a Second or Foreign Language (3,3)  (Same as English 4471-81).

Medieval Studies (674)
A concentration in Medieval Studies focuses upon culture and society from the collapse of the Roman Empire to the 16th 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 2041 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 theatre. Courses should not be selected at random but should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy, etc.), or should revolve around a particular discipline, or two closely related disciples (for example, courses in the history of art and architecture). A minor in Medieval Studies consists of Medieval Studies 2010 and 2041 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, chairperson Dr. Thomas J. Hefferman.

Latin is the most appropriate language for students in the Medieval Studies concentration and is essential for those who plan to continue their studies in graduate school. In addition, students planning to go on to graduate school are strongly advised to supplement their Medieval Studies concentration with extensive work in one of the traditional disciplines.

2010 Medieval Civilization (4)  Introduction to basic themes in medieval experience, approached from in-
   terdisciplinary points of view and including philosophy and religion, art and architecture, language and litera-
   ture, social and political history.
2601 Literature of the Dark Ages (5th-10th Centu-
   ries)  (3)  Critical analysis and interpretation of selected classical works from the medieval period. Focuses on tests representing the major genres of the early Middle Ages (e.g., epic, lyric, historical, lyrical—epical, biographical). Readings include St. Gregory's Life of St. Benedict, Augustine's Confessions, the life of Charle.
   sman, etc. Students registering for 4 credit hrs. will be assigned additional work to satisfy the fourth credit hour.
2602 Literature of the Later Middle Ages (11-15th Cen-
   turies)  (4)  Critical analysis and interpretation of selected classical works from the medieval period. Focuses on romantic, allegorical and mystical writings from the high and later Middle Ages, e.g., the Song of the Nibelungen, the Romance of the Rose, St. Bernard's Commentary on the Song of Songs, Peter Abelard's History of My Callamry, etc. Should be taken in sequence with 2601. Students registering for 4 credit hrs. will be assigned additional work to satisfy the fourth credit.
4010 Seminar in Medieval Studies (4)  Interdiscip-
   linary treatment of selected topics.

Upper-division courses for the concentration in Medieval Studies may be chosen from the list of courses below.

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

History 3060 History of Western Religious
   Thought and Institutions (4)
History 3411 Renaissance (3)
History 3710 History of Germany (3)
History 3780 History of Middle East (3)
History 4011 European History Colloquium (3)
   (when subject is part of medieval culture and society)
History 4560 History of Medieval England (3)
History 4710-20 Medieval History (3,3)
Philosophy 3121 Medieval Philosophy (4)
Political Science 3802 Studies in Political Thought
   (4)
Religious Studies 3070 History of Western Reli-
   gious Thought and Institutions (4)
Religious Studies 3411 Renaissance and Reformation
   (4)
Religious Studies 4610 Topics in Western Reli-
   gious Thought and Institutions (when subject is part of medieval culture and society)

Category #2 Language and Literature

Classics 4310 Selected Reading from Latin Literature
   (3) (readings in Latin)
Classics 4370 Readings in Medieval Latin (3)  (Same
   as Classics 4370.)
Comparative Literature 4012-22-22 Special Topics in
   Comparative Literature (3,3,3)  (when subject is part of medieval culture and society)
Comparative Literature 4050-60-70 Dante and Me-
   dieval Culture (3,3,3)
English 3331 Cultural History of the English Lan-
   guage (4)  (Same as English 3331.)
English 4410 Introduction to Study of English Lan-
   guage (4)  (no language requirement)
English 4420 History of English Language (3)  (no
   prerequisites)
English 4500-40 Chaucer (3,3) 4930—The Canterbury
   Tales. 4940—Troylus and Criseyde and early
   poems. (Same as English 4930-40.)
French 3210 French Literature in English Transla-
   tion (3)
French 4350-60-70 Medieval French Literature (3,3,3) (readings in French)
French 4410 French Civilization (3) (readings in French)
German 3210 German Literature in English Translation (3-4)
German 4310 History of German Language (3) (readings in German)
Italian 4010 Italian Drama in English Translation (3) (or in Italian)
Italian 4050-60-70 Dante and Medieval Culture (3,3,3) (readings in English or Italian)
Italian 4330 History of Italian Language (3) (readings in Italian)
Category #3: The Arts
Architecture 4130 Seminar in Medieval Architecture (4)
Art 3704 History of Medieval Art (4)
Art 3705 Northern European Painting, 1350-1600 (4)
Art 3715 Early Italian Renaissance Art, 1300-1500 (4)
Music 4200 Independent Study in Music History and Literature (1-3) (when subject is part of medieval culture and society)
Music 4280 The Mass to 1600 (3)
Music 4290 Gregorian Chant (3)
Theatre 3252 History of the Theatre (4)

Russian and East European Studies (887)
Prerequisites to the major are the completion of Russian 2110-20-30 and Russian 2540-50. The major consists of 42 hours distributed as follows: Geography 3680, six hours from History 3470-80-90; Philosophy 3550; Political Science 3631 and four additional hours from Political Science 3632, 3796, 4815, 5370, and 5880; Russian 3110-20-30; Russian 4010 (Selected Topics in Russian and East European Studies); and any eight additional hours in courses numbered 3900 or above from the list "Approved Area Courses" which can be obtained from the chairman of the Russian and East European Studies Committee, Dr. Donald Fiene.
4010 Selected Topics in Russian and East European Studies (3) An interdisciplinary seminar on a selected topic using a comparative approach.

Urban Studies (985)
A concentration in urban studies consists of 40 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. Samuel E. Wallace.
2500 Interdisciplinary Urban Studies (4) Fundamental perspectives of various disciplines toward the city, urbanism as a way of life, and urbanization as an ongoing process. Stressess the multidimensional nature of urban studies.
3000 Selected Topics in Urban Studies (4) May be repeated with consent of the committee. Maximum credit 12 hours.
3750 The Urban Polity (4) (Same as Political Science 3750).
4000 Directed Field Work (1-16) Participant observation and other directed field research in selected sites and organizations. May be done in a concentrated manner, such as a summer, or over the course of an academic year. Minimum of four credits required for a concentration in urban studies. May be repeated. Maximum credit 16 hours.
4100 Survey of Planning (3) (Same as Planning 4100).
4330 Urban Ecology (4) (Same as Sociology 4330).
4440 Urban Anthropology (3) (Same as Anthropology 4440).
4670 Cities and Urbanization in American History (4) (Same as History 4670).
4900 Aspects of Urban Environment (4) (Same as Architecture 4900).

Urban Studies Curriculum:
For the concentration and minor, courses may be selected to fit the respective requirements from the following:

Anthropology:
3450 Community Studies in Complex Culture (3)
4440 Urban Anthropology (3)

Architecture:
2000 Man-Environment Systems I (4)
3930 Behavioral Approaches to Environmental Design (6)
4900 Aspects of Urban Environment (4)

Geography:
3000 Man, Location, and Behavior (4)
3430 Urban Geography (4)

History:
4670 Cities and Urbanization in American History (4)
4740 The City in Europe (3)

Planning:
4100 Introduction to Planning (3)

Political Science:
3750 The Urban Polity (4)
3760 Urban Policy Process (4)

Real Estate and Urban Development:
3610 Principles of Real Estate and Urban Development (3)
4120 Urban Growth and Land Use (3)
4130 Problems of Urban Development (3)

Sociology:
3410 Urban Environment (4)
3420 Urban Problems (4)
4330 Urban Ecology (4)
4530 Community Organization (4)

Women's Studies (944)
Minor: Consists of Women's Studies 2010-20 and 16 hours of appropriate courses numbered 3000 or above. Courses approved for the Women's Studies minor are listed below. Students may petition the Women's Studies Committee for approval of courses other than those listed. For further information consult the chairperson of Women's Studies, Dr. Martha Lee Osborne, at the Women's Studies offices, 206 Alumni Hall, 974-2409, or in the Philosophy Department, 807 McClung Tower, 974-7212 or 974-3255.
2015 Images of Women in Literature: Fiction, Poetry, Drama (4) An introduction to the study of women through the roles and stereotypes portrayed in a variety of literary genres (fiction, poetry, and drama), including the works from diverse historical periods and cultures.
4000 Topics in Women's Studies (4)
4280 Women in European History (4) (Same as History 4280)
4290 Women in American History (4) (Same as History 4290)

Supporting courses from several departments and colleges on the UTK campus include:
Afro-American Studies 4830 Black Women in American Society (4)
Child and Family Studies 2120 Sex Roles and Marriages (3)
English 3310 Women Writers in England and America (3)
French 3240 Women in French Culture (4)
History 4280 Women in European History (4)
History 4290 Women in American History (4)
History 5310 Topics in Women's History (3) (graduate course; variable contents)
Music 3095 Women in Music (3)
Philosophy 3430 The Concept of Woman (4)
Philosophy 3435 Philosophy of Feminism (4)
Public Health 4430 Women's Health (3)
Psychology 4870 Contemporary Research in the Behavior of Women (4)
Sociology 3150 Gender in Society (4)
Speech and Theatre 4560 Rhetoric of the Women's Rights Movement (4)
Educational and Counseling Psychology 4110 Psychology of Sex Role Development (3)
Educational and Counseling Psychology 5110 Psychology of Women (3)

Cultural Studies (270)
1000 Selected Topics (2-4) May be repeated. Maximum credit 8 hours.
4000 Selected Interdisciplinary Cultural Topics (1-12) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairperson. May be repeated for credit up to maximum of 12 hours.
4101 Foreign Study (1-16) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairperson. See pages 159 and 171.
4102 Off-Campus Study (1-16) Acceptable for credit in any cultural studies concentration or minor except
4103 Independent Study (1-16) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairperson. See pages 159 and 171.

GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Ecology (278)
Dewey L. Bunting, Chairman

Basic Faculty:

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

ADMISSION
Requirements for admission to this program are: (1) admission to the Graduate School of The University of Tennessee; (2) at least 12 quarter hours of college chemistry, 9 quarter hours of college mathematics, 4 quarter hours of ecology at the upper-division level, and the Graduate Record Examination. Application forms for admission should be obtained from the Graduate School. Inquiries concerning the admission and degree requirements should be addressed to the Chairman, Graduate Program in Ecology, University of Tennessee, Knoxville, Tennessee 37916.

GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Economics (283)
See faculty list, page 83.

UNDERGRADUATE
The program in economics combines a broad liberal education with the rigorous study of current issues of the day such as employment, inflation, poverty, wealth, and the benefits and costs of economic growth. Courses offered in the Department of Economics of the College of Business Administration provide opportunity for a major or minor in economics in the College of Liberal Arts. See page 83 for description of the courses available.

Requirements for a B.A. major in economics consist of: (1) Economics 2510, 2520, or equivalent honors courses; and (2) a minimum of 33 additional hours in upper-division economics courses. Economics 3110 (or 3111 and 3112) and 3120 are required as part of the upper-division work and should be taken as early as possible in the upper-division program as possible. A minor consists of (1) Economics 2510, 2520, 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 Committee, Room 210, Clayton Education Building as early in their program as possible to determine the appropriate requirements.

GRADUATE
See page 84 in the College of Business Administration. The department offers the following degrees: M.A. and Ph.D. Also, the MBA degree with a concentration in economics is offered.

English (339)

Professors:

Associate Professors:

Assistant Professors:

Instructors:
P. S. Adams, M.A. Tennessee; W. J. Curtis, M.A. Tennessee; C. M. Hoffman, M.A. Iowa; M. S. Lewis, Ph.D. Pennsylvania; G. M. Logsdon, M. A. Texas; E. D. Overby, M.A. Virginia; M. H. Simpson, M.A. Oregon; P. A. Tschetsch, M.A. New Mexico State.

Undergraduate General Prerequisites and Corequisites:
English 1010 or 1011; 1020; 1031 or 32 or 33 or the equivalents are prerequisites to all sophomore and upper-division courses in economics. Two courses in English at the 2000 level are prerequisite to any of the three English concentrations. The equivalent of the second year (2000 level) of a foreign language is a corequisite for any of the three English concentrations.

English for Non-Majors: The department welcomes non-majors both in its sophomore introductions to literature (2510-2680) and also in its 3000-4000 level courses in language, literature, 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 Other Fields (3230-31), and Technical Writing (1410-50).

For prerequisites and other advice, consult specific course descriptions below and departmental advisors.

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

Concentration in Literature: Twelve English courses at the 3000-4000 level including:
(1) English 3042,
(2) at least three courses in major figures of periods before 1800,
(3) at least two courses concerned with approaches other than literary history, such as literary forms or modes, the theories of criticism, or other unifying approaches or ideas,
(4) a total of three courses in writing or the English 3042 course may be counted towards the literature concentration but may not be substituted for requirements 1, 2, or 3 above.

Concentration in Creative Writing: Twelve English courses at the 3000-4000 level including:
(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 fiction writing, film, or English language;
(4) four courses in literature.

Concentration in the English Language: Twelve English courses at the 3000-4000 level, including:
(1) 3330, 3331; (2) four courses in linguistics and the English language selected from among those offered by the English department and, with English 3902, one of the following: Anthropology 3420, Psychology 4660, or Linguistics 4000; (3) two additional courses in language, literature, or writing; (4) four courses in literature.

Individualized Program: The Director of Undergraduate Studies is empowered to approve individualized programs developed by students in consultation with their English advisors. 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 culminating in a senior thesis and a comprehensive examination. If the thesis and examination both receive grades of B or better, the student will be graduated with Honors in English. Interested students should consult their advisors or the Director of Undergraduate Studies.

Minor: An English minor consists of 24 hours at 2000 level or above, including at least 18 at the 3000-4000 level.

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

Departmental Course Information: In the English Office, 316 McClung 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 timetables.

1010 English Composition (3) Expository writing recommended for students with ACT English scores at or above 24 (or current B) set by the English Department. Emphasis on invention, organization, style, and revision; intensive study of essays for meaning, style, and development; conferences on individual writing problems. 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 the ACT English score needed for 1010 or who have previously failed to pass that course. Includes the material of 1010 with two additional class hours of individual and group instruction in grammar, mechanics, sentence patterns, reasoning, paragraph development, and paragraph development. A, B, C, I, NC, W grading. Students may not receive credit for both 1010 and 1011. F, W, S.

1019 Writing Workshop (1) Self-paced laboratory course only for students remanded to it at the beginning of the quarter by their English Composition teachers. Emphasis on essay grammar, mechanics, sentence patterns, and paragraph development. To receive credit, a student must participate at least two hours per week and must also pass the composition class in which he/she is currently enrolled. May be repeated once for credit, but may not be taken for credit concurrently with 1011. S/NC grading; F, W, S.

1020 English Composition (3) Analytical writing based on study of great themes in literature: practice in documentation; individual conferences. Prereq 1010. Students receiving an A in 1020 may elect to complete a year's work in English composition with any 3000-level writing course. A, B, C, I, NC, W grading; F, W, S.

1031-2-33 English Composition (3,3,3) Application of writing skills to areas of special interest. Study and practice of research writing; individual conferences. Prereq 1010-20; any 1030-level course completes a year's work in English composition; no more than one may be taken for credit. May be taken for no credit without prior approval. 20th-century novels, short stories, plays, and poetry. 1032—Writing and language: how we are influenced by verbal manipulation in education, politics, and media. 1033—Business and technical writing. A, B, C, I, NC, W grading. F, W, S.

1018-29-38 Honors: English Composition (3,3,3) Open only to students selected on the basis of placement scores and high school record. Grading scale and work load the same as regular sequence. 1018—Expository writing based on study of non-fiction prose. Introduction to research writing. 1038—Analytical and research writing based on study of great literature. Students receiving a grade below B in 1018 will complete a year's work in English composition by taking 1020 and one course on the 1030 level; students receiving a grade of A or B also receive credit and a grade of no less than B for 1028 and may continue into 1030; all students with A's and those with B's and consent of department have additional option of completing a year's work in English composition with any 3000-level writing course. A, B, C, I, NC, W grading; F, W, S.

1221 Written and Oral English for Foreign Students (3) Emphasis on the more advanced structures of English grammar and on paragraph writing. Required during the first quarter of foreign students who on the English Proficiency Examination demonstrate need for work in English structure, but not at the intensive level of 1121. Required also of foreign students who complete 1211. A, B, C, I, F, W grading. Students registered for this course are permitted to register for only two other courses.

1261 English Pronunciation for Foreign Students (3) Sounds and intonation patterns of American English and relation of spelling to sound. Designed to improve student's ability to speak and understand English. May be repeated. Maximum credit 6 hours. S/NC (Same as Audiology and Speech Pathology 1261.) E.

1431 English Composition for Foreign Students (3) Composition and reading for students whose native language is not English. Emphasis on paragraph and composition organization with attention to grammar and mechanics. English 1431 replaces English 1010 for undergraduate foreign students. Prereq 1221 or recommendation based on English Proficiency Examination. A, B, C, I, NC, W grading. F, W, S.

1441 English Composition for Foreign Students (3) For students whose native language is not English, writing based on reading and discussion with attention to grammar and mechanics. English 1441 replaces English 1020 for undergraduate foreign students. Prereq 1431 or recommendation based on English Proficiency Examination. A, B, C, I, NC, W grading. F, W, S.

1451 English Composition for Foreign Students (3) For students whose native language is not English, writing based on reading and discussion of imaginative literature. Mastery of research paper techniques necessary for understanding and analysis of narrative literature. May be taken for credit. 1451 replaces English 1031-32-33 for undergraduate foreign students. Prereq 1441. A, B, C, I, NC, W grading. F, W, S.

2510-20 English Masterpieces (4,4) 2510—To the mid-18th century. 2520—Since the mid-18th century. 2530—American literature from its beginnings to 1860. 2540—Modern American literature. Prereq 1010 or who have previously failed to pass that course. Includes the material of 1010 with two additional class hours of individual and group instruction in grammar, mechanics, sentence patterns, reasoning, paragraph development, and paragraph development. A, B, C, I, NC, W grading. Students may not receive credit for both 2510 and 2511. F, W, S.

2550-70-80 Literature of the Western World (4,4,4) 2550—Ancient and medieval. 2570—Renaissance through the 18th century. 2580—19th and 20th centu- ries. 2590—F, W, S; 2570-W; 2580-S.

2660 Introduction to Drama (4) Study of selected plays to provide critical techniques necessary for understanding of drama. F, W, S.

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

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

2690 Introduction to Film Studies (4) Selected world cinema features are studied to provide critical techniques necessary for understanding and analysis of narrative cinema. Emphasizes basic elements of film expression and contours of film history. Writing assignments.

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

3042 Colloquium in Literature (3) Introduction to methods and objectives of literary study; conferences to plan student's program in major.

3045 Introduction to Literary Criticism (3)

3050-51 English Culture (3,3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. 3050—Beginnings to 1660. 3051—From 1660 to 1600.

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

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


3135 Tennyson and His Successors (3) Includes study of poetry as that by Profess Rafflesio, Eisenhut, and Decadents.

3136 Browning, Arnold, and Hopkins (3)

3150 Melville (3)

3160 The Short Story (3) British and Continental European, with emphasis on 20th century.

3170 The American Short Story (3) From 19th century beginnings to present; emphasis on 20th century.

3210-20 English Literature and Culture of the Nine-teenth Century (3,3) Survey of literature dealing with leading movements in politics, science, religion, and the arts. 3210—Emphasis on the 16th and 17th century. 3230 Literature and Other Fields (3) Content varies. Focus on religious, philosophical, psychological, historical, or other pertinent aspects of literature. May be repeated with consent of department. Maximum 6 hours.

3233-34 Forms of Popular Literature and Culture (3,3) Content varies. Detective fiction, science fiction, film, or other topics. May be repeated with consent of department. Maximum 6 hours each. (Same as American Studies 3233-34.)

3236-37 Special Themes in Literature (3,3) Content varies. The city, the frontier, the sea, the American woman, or other topics. May be repeated with consent of department. Maximum credit 6 hours each. (Same as Comparative Literature 3236-37.)

3310 Women Writers in England and America (3) Emphasis upon the literary consciousness of women in the 19th and 20th centuries. (Same as Women's Studies 3310.)

3311 Women in American Literature (3) Analysis of women as writers and as subjects in American literature from its beginnings to the present.

3320 Introduction to Study of English Language (4) (Same as Linguistics 3320.)
Emphasis upon Dryden and Pope.

Writing Drama (3) Introduction to writing both British and American literature. May be repeated with consent of department. Maximum credit 6 hours.

Writing Poetry (3) Introduction to writing novels and short stories.

Writing Fiction (3) Introduction to writing poetry.

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


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

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

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

Age of Johnson (3)

Literature of English Bible (3) Types of Old Testament literature, excluding Wisdom literature. (Same as Religious Studies 3710.)

Literature of the English Bible (3) Old Testament literature and types of New Testament literature. (Same as Religious Studies 3711.)

Introduction to Folklore (3) Essential terms and concepts in modern folklore-folk-life studies. Emphasis on North American materials: folklore, folksong, myth, legend, proverbs, riddles, superstitions, dance, games, and architecture.

Writing Non-Fiction Prose (3) Strategies of writing on personal and academic subjects. Discussion of student and professional writing. Conferences and instruction in the writing of editorials, essays, and technical reports. Prerequisite: junior standing in student's major or consent of instructor. F. W. S.

Professional Writing (3) The writing of research papers, theses, and dissertations in which data are marshalled and interpreted. The writing of abstracts, varieties of documentation styles, proper use of visuals, guidelines and procedures for manuscript submission, and the processes of editorial review. Prerequisite: 4140 or consent of instructor.

Advanced Fiction-Writing (3) Further development of skills acquired in basic writing fiction course. Prerequisite: 3450 and consent of instructor.

Writing the Detective and Mystery Story (3) Instruction and writing cover entire crime field-suspense, police procedural, private eye, spy, and adventure fiction. Prerequisite: 3450-60-70 or consent of instructor.

Writing Science Fiction and Fantasy (3) Survey of genre development and basic texts of science fiction, speculative fiction, and fantasy. Exercises in writing in genres, in accordance with techniques learned in introductory course. Prerequisite: 3450 and consent of instructor.

Adventures in Poetry Writing (3) Further development of skills acquired in basic poetry writing course. Prerequisite: English 3470 or consent of instructor.

British Novel (3) From the Restoration to the present. May be repeated for credit with consent of instructor. (Same as Linguistics 4460.)

Comparative Literature (3) May be repeated for credit with consent of department. (Same as Linguistics 4461.)

Southern Literature through the Nineteenth Century (3) Southern literary renaissance, Faulkner, and more recent writers such as Welty, O'Connor, and Porter.

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

Seventeenth-Century and Agrarians, Faulkner, and more recent writers such as Welty, O'connor, and Porter.

Graduate Consult the Graduate Catalog for listing of graduate level courses.
introduction to a major. Geography 3700, 4100, 4210, and 4990 are also required, along with an additional 28 hours selected from courses at the 3000 and 4000 levels. At least one course must be selected from each of groups A, B, C, D, and E below:

a. Physical Geography: 3510, 3520, 3530, 3550, 3560, 3570
b. Economic Geography: 3410, 3430, 3490, 4075, 4610, 4830
c. Cultural Geography: 3000, 3450, 3600, 3610, 3660, 4240
d. Regional Geography of the United States: 3910, 3920, 3930, 3940
e. Regional Geography of Foreign Areas: 3790, 3800, 3810, 3830, 3840, 3870, 3880. Students in the 3/2 program are encouraged to take 12 of their 28 upper-division credit hours from group B.

For those pursuing a program leading to professional employment or graduate study in geography, 4210 and/or a senior project under 4103 are strongly recommended.

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

Such programs might emphasize particular aspects of geography or might develop interdisciplinary themes such as natural environment and resources, urban and regional planning, or the culture, history, or economy of a particular area. A useful technical or vocational specialty program is available which emphasizes cartography and remote sensing.

1410-20 Introduction to Geography (4,4) Selected problems or situations of contemporary interest are studied in depth, illustrating geographical points of view and techniques. Need not be taken in sequence. 1410-E, 1820-W, S.

1810-20-30 Geography of the Natural Environment (4,4,4) Characteristics and processes of earth's surface and lower atmosphere; their interaction to produce patterns of topographic environments significant to man. Must be taken in sequence. 3 hr. lecture and 2 hrs. of lab per week. 1810-F, W. 1820-W, S.

1910 Introductory Cultural Geography (4) Basic concepts of culture. Patterns and distributions of cultural phenomena including geography of languages, religions, cultural regions, population, settlements, and forms of economy.

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

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


3430 Urban Geography (4) Concepts and theories concerning development and transformation of systems of cities and internal morphology of cities.

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

3490 Geography of Resources (4) Study of factors related to variations in resource availability from time to time and from place to place, with particular emphasis upon economic and mineral resources.

3510 Meteorology (4) Introduction to dynamic atmospheres and resulting weather events. Nature of individual weather elements, their measurement, and analysis over time and space.

3520 Climatology (4) Overview of general circulation system leading to world pattern of climates. Climatic change and modification, and interrelationships of climate and human activity.

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

3600 Geography of Population (4) World population patterns; regional socio-economic characteristics and demographic trends; relationship to resource base.

3610 Political Geography (4) Importance of geographic factors in understanding political relationships within and among nations; spatial implications of political decision-making processes; geography of administrative units.

3660 Cultural Geography (4) Basic concepts of culture, methods and background of cultural geography; world patterns of cultural phenomena.

3700 Maps and Aerial Photographs (4) Introduction to scales, sources, uses, design, and production of maps, aerial photos, and other forms of spatial images.

3750 Geography of Middle America (4) Covers Mexico, Central America, and the West Indies. Same as Latin American Studies 3750.

3800 Geography of South America (4) Same as Latin American Studies 3800.

3830 Geography of Africa (4) Survey of major physical, cultural, and economic characteristics of Africa with particular emphasis on the area to the south of the Sahara. (Same as Afro-American Studies 3830.)

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

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

3880 Geography of the Soviet Union (4)

3910 Regional Geography of United States and Canada (4) Major physical, economic, and social distributions as they interrelate to give distinctive character to regions of United States and Canada.

3920 Geography of the American South (4) Geographical appraisal of southeastern United States, including physical environment and human resources. Origins and development of contemporary economic and cultural traits of the area.

3930 Geography of Tennessee (4)

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

4075 Geography of Transportation (4) Geographic examination of transportation systems, emphasizing transport of people on highways and by public facilities. Relations of these systems to changing geography of cities and urban hinterlands.

4100 Quantitative Methods in Geography (4) Geographic applications of statistical techniques, point pattern analysis, and analysis of areal units. Prereq: Mathematics 3000 or consent of instructor.
The Department of Geological Sciences provides training for (1) those who plan careers as professional geologists in industry, federal and state agencies, or other fields that utilize earth sciences; and (2) those who seek a general knowledge of geology and its relationship to the other sciences, engineering, business, law, and other disciplines.

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

UNDERGRADUATE

B.S. Major: Prerequisites: Geology 1410, 1420, 1430. Students who have less than one year of high school biology must take Biology 1110-20; for students who have had one or more years of high school biology Geology 1020 should take any two of the following courses: Biology 1230; Botany 1110, 1112; Geology 1119, 1126; Biology 3190, Chemistry 1110-20; Physics 1310-20 or 2210-20. In addition, one of the following must be taken: Chemistry 1130 or the third quarter of the physics sequence already taken by a student.

Minor: Geology 1410, 1420, 1430 are prerequisite to a minor which consists of at least 24 hours in courses numbered 2000 or above.

Geology 4440 (field—camp), or an equivalent field camp elsewhere, is strongly recommended for students planning a career in geology. Those students unable to take a field camp should take Geology 4310. A student may not receive credit in the major for both Geology 1513 and 4440.

Geology 424 (44)

1410-20 General Geology I, II (4,4) 1410—Introduction to study of the earth. Its composition, structure, and processes that change it. 1420—Emphasizes development of life and physical events through Mesozoic Era. Must be taken in sequence. 3 hours and one 2-hour lab or field period.

1430 General Geology III (4) Continuation of 1410-20 sequence emphasizing the advent of human life and its interaction with the processes of the earth. Prereq: 1420. 3 hours and one 2-hour lab or field period.

2210 History of Life on Earth (4) Chronological account of origin and evolution of life, its environment, and societal patterns. Not intended for geology majors. 3 hours and 1 lab or field period.


2510 Geochemical Cycles and the Global Environment (4) Introduction to the use of geochemical cycles for identifying potential environmental problems on a global scale. Prereq: 1410. Recommended: 3 lectures and 1 problem session.

2610 Introductory Geology for Engineers (3) Materials and structures of the earth. For College of Engineering students only. 2 lectures and 1 lab or field period.

2710 Introductory Oceanography (4) Introduction to studies of oceans including ocean basin and physical and biological processes within ocean basin and their contained water and sediment masses. 1410 recommended.

3180 Mineralogy (4) Introduction to crystallography and study of minerals. Laboratory includes hand specimen, chemical, and X-ray methods of identification. Prereq: 1410. Recommended: 1110-20 or equivalent. 3 lectures and 1 lab.

3190 Introduction to the Petrographic Microscope (1) Introduction to the petrographic microscope and optical methods for minerals identification in thin section. To be taken concurrently with 3310. 1 lab per week, S/N grading only.

3210-20 Invertebrate Paleontology (4,4) Systematic review of important invertebrate fossil groups. 3210—Porifera to Annelida, including cnidarians, echinoderms, and annelids. 3220—Mollusca through last Chordata, including arthropods and echinoderms. May be taken separately or in sequence. Prereq: 3260, Biology 1210-20, or consent of instructor. 3 lectures and 1 lab or field period.

3260 Paleobiology (4) Introduction to principles and materials of paleontology as applied to interpretation of earth history. Prereq: 1420. 3 lectures and 1 lab or field period.

3270 Geological History of Land Organisms (4) Geologic history of major terrestrial groups of animals as related to the development of the earth system with special emphasis on fossil record of land plants and vertebrates. Prereq: Biology 1210-20 or consent of instructor. 3 lectures and 1 lab or field period.

3310 Introductory Petrology (4) Introduction to classification and properties of igneous and metamorphic rocks, processes which produce them, and tectonic environments in which they form. Prereq: 3350. 3 lectures and 1 lab. Coreq: 3190.

3330 Geology of East Tennessee (4) Lectures and lab excursions. Prereq: 12 hours of geology and consent of instructor.

3360 Stratigraphy-Sedimentation (4) Introductory study of stratigraphic sequence and sedimentary processes and interpretation of depositional environments. Prereq: 1420 and 3310. 3000, 3 lectures and 1 lab period.

3370 Structural Geology (4) Introductory discussion of structures such as folds, faults, joints, cleavage, and primary structures. Laboratory work includes depth and thickness problems. Structure sections, structure contour maps, etc. Prereq: 1420, Math 1840-50 or equivalent. 3 lectures and 1 lab.

3510 Introductory Environmental Geology (4) Geologic problems involving earth environments and resources. Introduction to principles of environmental science as they are applied in geology. Prereq: 1420 or consent of instructor. 2 lectures and 2 lab or field periods.

3610 Quaternary Geology for Engineers (3) Engineering and geologic processes, landforms, ground-water, mass-movements, etc. Prereq: 1 lectures and 1 lab or field period. Prereq: 2510 or equivalent.

3710 Origin and Evolution of the Continents and Ocean Basins (4) Introductory study of origins and changes that have occurred in earth crustal materials with emphasis on modern concepts of continental drift and plate tectonics. Prereq: 1420.

3810 Regional Geology of the United States (3) Survey of geologic histories of various geologic provinces of the United States following their stratigraphic and tectonic framework. Prereq: Geology 1410-20 or equivalent.

4110 Principles of Economic Geology (4) Intersection of geology and economic processes. Prereq: consent of instructor. Two 2-hour lectures.

4200 Sedimentology (4) Introduction to processes of sedimentation: transport of sediments and formation of sedimentary structures, river, wave, and tidal processes, and ocean circulation. Prereq: 3310, 3 lectures and 1 lab.

4310 Paleobiology (4) Principles of primary production and factors that influence the distribution and abundance of marine and terrestrial organisms. Prereq: 3260 or consent of instructor. 3 lectures and 1 lab.

4320 Paleoclimatology (4) Principles of environmental analysis as applied to stratigraphic successions and associated lithologies. Prereq: 3260 or consent of instructor. 3 lectures and 1 lab.

4240 Paleobotany (4) Survey of fossil record of plants and particular emphasis on (1) comparative morphology of and evolutionary trends in major plant groups and (2) chronological succession and geographic distribution of past floras on earth. Prereq: 1420 or 2210. Botany 310-20 or consent of instructor. 3 hours and 1 lab or field period. (Same as Botany 4240.)

4250 Evolution of Higher Taxa (4) Discussion of current evolutionary theory in context of paleontology; patterns of evolution in fossil organisms at family or higher. Prereq: 3260. 2 lectures, one 2-hour seminar.

4260 Biostratigraphy (3) Principles of application of paleontologic data to stratigraphic study, codification of stratigraphic nomenclature, and recommended practice. Prereq: 3260 and 3360. 1 lecture plus one 2-hour seminar.

4270 Micropaleontology (4) A survey of geologically stratigraphically important microfossils and their biological evolution if known. Special emphasis is given to fossil monerans, protistans, and palynomorphs. Prereq: 3260 or consent of instructor.


4308 Electron Microprobe and X-Ray Fluorescence Analysis (3) Application of electron microprobe and X-Ray fluorescence techniques as analytical tools for the determination of the chemistries of solid particles such as materials and rocks. Prereq: or coreq: 4307 or consent of instructor.

4309 X-Ray Diffraction Methods (3) Application of X-Ray in identifying crystalline substances, including powder camera, Gandolfi camera and diffractometer. Prereq: 3180 or consent of instructor.

4310 Geologic Mapping (4) Interpretation of maps and methods of geologic mapping. 3 lectures and 1 lab or field period. Prereq: 12 hours of geology.

4331 Quaternary Geology of North America (4) Quaternary stratigraphic processes, stratigraphy, sedimentology, and geomorphology of glaciated and unglaciated North America and oceans. Prereq: 1410 or consent of instructor. Two 2-hour lectures.

4332 Quaternary Paleogeography (4) Study of pollen and plant macrofossils of characterize vegetation and climate change during Quaternary. Prereq: Consent of instructor. Two 2-hour lectures.
3333 Quaternary Field and Lab Techniques (4) Techniques for environmental characterization and reconstruction, including pollen and plant macrofossil identification, description of soil stratigraphy, and sedimentology. Prereq: 1410 or consent of instructor. 2 lectures and 2 labs.

3730 Tectonic Styles (4) The tectonic evolution of structures and their associated rock masses, with emphasis on metamorphism, plate motions, and stratigraphic assemblages as determined through case study examination of different classes of structures and rock units. 3 lectures and 1 seminar or lab. Prereq: 3370 or consent of instructor.

4440 Field Geology (9) Five weeks' field course, first term summer quarter. Advanced undergraduates or first-year graduates in geology. Prereq: completion of all prerequisite materials by June 10. 3 hours and 6 weeks.

460 Geologic Photography, Photogrammetry and Remote Sensing (4) Principles of terrestrial, airborne, and satellite geologic remote sensing, including photograph interpretation and some principles of nonphotographic remote sensing systems.

4510 Principles of Geomorphology (4) Gravitational processes acting on the earth's surface and landforms produced. Frereq: 1410-20-30. 3 hours and 1 lab.

4520 Process Geomorphology (4) Gradational processes of erosion, transport, and deposition of rock masses in the earth's surface and its subsoil, application of geomorphology, and field work in geomorphology. Prereq: 1430 and 4510. 3 hours and 1 lab or field period.

4550 Optical Mineralogy (4) Identification of minerals and determination of crystal-chemical parameters using petrographic microscope.

4610 Principles of Geochemistry (4) Application of chemical principles to geologic problems. Emphasis on inorganic chemistry and relation between basic atomic structure and distribution and behavior of elements in the earth's crust. Prereq: Chemistry 1110-20 or equivalent required. Recommend 3310.

4650 Mineral Phase Equilibria (3) Principles of phase chemistry and application of phase equilibria studies in rock-forming mineral systems as aid to understanding conditions of formation and modification of rocks. Prereq: 4610 or consent of instructor.


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

4770 Evolution of Oceans and Continents (4) Introduction to study of origins and changes that have occurred in the earth's crust. Emphasis on modern concepts of continental drift and plate tectonics. Prereq: 1420.

4780 World Geology of Petroleum (4) Geologic habitat of petroleum deposits, methods of exploration and reserve assessment, geology and global distribution of known and potential reserves. Prereq: 1410 or equivalent and 3160 or equivalent.

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

GRADUATE
The general requirements for master's and doctoral degree as well as course descriptions are given in the Graduate Catalog.

Germanic and Slavic Languages

Professors:
- H. Kratz (Hedei), Ph.D. Ohio State; J. E. Falen, Ph.D. Pennsylvania; H. Fuller (Emeritus), Ph.D.
- Wisconsin; R. L. Hiller (Emeritus), Ph.D. Cornell; J. C. Osborne, Ph.D. Northwestern; M. P. Rice, Ph.D. Vanderbilt.

Associate Professors:
- J. S. Elliott, Ph.D. Michigan; D. M. Fiens, Ph.D. Indiana; N. A. E. Moravčik (Emeritus), Ph.D. Wissenschaft, D. E. Lee, Ph.D. Stanford; C. J. Mellor, Ph.D. Chicago; U. C. Rittenhouse, Ph.D. Connecticut.

Assistant Professor:
- C. Hodges, Ph.D. Chicago

instructor:
- M. H. Harris, M.A. Illinois.

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 159. Students should consult the department before registering for the foreign study course.

German

B.A. Major: Majors or minors in German should carefully prepare their programs in consultation with a departmental faculty advisor. German 1518-20-30 or the equivalent is a prerequisite to the minor. The minor itself consists of 27 hours of Russian courses, including 9 hours from Russian 2640-50 and/or 3210-20-21-30-40-50-60 and 18 hours to be taken from Russian 3110-20-30, 3610-20-30, and courses numbered 4000 and above.

Russian and East European Studies. See Cultural Studies.

Certification for Teaching German and Russian in Tennessee
Consult Certification Program, Room 212 Claxton Education Building.

German (433)

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

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

1518-2518-28 Honors: Elementary and Intermediate German (6,6,6) Honors course for students of superior ability. Freshmen are admitted on the basis of high school average, performance on the American College Testing Program. Upperclass students must have a B average. A grade of C or above must be achieved in 1518. This sequence consists of 2518. A student obtaining a grade of B or better in 1518 and 2518 may complete with German 1520. This sequence is equivalent to 1510-20 and 1110-20-30 and 2110-20-30 and its completion allows the student to enter all 3000-level German courses.

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

2110-20-30 Intermediate German (3,3,3) Must be taken in sequence.

2210-20-30 German Literature in English Translation (3,3,3) Survey of German literature from earliest times to the present. No foreign language credit. Writing—emphasis courses. The three-credit course fulfills Divisional Distribution Requirement in Humanities. Part 1 (or any two quarters fulfills the two-credit requirement). Part 2 for students who choose philosophically perspectives for Part 1.

3010-20 Elements of German for Upper-Division and Graduate Students (3,3,3) Elements of language, elementary and advanced readings. Open to graduate students preparing for language examinations, and upper-division students desiring reading knowledge of the language. Undergraduate credit only. No credit for students having completed 1510-20 or 1110-20-30.

3040 Elementary Dutch (3) Prereq: Reading knowledge of German. Primarily for graduate students in German. No graduate credit allowed.

3110-20 Introduction to German Literature (3,3,3) Prereq: 2130 or equivalent. Need not be taken in sequence.

3610-20 Culture of the German—Speaking Peoples (3,3,3) Studies in the culture and life—style of German—speaking peoples from their first contact with the Romans to the present. Readings in English. No foreign language credit. A writing—emphasis course. Fulfills Upper Level Distribution Requirement for Foreign Studies for those who have not satisfied the history requirement with western civilization.

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

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 159.

4102 Off-Campus Study (1-16) See page 159.
analysis of Hesse's major novels in English translation. 3320 Novels of Hermann Hesse (3-4) Study and writings in English translation. No foreign language credit.

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

4120-20-30 Studies in German Literary Types (3,3,3) 4210–20 Drama. 4230–44 Narrative prose. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, or courses in English translation) or equivalent.

4160 Studies in German Authors (3) Life and works of a single outstanding German literary figure. Content varies. May be repeated for credit. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, or courses in English translation) or equivalent.

4250 Introduction to Descriptive Linguistics (3) (Same as Russian, French, Spanish, and Linguistics 4250.)

4260 Introduction to Historical and Comparative Linguistics (3) Phonological and morphological change. Historical, sociological influences upon the development of language. Semantic change. Lexicography. All topics copiously illustrated by selected examples from Indo-European languages. Prereq: 9 hours of upper-division courses in a modern or ancient language (exclusive of German and French 3010-20-30, or courses in another modern or ancient language). General courses in Latin and Greek requiring no knowledge of these languages, or consent of department. (Same as Russian, French, Spanish, and Linguistics 4260.)

4270 Introduction to Germanic Linguistics (3) The phonetics and phonemics of German. German grammar and the German vocabulary from a descriptive point of view. The dialects of German. An introduction to the study of the other Germanic languages.

4310-20 History of German Language (3,3)

4630 German Civilization (3) Prereq: 2130 or equivalent.

4618-28-38 Honors: Senior German (3,3,3) Intended to give student of special aptitude greater opportunity to do independent study than is possible in ordinary course work. Prereq: Senior standing, with a record of A in half of German courses taken as prerequisite to the 4000 courses, average of B in remainder, and consent of department.

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

4850 Business German (3) Survey of German used in fields of business and economics, intended primarily for students wanting to major or minor in business or economics. Prereq: 3110-20-30.

GENERAL COURSES

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

3270 Modern German Novel in English Translation (3) From 1900 to present: Remarque, Hesse, Mann, Kafka, Franck, Grass. No foreign language credit.

3280 Goethe's Faust in English Translation (3) Intensive study of Faust I and II and survey of criticism and interpretations of the work. No foreign language credit.

3310 Dramas of Bertolt Brecht (3-4) Chronological survey course of Brecht's dramatic works and selected writings in English translation. No foreign language credit.

3320 Novels of Hermann Hesse (3-4) Study and analysis of Hesse's major novels in English translation. No foreign language credit.

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

GRADUATE

The Department of Germanic and Slavic Languages offers three advanced degrees. They are Master of Arts (M.A.) in German, Master of Arts in College Teaching (M.A.C.T.) in German, and Doctor of Philosophy (Ph.D.) in German Language and Literature. The requirements for these degrees as well as course descriptions are in the Graduate Catalog.

Russian (886)

1110-20 Elementary Russian (4,4,4) Must be taken in sequence.

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

1630-40-50 Elementary Serbo-Croatian (4,4,4) Must be taken in sequence.

2110-20-30 Intermediate Russian (4,4,4) Must be taken in sequence.

2210-20-30 Russian Literature in English Translation (3,3,3) Survey of nineteenth and twentieth-century Russian literature. Writing emphasis courses. No foreign language credit. The three-semester course fulfills the Divisional Requirement in Humanities, Part 1 (or any two quarters fulfills the two-quarter requirement of Part 2 for students who choose philosophical perspectives for Part 1).

2270 Russian Philosophical and Theological Thought (3) Survey of the development of philosophical and theological thought in Russian from the Middle Ages to the Revolution. Special emphasis on the expression of this thought in Russian literature and literary criticism. A writing emphasis course; no knowledge of Russian required.

3110-20-30 Russian Composition and Conversation (3,3,3) Practice in writing and speaking; grammar review and vocabulary building. Prereq: Completion of 2110-20-30.

3610-20-30 Introduction to Russian Literature (3,3,3) 3610–20–30–50–60–70, 3310 or equivalent. Need not be taken in sequence.

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 159.

4103 Independent Study (1-16) See page 159.

4110-20-30 Studies in Major Russian Writers (3,3,3) Content varies. Pushkin, Lermontov, Gogol, Turgenev, Tolstoy, Dostoevsky, Chekhov, and others. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent. May be repeated for credit.

4250 Introduction to Descriptive Linguistics (3) (Same as German, French, Spanish, and Linguistics 4250.)

4260 Introduction to Historical and Comparative Linguistics (3) (Same as German, French, Spanish, and Linguistics 4260.)

4271 Introduction to Slavic Linguistics (3) (Same as Linguistics 4271)

4510-20-30 Senior Seminar (3,3,3) A course for majors in Russian; minors admitted at the discretion of the instructor. Intensive and integrated study of language, culture, literary style, and literary criticism based on selected texts.


GENERAL COURSES

3220 Works of Leo Tolstoy in English Translation (3-4) War and Peace, Anna Karenina, and other works.

3221 Works of F. M. Dostoevsky in English Translation (3-4) Crime and Punishment, Brothers Karamazov, and other works.

3240 The Russian Drama in English Translation (3-4) Selections from works of果戈里, Грибоедов, Pushkin, Gogol, Ostrovsky, Turgenev, Chekhov, and others.

3250 The Works of Ivan Turgenev and Anton Chekhov in English Translation (3-4)

3260 Russian Folklore in English Translation (3-4)

3280 Special Topics in Russian Literature in English Translation (4) Topics vary and are announced in advance. Student suggestions for topics are welcome. No foreign language credit. May be repeated.

3710-20 Background and Main Currents of Russian Culture (3,3) A broad interdisciplinary approach to the appreciation of the language, religion, literature, art, music, history, geography, and social problems of Russia. No knowledge of Russian required. A writing emphasis course. May be repeated. Fulfills the upper level distribution requirement for Foreign Culture.

Greek

See Classics.

Hebrew

See Religious Studies.

History (462)

Professors:

P. H. Bergeron, Ph.D. Vanderbilt, E. V. Chmielewski, Ph.D. Harvard; R. E. Duncan, Ph.D. California (Berkeley); L. P. Graf, Ph.D. Harvard, Y. Y. Hsiao, Ph.D. Chicago; R. W. Harris, Ph.D. California (Berkeley); G. O. Jackson, Ph.D. Emory, M. M. Klein, Ph.D. Columbia; R. G. Landen, Ph.D. Emory.

Associate Professors:


Assistant Professors:


Instructor:

D. B. Morrow, M.A. UTK.

*Benwood distinguished Professor.

** Alumni Distinguished Service Professor.

*Lindley Young Professor.

UNDERGRADUATE

History is a rewarding subject for students seeking a general education; traditionally have done well in a number of careers, such as law, business, journalism, public service, teaching and library, archival fields, and ministry. Many students majoring in other subjects take history courses: to develop their skills in thinking, writing, reading, and speaking; to assist them in their search for personal identity; and to help them in their lifelong effort to understand change, continuity, and the links between past, present, and future.
B.A. Major: Majors in history should prepare their programs in consultation with a department faculty advisor. History 1510-20 (or their honors equivalents), or 1610-20, are prerequisite to the programs consisting of 41 hours, including: (1) 8 hours of History 2510-20 (or their honors equivalents); (2) 3 hours of a thematic course, History 2015; and (3) 30 upper-division hours. The distribution of upper-division courses shall be in such a way that they include at least: (1) one course dealing predominantly with a period prior to 1750, and (2) two courses in each of the following areas: (1) United States, (2) Europe-Latin America, and (3) Asia-Africa. It is highly recommended that majors take History 4010, and History Colloquium.

Minor: History 1510-20 (or honors equivalent) is prerequisite to a minor which consists of 24 hours of courses numbered 2000 or above, including at least: (1) 8 hours in United States history; and (2) 12 upper-division hours.

History for Non-Majors: The department welcomes non-majors in its courses. Few history courses have formal prerequisites. Honors Programs: The Department of History offers honors sections of the Western Civilization and United States history survey courses. Some entering freshmen are invited to participate in the Honors Program. Interested students may apply. These survey courses are open to non-majors. An honors major requires successful completion of three special courses at the junior level (3006, 3038, 3048) and a senior thesis (4018-4028). The honors major consists of 50 hours, including 41 hours as outlined above, plus 3008-38-48. All rising juniors who are declared history majors with an overall GPA of at least 3.0 are invited to join the Junior-Senior Honors Program. Students interested in honors work should consult the department's honors coordinator.

Departmental Course Information: Students can obtain additional information about the content and availability of history courses in the departmental office, 1101 McClung Tower, or from any member of the history department. The department also prepares a course description brochure for each quarter.


Russian and East European Studies. See Cultural Studies.

1510-20 Development of Western Civilization (4,4) 1510—Ancient World to 1715. 1520—1715 to present. E.

1518-28 Honors: Development of Western Civilization (4,4) Consent of department required. 1518—F; 1528—W.

1610-20 A History of World Civilization since 1450 (4,4) Interaction of Western World and non-Western peoples since the 15th century, 1610—ca 1450-1800; 1620—1800 to present. 1610—F; 1620—W.

1950-60 Afro-American History: An Introduction (4,4) 1950—Survey of the Afro-American experience to 1865. Traditional African societies from which Afro-Americans emerged; evolution of prejudice and racism in America; the institution of slavery; free Negroes; Civil War and Reconstruction. 1960—The Afro-American experience from 1890. The African-American struggle for political, civil, and social equality; leaders of the civil rights movement and programs; responses of black community institutions to the challenges of the black urban ghetto; the Civil Rights and Black Power movements.

2000 The City in Europe, ca. 1200-1900 (3) Survey of European urban growth, with comparative analysis of major periods of urbanization of 13th and 19th centuries. Emphasis on relationship between demographic, economic, cultural, and political conditions of cities and political and cultural development.

2015 Historical Issues (3) Introduction to broad, thematic issues in historical perspective. A lecture-discussion course in which content will change from quarter to quarter. Especially suitable for non-majors; also open to majors. May be repeated. Maximum credit 9 hours.

2350 U.S. and World Crisis, 1899 to Present (4) Present and past issues confronting the United States today in historical perspective. Emphasis varies to reflect recent developments in world affairs. In-tended for non-history majors and may not be used to satisfy history major or minor requirements.

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

2511-21 Readings in United States History (1,1) Directed readings in aspects of national past. Only for students who have not yet met Tennessee Legislative requirements in American history, or for transfers who enter liberal arts with credits, but fewer than eight, in an American history and/or government. 2515—1865 to present. Prereq: Consent of department, prerere. or copreq: 2510 or 2520. May not be taken 1 hour elective. Will not be offered during summer sessions. F, W, S.

2515-26 United States History for International Students (4,4) 2515-Settlement to 1865. 2525—1865 to present. F, W.

2518-28 Honors: History of the United States (4,4) Consent of department. 2518—F; 2528—W.

3000 Honors: Introduction to Historical Analysis and Interpretation (3) Required of students working for honors in history.

3038 Honors: Philosophy and Methods (3) Principl es and techniques of research and study of critical and specialized history. Required of students working for honors in history. Admission with consent of department.

3048 Honors: Readings (3) Required of and open only to students working for honors in history.

3050 The West and the Third World Since 1870 (3) Examination of the relationships between the West and Africa, Asia, and Latin America since 1870 across a broad spectrum of critical issues. Includes economic interdependence and modernization, ideologies in conflict with non-Western world views, and the search for individual identity in circumstances of cultural disparity.

3051 Revolutions in Historical Perspective (3) Comparative history of major revolutions which transformed political, social, and economic structures and values, such as those in France, Russia, China, Mexico, and Iran. Contrasts and common patterns in their causes, phases, and outcomes. Relations between leaders and masses. Major theories of revolution.

3060-70-80 History of Western Religious Thought and Institutions (3,3,3) (Same as Religious Studies 3060-70-80.)

3121 Ancient History to 500 A.D. (3) The cultural foundations of western civilization. Considers such topics as the rise of the Greek polis, classical Greek culture and philosophy, Alexander the Great and the Hellenistic era, the rise and fall of the Roman Empire, the origins of Judaism and Christianity.

3122 Medieval Europe, 500-1450 (3) The emergence of a distinctive western European civilization from classical, Christian, and Germanic roots. Considers such topics as war and depression and conflict, marriage, war and economic or political dominion over other peoples. Topics include the relationship between leaders and followers, patterns of dissent, mobilization for war, and post-war attitudes.

3120 History of Sports in United States (3) Analysis of development of sports and their significance in American life from colonial period to present. Emphasis on social, cultural, economic, and political impact of both spectator and participatory sports in 20th century.

3240 Law in American History (3) The law and economic development in American, 1500-1865, the rise of the nation and the Civil War, the role of law in the Revolution and the Civil War, and the rise and development of the legal profession. Not for graduate credit.

3270 History of Human Services and Public Health in United States (3) Development of human services in modern society, focusing on how and why public hospital and welfare organizations emerged in industrial America and providing historical background for understanding contemporary social services, professionalization, and values and attitudes of deliverers and recipients of them.

3311-21 History of Tennessee (3,3) 3311-18th century to Civil War Era. 3321—1865 to present.

4311 The Renaissance (3) (Same as Religious Studies 3411.)

4312 The Reformation (3) The Reformation, Counter Reformation, and Wars of Religion. (Same as Religious Studies 3412.)

4321-22 Early Modern Europe (3,3) 4321—17th century Europe. 4322—18th century Europe.

4341-32 Nineteenth Century Europe (3,3) 4341—French and industrial revolution to 1848. The milieu for fermenting conflict, economic, social and political ideas, culminating in a massive revolutionary upheaval: 1842—Maturity and Challenge (1848-1890). Industrial and capitalistic maturity in an era of intense national rivalry, triumph of the bourgeoisie, the intellectual climate of realism, socialism, and materialism.

4344-45 History of France (4,4) 4345—Emergence of Modern France (1715-1870). Social, intellectual and economic pressures in the acme regimi: era of experimentation as revolutionary and traditional French control over their empire. 4346—Since 1917.

4370-80-90 History of Russia (3,3,3) 4370—To 1801. 4380—19th century Russia 4390—20th century Russia.

3610-20 The American Colonies and the American Revolution (3,3) Emphasis on major themes rather
Human Services (532)

The Program in Human Services was established in 1971 for the purpose of providing education, training, and experience, at the undergraduate level, for individuals interested in working to enhance and increase the well-being of our society. The course of study provided by the faculty is also appropriate for individuals who wish primarily to improve their understanding of themselves, and of the society in which they live.

Graduates of the program are employed in a wide variety of settings, including child and family service agencies, community centers, school systems, mental health centers, hospitals, court systems, family planning clinics, extended care facilities, and state human service departments. Many of our graduates enter graduate and professional schools for advanced study in areas such as psychology, business administration, criminal justice, education, guidance, law, occupational therapy, pathology, public administration, special education, social work, and vocational rehabilitation. The program is approved by the Council for Standards in Human Service Education (COSHE).

The curriculum of the program includes required courses, elective courses, advising, and supervised experiences in two human service agencies or organizations. A B.A. major in human services may be obtained by completing the following: H.S. 2690, 3100, 3300, 3900, 4220, 4221, 4400, 4401, and one course from each of the four lists of courses:

1. Psychology 3650 (4)
2. Political Science 3565 (4), Political Science 3566 (4), or Sociology 4560 (4).
3. Psychology 3120 (4) or Sociology 3130.

Total Credit Hours: 55-56

2690 Introduction to Human Services (4) General field of human services with focus on related societal values; contemporary issues in human services. E, S.

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

3200 Peoples and Problems of Appalachia (4) Course designed to provide better understanding of Appalachian peoples, exploring their life style and institutions from contemporary human services point of view. Special emphasis placed on political and economic structures of region. Recommended. Anthropology 4740.

3300 Thinking about People (4) Intended to facilitate development of thoughtful, informed, and empathic attitudes toward human beings—those providing service as well as those receiving service. F, W.

3900 Information Assessment and Interpretation (4) The knowledge and skills of information gathering and assessment for human services are examined in depth in relation to human services practice. Emphasis is placed on formulating questions, identifying relevant data, using related resources, interpreting information and applying this information in a practical setting. F, S.

4101 Foreign Study (1-16) Foreign Study Application field no later than the first week of the quarter prior to the quarter of enrollment. For additional information, see page 159.

4102 Off-Campus Study (1-16) Off Campus Study (1-16) Application filed no later than the first week of the quarter prior to the quarter of enrollment. For additional information, see page 159.

4220 Human Services Methodologies (4) Introduction to some specific helping techniques essential to administration and delivery of human services. F, W.

4221 Human Service Methodologies II (4) A continuation of HS 4220 with emphasis on general helping skills essential to administration and delivery of human services. Prereq: 4220, W.

4229 Special Topics in Human Services (4) Examination of specific issues, methods, values, and trends which have implications for helping practitioners, e.g., art therapy, behavior modification, counseling skills, self-awareness training. Content varies; topic to be determined by instruction. May be repeated up to 12 credit hours.

4300 Working Within the System (6) A survey of the context within which the need for human services arises and an analysis of the process by means of which such services are provided. Prereq: senior standing.

4400 Human Services Field Work (8) Practical field experiences in appropriately organized and directed human service settings. Designed to offer the student the opportunity to learn and develop specific helping skills and to become exposed and involved in the roles and function of social services; to provide some direct services in a supervised learning situation. For majors only. Must be taken for 8 hours Fall and Spring Quarters. S/NC. Prereq: 4220, 4221, F, S.

4410 Human Services Field Work II (8) Practical field experiences in appropriately organized and directed human service settings. Designed to offer the student the opportunity to learn and develop specific helping skills and to become exposed to and involved in the roles and functions of social services; to provide some direct services in a supervised learning situation. For majors only. Must be taken for 8 hours Winter and Summer Quarters. S/NC. Prereq: 4220, 4221, 4400. W, SU.

Italian

See Romance Languages.

Japanese

See Cultural Studies (Asian Studies).

Latin

See Classics.

Latin American Studies

See Cultural Studies.

Linguistics

See Cultural Studies.

Mathematics (641)

Professors:

J. S. Bradley (Head), Ph.D. Iowa; G. E. Albert (Emeritus), Ph.D. Wisconsin; J. H. Carruth, Ph.D. Louisiana State; C. E. Clark, Ph.D. Louisiana; R. E. Cline, Ph.D. Purdue; R. J. Davenport, Ph.D. Wisconsin; D. J. Dessart, Ph.D. Maryland; D. E. Dobbs, Ph.D. Cornell; E. D. Eaves (Emeritus), Ph.D. Texas; F. M. Farrell, Ph.D. Pennsylvania (Emeritus), Ph.D. Illinois; T. G. Hallam, Ph.D. Missouri; D. B. Hinton, Ph.D. Tennessee; A. S. Householder (Emeritus), Ph.D. Chicago; L. S. Hutch, Ph.D. Florida State; G. A. Klausen, Ph.D. Nebraska; H. T. Mathews, Ph.D. Tulane; R. M. McConnell, Ph.D. D. Duke; D. K. Miller (Emeritus), Ph.D. Michigan; B. S.

Associate Professors: V. Alexopoulos, Ph.D. Delaware; D. F. Anderson, Ph.D. Chicago; V. A. Douglass, Ph.D. Harvard; G. S. Jordan, Ph.D. Wisconsin; K. R. Kimble, Ph.D. Ohio State; K. Y. Kuo, Ph.D. Cincinnati; B. A. Suppes, Ph.D. Massachusetts Institute of Technology; W. H. Row, Jr., Ph.D. Wisconsin; R. J. Roswell, Ph.D. Virginia; S. M. Serbin, Ph.D. Cornell; J. Smith, Ph.D. California (Berkeley); G. A. Sod., Ph.D. California (Berkeley); R. P. Smith, Ph.D. Idaho; K. R. Stephenson, Ph.D. Wisconsin; J. J. Walsh, Ph.D. D.U.N.Y. (Binghamton).

Assistant Professors: L. Bales, Ph.D. Cornell; L. Barker, Ph.D. Florida State; J. C. Good, Ph.D. Washington; S. Eliner, Ph.D. Cornell; L. J. Gross, Ph.D. Cornell; S. Hanharan, Ph.D. Cornell; O. Karakashian, Ph.D. Harvard; S. Lenthardt, Ph.D. Kentucky; M. Miller, Ph.D. Illinois; S. Mulay, Ph.D. Purdue, H. Simpson, Ph.D. California Institute of Technology; C. Sundberg, Ph.D. Wisconsin.

Instructors: C. G. Doss, M.A. Tennessee; M.S. McLean, M.S. Purdue; D. P. Nash, M.A. Colorado.

Space Institute, Tufahoma.

UNDERGRADUATE

Placement Information for Freshman Courses: Students who need more than one year of mathematics should plan to take 0150 Trigonometry (0) or 1484-56-68 (or equivalent) before taking 1484-56-68. The prerequisites for 1484 (and 1482) are two years of high school algebra, one year of geometry, and one semester of trigonometry or an equivalent. Students who present an ACT score below 28 in mathematics are urged to take the appropriate refresher course(s) in trigonometry or an equivalent.

Those who earned at least a B in high school geometry and who present an ACT score in mathematics of at least 26 (or 32 in mathematics) are encouraged to omit 1540 and begin with 1550 or 1700. Students who have received a grade of C or better in Mathematics 1540 may subsequently receive credit for Mathematics 1550.

Honors Courses: The current practice of the department is to offer honors versions (1484-56-68 and 1482-56-68) in sequence, fall-winter-spring, each year. In addition to these regularly offered honors courses, an honors version of any course in the department whose number has a zero as the last digit may be offered in any quarter. In this case, the last digit will be changed to eight and the title will be preceded by the word "Honors," both in the Timetable and on the student's transcript. These honors courses may be offered upon the initiative of interested faculty, students, or the department head (in all cases subject to the approval of the department head).

Proficiency Examinations: Students who have taken calculus in high school are encouraged to inquire at the Mathematics Office, Ayres Hall, about the possibility of taking a proficiency examination for one or more courses from the calculus sequence 1480-50-60. If a satisfactory grade is made on the examination(s), credit will be awarded for the appropriate course(s).

Advanced Mathematics Courses: Include 3090 and all courses numbered 3140 or above, except 3220, 3510, and 3861.

A.B./B.S. Major: Before beginning a mathematics major, a B.S. candidate must complete 1484-50-60 (or honors versions) and have programming skill sufficient to take 3155.

The major requirements are:

1. 2840-50-60 (or honors version) and 3155.
2. 3550-60. Students who complete 2848-58-68 may substitute six hours of advanced mathematics courses (as defined above) for this requirement.
3. One of the sequences 4120-50-60, 4225-35-45, 4510-20-30, 4610-20-30, 4650-60-70, or 4750-60-70 (or honors versions).
4. Fifteen additional hours of advanced mathematics courses as defined above.

In satisfying this requirement a student may substitute not more than six additional hours of courses from the following list, for advanced mathematics: Computer Science 3160-3200-3250-3310; or Mathematical Curriculum 3751, 3752; Physics 3210-20, 4110-20, Statistics 3460.

5. 4910 and 4940. (These two courses constitute a capstone experience for mathematics majors.)

Honors Program:

An Honors Program in mathematics will consist of at least 27 hours of mathematics courses numbered 4000 or above, except 4710, including at least 6 hours of honors courses. Students who satisfy the major requirements of the major, with a grade of B or better in Mathematics 1840, may subsequently receive credit for Mathematics 1850.

Minor: Consists of 2840-50-60 (or 2848-58-68) and at least 12 hours of advanced mathematics courses numbered 3100 or above.

Program Planning for Majors:

Mathematics majors have considerable freedom in determining how they will meet the requirements of the major. This is necessary, since mathematics majors may select from a variety of possible careers. In order to meet this diversity of needs, the mathematics faculty has designed a variety of sample programs which majors may wish to follow. These 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.

1050 Trigonometry (0) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. For students who enter with deficiency in high school trigonometry. 3 hours per week. No college credit.

1140 Basic Mathematical Skills (4) Sets, elementary deductive logic, problem solving, elementary probability and statistics. Satisfactory Skill Score of 23 on the Advanced Placement Tests is required.

1484 Trigonometry (0) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. For students who enter with deficiency in high school trigonometry. 3 hours per week. No college credit.

1485 College Algebra (5) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, polynomial inequalities, relations, functions, graph. No student who has received credit for Math 1484 with a grade of C or better may subsequently receive credit for Math 1485.

1488 Honors College Algebra (5) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, polynomial inequalities, relations, functions, graph. No student who has received credit for Math 1484 with a grade of C or better may subsequently receive credit for Math 1488.

1500-60 Introductory Calculus—General Mathematics (4.4) 1550—Equations of straight lines, conics, derivatives of algebraic functions, applications of derivatives, maxima and minima, related rates, antiderivatives, integration of algebraic functions, applications of integrals. 1560—Differential equations, matrices, systems of linear equations and inequalities, Cramer's Rule, linear programming, trigonometric functions, applications, arithmetic and geometric series, simple and compound interest, annuities, exponential and logarithmic functions, law of growth, applications. Prerequisite: 1550 or equivalent.

Note: No student who has received a grade of C or better in Mathematics 1560 may subsequently receive credit for Mathematics 1550.
Note: Students with adequate high school background in algebra are advised to begin the 1540-50-60 sequence with 1550.

1700 Precalculus Mathematics (4) Function concept and use of functional notation. Properties of functions and their graphs. Exponential, logarithmic, and trigonometric functions. No student who has received credit for Math 1840 with a grade of C or better may subsequently receive credit for Math 1540 or 1700. Prereq: Two years of high school algebra and the equivalent of one-half year of trigonometry or taken in high school.

1840-50-60 Single Variable Calculus (4,4,4) Functions, graphs, slope of a curve, definition of a derivative, limits, derivatives of algebraic functions, implicit differentiation, chain rule, differentials, continuity, applications of derivatives, maxima and minima. Indefinite integral, area, definite integral, Fundamental Theorem of Calculus, applications of the derivative, integral, logarithmic, exponential, and trigonometric functions and their derivatives. Techniques of integration, plane analytic geometry, polar coordinates. Must be taken in sequence. Note: No student who has received credit for Math 1840 with a grade of C or better may subsequently receive credit for Math 1540 or 1700. Credit will not be given for both 1840 and 1841. Prereq: Two years of high school algebra, one year of geometry, and one semester of trigonometry, or equivalent.

1841-51 Calculus for Biological Sciences (4) Course for students whose intended major is in an area of the life sciences. Functions, graphs, differentiation, integration of algebraic, exponential, and trigonometric functions, applications of the derivative and definite integral, growth curves, Taylor polynomials. Prereq: 1 year of high school algebra, one year of geometry, and one semester of trigonometry, or equivalent.

1842-52-62 Single Variable Calculus with Computer Support (5,5,5) Same coverage of calculus as 1840-50-60 with computer. Elementary FTC is introduced and applied to problems from following areas: computer evaluation of functions; limit operations; continuity; definition of derivative; approximate solutions via Newton's method; computerized numerical integration. Prereq: Math 1540 or 1840 and 1841. Must be taken in sequence. Note: Credit will not be given for both 1840 and 1841.

1848-56-68 Honors: Single Variable Calculus (4,4,4) Honors course for students who have had trigonometry, selected on basis of placement test scores and high school record. Students receiving a grade below B in 1848 will complete the year's work in calculus by taking 1849-69. Students taking 1848 will be available for students who perform well in 1846. Must be taken in sequence.

1900 Selected Topics (4) Applications of definite integration; approximation integration; simultaneous linear equations; matrix inversion; elementary linear programming; infinite series; descriptive statistics and finite probability. This course is especially recommended for architecture majors. Prereq: 1840-50. A student wishing to continue the study of calculus after taking 1900 should consult the mathematics department.

2110-20-30 Structures of the Number System (3,3,3) 2110—Set theory: whole numbers, integers, 2120—Inverses, order properties, rational numbers. 2130—Elementary number theory, rational and irrational numbers. Elementary counting techniques, basic data analysis. Prereq: One year of high school algebra and at least sophomore standing in elementary education, College of Education, or consent of instructor.

2215 Discrete Structures I (3) Prereq: 1820 and Math 1850. (Same as Computer Science 2215.)

2540 Calculus IV (4) For students who have completed 1550 or students who have had a significant introduction to calculus in high school. Definition of a derivative, rules for computing, the chain rule, implicit differentiation, applications of derivatives; Rolle's Theorem, the Mean Value Theorem, maxima and minima; definite integrals and applications; the definite integral theory, Fundamental Theorem of integral calculus. Derivatives and integrals of transcendental functions, notions of integration, parametric equations, vectors, differentiation of vectors, scalar and vector products, equations of planes and lines, surfaces. Partial differentiation, directional derivatives, the chain rule, the total differential, maxima and minima, line integrals, exact differentials, multiple integrals, Green's, Stokes's, and divergence theorems, first and second partial derivatives, the directional derivative, Taylor series, tests for convergence, power series, Taylor's series. Prereq: Math 1560 or at least one semester of high school calculus.


Prerequisites: If specific courses are listed as prerequisites, equivalent preparation satisfactory to the instructor may substitute. Graduating standing is prerequisite to enrollment in courses numbered above 6000. Undergraduates working towards a major in mathematics with a view to taking advanced work are strongly advised to include 4510-20-30 and 4150-60 during the junior or senior year.

3000 Elementary Quantitative Methods (4) Elementary course designed to prepare students in social and life sciences for quantitative courses in their department. Treats basic topics in probability and statistics without calculus. Course cannot be used to meet requirements for majors or minors in mathematics, nor is it available for credit to students in College of Business Administration.

3050 Elementary Probability and Statistical Analysis (3) Combinatorial problems; sample spaces, sets, and events; statistical independence; axiomatic probability theory; random variables and their distributions; simple random processes. Prereq: 1550-60 or equivalent. Does not satisfy the requirements of a major or minor in mathematics.

3060 Elementary Statistical Analysis (3) Elementary probability distributions; sampling theory; confidence intervals and hypothesis testing; least squares and linear regression. Prereq: 3050 or consent of instructor. Does not satisfy the requirements of a major or minor in mathematics.

3090 Polynomials and Rings (3) An introduction to abstract algebra, beginning with study of integers followed by the more general notions of rings, integral domains, number fields, finite fields, and certain ring theoretic properties shared by integers and polynomial rings over fields. Prereq or coreq: Math 3100 or consent of instructor.

3100 Logic and Sets (3) Elements of mathematical logic; elementary algebra of sets. Primarily for students in the College of Education. Prereq: 1 year of college mathematics. Does not satisfy the requirements of a major or minor in mathematics.

3110 Real Number System (3) Laws of arithmetic; rational and irrational numbers; fields. Primarily for students in the College of Education. Prereq: 1 year of college mathematics. Does not satisfy the requirements of a major or minor in mathematics.

3150 Introduction to Numerical Algorithms and Programming (3) (Same as Computer Science 3150.)

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

3215 Discrete Structures II (3) (Same as Computer Science 3215.)

3220 History of Mathematics (3) Survey of development of mathematics, from ancient to modern times. Not acceptable for satisfying requirements for a major or minor in mathematics. Prereq: Math 1860 or 2550 or equivalent.

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


3330 Transformational Geometry (3) Fundamental transformations in Euclidean geometry. Classification of geometries and similarities; symmetries of polygons, inversions. Prereq: One year of college mathematics.

3510 Intermediate Analysis for Teachers (3) Primarily for students in secondary mathematics education. Course covers elementary calculus from an advanced viewpoint with emphasis on proofs of basic theorems. Topics covered include limits of sequences and functions, continuity, derivatives, definite integral, and fundamental theorem of integral calculus. Prereq: 1550-60 or 1860. Does not satisfy the requirements for a major or minor in mathematics.

3560-60 Intermediate Analysis (3,3) Real number system, functions, sequences, uniform continuity, differentiation and Riemann integration. Must be taken in sequence. Prereq: 2840-50-60.

3720 Theory of Equations (3) Techniques for finding roots of polynomials. Roots of complex numbers. Polynomial function, synthetic division, remainder, factors, separation of roots, Sturm's Theorem, Horner's method of polynomial content, Newton's methods. Must be taken in sequence. Credit will not be given for both 3720 and 3750.

3780-90 Introduction to Combinatorial Theory (3,3) Introduction to problems in discrete mathematics and combinatorics. First order terms, counting, finite fields, partitions, block designs. Prereq: Math 2860 or consent of instructor.

3810 How to Prove It (3) Course is designed to improve understanding of nature and methods of proof, and to familiarize students with standards expected in participation in seminar setting. Variable content will include certain standard topics such as elementary set theory, relations, functions, derivatives, infinite integral, and mathematical induction. Coreq: 2850 or 2560.

3851 Mathematical Models in the Life Sciences (3) Introduction to difference equations and differential equations, Mathematical modeling techniques applied to biological phenomena. Does not satisfy the requirements of a major or minor in mathematics.

3890-30 Topology of Euclidean Spaces (3,3) Topics include topological properties of compactness, connectedness, completeness, continuity, functions, homeomorphism, con-tinuous and topological invariants. Must be taken in sequence. Prereq: 3810 or 2868 or consent of instructor.

3990 Studies in Mathematics (1-4) Credit determined at registration. May be repeated for credit with consent of department; maximum credit 9 hours. Prereq: Consent of instructor.

4050-60 Matrix Algebra and Applications (3,3) Vector spaces, linear transformations, eigenvalues and eigenvectors, similarity and unitary transformations, singular value decomposition and the least squares problem. Prereq: Vector Calculus or multivariable calculus. Optional topics: general linear forms, evolution of discrete and continuous systems, quadratic forms and variational principles, related topics. Must be taken in sequence. Prereq: Math 2860.

4070 Matrix Algebra and Applications (3) Topics to be chosen at the discretion of instructor. Prereq: 4050-60.

4102 Off-Campus Study (1-16) See page 159.


4500-60 Abstract Algebra (3,3) Equivalence relations and partitions, properties of integers, elementary theo-
4225 Numerical Solution to Equations and Numerical Approximation (3) Introduction to computation, instabilities, rounding errors. Solution of a single nonlinear equation; introduction to iterative methods for linear and nonlinear systems. Polynomial equations: power and inverse power methods for eigenvalues. Approximation by polynomials, piecewise polynomials, trigonometric polynomials. Prereq: 2150 or 3155. (Same as Computer Science 4225.)

4235 Numerical Methods for Ordinary Differential Equations (3) Interpolation by polynomials and piecewise polynomials, quadrature; single-step and multistep methods for differential equations. Stability, consistency, and convergence. Current algorithms, variable step and order; stiff systems. Boundary value problems. Prereq: 3150 or 3155, and 4610 or 4225. (Same as Computer Science 4235.)


4250-60 Introduction to Complex Analysis (3,3) Complex valued functions, Cauchy-Riemann equations, Cauchy's theorem, Taylor and Laurent series, residues and their applications. 4260—Conformal mappings, Mobius transformations. Dirichlet problem, applications (steady temperatures, electrostatics, fluid flow), additional topics in complex function theory. Prereq: 2860; one 4000-level mathematics course recommended. May be repeated for credit.

4510-20-30 Introduction to Analysis (3,3,3) Real number system, functions, sequences, limits, continuity, uniform continuity, differentiation, integration, functions of several variables, implicit function theory, multiple integrals, infinite series, sequences and series of functions, uniform convergence. Taylor series. Should be taken in sequence. NOTE: Credit will not be given for both 4530 and 4710.

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

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

tion, Laplace and Fourier transform methods. Prereq: 2860 or 4050. Must be taken in sequence.

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

4650-60-70 Introduction to Mathematical Statistics (3,3,3) Introduction to probability; discrete and continuous distributions; correlation, regression, and statistical independence. Binomial, Poisson, hypergeometric, and normal distributions. 4760—Expectation, conditional expectation, and characteristic function of random variables; the weak and strong laws of large numbers, and the central limit theorem. 4770—Markov chains: limiting probabilities; steady-state and stationairy distributions; Stochastic processes; Poisson, birth and death processes; Kolmogorov equations. Prereq: Math 2849-50-59.

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

4910 Senior Topics (3) Topics vary. Assignments will include library research and oral and written reports. May be repeated once for credit. Prereq: 3500-60, senior standing, and consent of instructor.


4980 Readings in Mathematics (1-3) Open to superior students interested in independent study with faculty guidance. May be repeated. Maximum credit 9 hours.

4990 Studies in Mathematics (1-4) Credit determined at registration. May be repeated for credit with consent of department. Prereq: Math Department recommendation of member of mathematics professorial staff and consent of department.

GRADUATE

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

Medieval Studies

See Cultural Studies.

Microbiology

Professors: A. Brown (Head), Ph.D. Chicago, R. W. Beck, Ph.D. Wisconsin; J. M. Becker, Ph.D. Cincinnati; R. J. Courtney, Ph.D. Montana; K. M. Maryland; J. O. Mundt (Emeritus), Ph.D. Michigan State; W. S. Riggby, Ph.D. Yale; B. T. House, Ph.D. Georgia (Canada); B. C. Sibley, Ph.D. England; J. M. Woodward (Emeritus), Ph.D. Kansas; C. J. Wust, Ph.D. Indiana.

Associate Professors: D. A. Bemis, Ph.D. M.V. Ph.D. Michigan State; G. S. Sayler, Ph.D. Idaho.

Assistant Professors: D. A. Bemis, Ph.D. Cornell; R. N. Moore, Ph.D. Texas-Austin; K. M. Sirokin, Ph.D. Michigan State; G. Stacey, Ph.D. Texas-Austin.

UNDERGRADUATE

B.A. Major: Consists of Biology 3110, 3120, Biochemistry 4110, 4120, Microbiology 3200, 3519, 3700, and 16 hours of upper-division courses in microbiology of which 4 hours must be laboratory courses. Prerequisites to the major are Biology 1210-20-30 and Chemistry 1110-20-30. Corequisites are Chemistry 3211-21-31, 3219-29-39, and Mathematics 1841-51 or 2840-50-60. Students intending to do post-graduate work should take a calculus sequence and Physics 2210-20-30.

Microbiology (564)

2110 Microbiology for Student Nurses (4) Introductory course offered only to student nurses in diploma program of hospitals affiliated with The University of Tennessee. Microbiological principles as they apply to nursing care of the patient, epidemiology of infection, and principles of immunity and allergy. 3 hours and 1 lab.

2910 General Microbiology (3) General properties of bacteria, viruses, and fungi including study of pathogenesis, immunity, and applied bacteriology. The combination of 2910-2911 or 2910-2919 meets the needs of programs that require a one-semester course in microbiology. Coreq: 2910.

2911 Microbes in Action (1) Discussions, demonstrations, and films relating to the subject matter of 2910. Students do not receive credit for 2911 if 2919 has been taken. Prereq or coreq: 2910.

2919 Laboratory in General Microbiology (2) Laboratory exercises designed to accompany 2910. Open only to students in the College of Nursing, preventerine
tology, medicine, technology, food technology, food science, nutrition, or food systems administration. Others by consent of instructor. Students do not receive credit for 2910 if 2911 has been taken. Prereq or coreq: 2910.

3200 Medical Microbiology (3) Disease producing microorganisms including bacteria, viruses, and fungi; basic principles and mechanisms involved in resistance to infectious disease. Prereq: Chemistry 1110-20-30, Biology 3120; coreq: 3519, Biology 3110.

3519 Introductory Microbiology Laboratory (2) Basic techniques for examination, cultivation, and identification of microorganisms. Coreq: 3200 or 3700.


3810 Food Bacteriology (3) Standard methods for examination, cultivation, and identification of bacteria associated with food fermentation and food spoilage. Prereq: 2910 or 3700 and Chemistry 2230 or 3211. 2 hours and 2 labs.

3819 Food Bacteriology Laboratory (2) Laboratory methods for examination, cultivation, and identification of bacteria associated with food fermentation and food spoilage. Prereq: 2919 or 3519; coreq: 3810.

3820 Yeasts and Molds (3) Morphology, taxonomy, and physiology of yeasts, molds, and fungi of industrial importance. Prereq: 2910 or 3700, or consent of instructor. 2 hours and 2 labs.

3829 Yeasts and Molds Laboratory (2) Laboratory methods for examination, cultivation, and identification of bacteria associated with food fermentation and food spoilage. Prereq: 2919 or 3519; coreq: 3820.

4010 Biology of Soil Microorganisms (3) (Same as Entomology and Plant Pathology 4010.)

401 Foreign Study (1-16) See page 159. No more than 3 hours may be applied toward a major or minor in microbiology. May be repeated. Maximum credit 16 hours.

402 Off-Campus Study (1-16) See page 159. No more than 3 hours may be applied toward a major or
minor in microbiology. May be repeated. Maximum credit 2 hrs.

4103 Independent Study (1-16) See page 159. No more than 3 hrs may be applied toward a major or minor in microbiology. May be repeated. Maximum credit 16 hrs.

4110 Physiology of Bacteria (3) Modern concepts of bacterial physiology and metabolism including cell structure and function. Prereq: 3700 and 12 hrs of organic chemistry.

4119 Bacterial Physiology Laboratory (2) Prereq: 3519; coreq: 4119.

4120 Taxonomy of Bacteria (3) Bacterial classification. Prereq: 3700 and 3519. 3 hrs.

4140 Molecular Genetics (3) Transmission and expression of genetic information at the molecular level. Prereq: 3700, one year organic chemistry, and consent of instructor. S/NC.

4149 Techniques in Microbial Genetics (2) Practical experience in basic techniques in experimentation in microbial genetics. Coreq: 4140.

4150 Microbial Ecology (3) Application of ecological principles to study of microbial communities. Emphasis on functional role of microorganisms in natural environments. Prereq: organic chemistry and consent of instructor. 3 hours.

4159 Experimental Microbial Ecology (3) Survey of techniques for assessment of microbial forms, functions, and interactions in a variety of habitats. Prereq: 3519; coreq: 4150 or consent of instructor. 1 hr and 2 labs.

4270 Immunology (3) Principles of inflammation and immunity, immunoglobulin structure and theories of formation, complement, hypersensitivities, cell cooperation in immune mechanisms, abnormalities of the immune system. Prereq: Biology 3130, or consent of instructor.

4279 Advanced Immunology Laboratory (2) Laboratory exercises designed to accompany 4270. Prereq or coreq: 4270.

4320 Pathogenic Bacteriology (3) Disease producing microorganisms including bacteria, rickettsia, and chlamydia. Prereq: 3200.

4329 Pathogenic Bacteriology Laboratory (2) Techniques for isolation, cultivation, and identification of pathogenic bacteria. Prereq: 3200; coreq: 4320.

4330 Medical Mycology (3) Disease causing fungi, cytology, physiology, pathogenesis, and immunity, emphasis on methodology of isolation and identification. Prereq: 3700.

4339 Medical Mycology Laboratory (2) Prereq: 3519; coreq: 4330.

4420 Molecular Virology (3) Molecular aspects of the replication, assembly, and expression of viruses, with emphasis on virology and virology of short half-life radioactive materials. Emphasis placed on in vivo diagnostic medical uses and radiation safety.

4460 Histology (1) Overview of techniques of preparation of tissue for macroscopic evaluation and role of histopathology in clinical diagnosis.

4671 Orientation and Basic Techniques (1) Designed to facilitate transfer of students from campus to hospital community and clinical laboratory. Introduces students to medical terminology, ethics, and health team concept. Orientation to basic techniques of methods of study include procedures for collection and handling of specimens, principles of operation of many laboratory instruments, review of laboratory math, and introduction to quality control procedures. Portions of course extend over entire clinical year.

4702 Principles of Supervision and Education in Medical Technology (1) Seminars in basic principles of management, supervision, and education theories and methods. Comprehensive examination covers entire course.

Music (698)


Music Program offers curricula leading to the Bachelor of Music degree, which is designed to prepare students for graduate study and for professional positions, and the Bachelor of Arts degree with a major and minor in Music, designed for those students who have a strong interest in music, but desire a comprehensive liberal studies program. Information regarding requirements for the B.M. degree may be found on page 154.

B.A. Degree/Music Requirements:

Prerequisites: 6 hrs.

Music Theory 1111-21-31: 9 hrs.

Music Ear Training 1112-22-32: 9 hrs.

Applied Study (1000 level): 3 hrs.

Courses toward the major:

Music Theory 2111-21-31: 9 hrs.


Applied Study (2000 and above): 2 hrs. per quarter.

Ensemble: 3 hrs.

Courses selected from Aesthetics of Music 5400, Independent Study 4100, 4200; Lecture recital 5064.

Electives: 3-6 hrs.

Solo Class (required when taking 2 lessons per week): 0 hrs. (Prerequisites): + 15 hrs.

TOTAL HOURS: 60-66

Minor:

(a) Concentration in Applied Music—consists of 24 hrs in courses numbered 2000 and above, distributed as follows: Music 2300, 12 hrs in applied music and 9 hrs in music electives. Prerequisites are Music 1000 or equivalent and three quarters of applied music study at the 1500-1599 levels.

(b) Concentration in Music History and Literature—consists of 24 hrs in courses numbered 2300 and above, distributed as follows: Music 2300, 12 hrs in Music History and Literature courses and 9 hrs in music electives. Prerequisites are Music 1000 or equivalent and three quarters of applied music study at the 1500-1599 levels.

The Bachelor of Science in Music Education, designed for preparation for institutional teaching, is administered by the Department of Music Education. See page 99 for requirements.

GENERAL

1000 Fundamentals of Music Theory (3) Theory and practice of basic elements of music. 3 hrs.

10-20-30 Class Piano (1,1,1): For music and music education majors only. Must be taken in sequence. Course assignment is made following completion of Piano Competency Examination. Waived courses must be substituted with an equivalent number of quarters of study in Music 1500 or above.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Introduction to Musical Theatre Technology (3) Stage technology unique to lyric stage.</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>Vocal Techniques in Popular Music (1) Development of performance techniques in Broadway and other contemporary music styles.</td>
<td>Consent of instructor. May be repeated for credit.</td>
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<tr>
<td>2040-50-60</td>
<td>Class Piano (1,1,1) Must be taken in sequence.</td>
<td></td>
</tr>
<tr>
<td>2306-37-38</td>
<td>Advanced Piano Literature (2,2,2) Piano music from preclassical period to present.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2304</td>
<td>Styles in Opera Acting (3) Study and practice of styles in opera acting based on historical and national characteristics.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2305-56-57</td>
<td>Elementary and Intermediate Piano Pedagogy (2,2,2) Examination and study of piano methods and materials designed for teaching precollege level students.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2306</td>
<td>Advanced Choral Conducting I (3) Develop-ment of refinement of conducting techniques; including chart and changing meters.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2307-22-23</td>
<td>Song Literature (2,2,2) Study of literature from 1750 to present with emphasis on performance practices.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2308</td>
<td>Harpsichord Techniques (1) Technique, literature, performance practice, and basic tuning and maintenance.</td>
<td>Consent of instructor.</td>
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<tr>
<td>2309</td>
<td>Special Topics in Performance (1-3) Consent of department head. May be repeated.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2310</td>
<td>Percussion Literature (1) Study of the techniques and materials involved in college-level theory programs.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2311</td>
<td>Recording Techniques (3) Instrument performance, microphone technique, and the recording process.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2312-23-33</td>
<td>Advanced Ear Training (1,1,1) Should be taken concurrently with 2111-21-31 or 2188-29-38.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2313</td>
<td>Recording Techniques (3) Instrument performance, microphone technique, and the recording process.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2314-24-32</td>
<td>Song Literature (2,2,2) Study of literature from 1750 to present with emphasis on performance practices.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2315</td>
<td>Percussion Literature (1) Study of the techniques and materials involved in college-level theory programs.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2316</td>
<td>String Literature (2) Study of the techniques and materials involved in college-level theory programs.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2317</td>
<td>Composition Techniques (3) Composition and analysis of individual problems in jazz improvisation.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2319</td>
<td>Jazz Directing (1) Rehearsal techniques of jazz ensembles: special conducting techniques, repertoire, library systems, programming, and supervised laboratory experience in rehearsing university jazz ensembles.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2320-22-23</td>
<td>Song Literature (2,2,2) Study of literature from 1750 to present with emphasis on performance practices.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2321</td>
<td>Percussion Literature (1) Study of the techniques and materials involved in college-level theory programs.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2322-33-34</td>
<td>Advanced Ear Training (1,1,1) Should be taken concurrently with 2111-21-31 or 2188-29-38.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2324</td>
<td>Composition Techniques (3) Composition and analysis of individual problems in jazz improvisation.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2325</td>
<td>Jazz Directing (1) Rehearsal techniques of jazz ensembles: special conducting techniques, repertoire, library systems, programming, and supervised laboratory experience in rehearsing university jazz ensembles.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2326-27-28</td>
<td>Song Literature (2,2,2) Study of literature from 1750 to present with emphasis on performance practices.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2327</td>
<td>Percussion Literature (1) Study of the techniques and materials involved in college-level theory programs.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2328</td>
<td>Composition Techniques (3) Composition and analysis of individual problems in jazz improvisation.</td>
<td>Consent of instructor.</td>
</tr>
<tr>
<td>2329</td>
<td>Jazz Directing (1) Rehearsal techniques of jazz ensembles: special conducting techniques, repertoire, library systems, programming, and supervised laboratory experience in rehearsing university jazz ensembles.</td>
<td>Consent of instructor.</td>
</tr>
</tbody>
</table>
masterworks of music from 1600 to present. For non-music majors. Prereq: 1210 or 1220 or consent of instructor.

1230 History of Rock (3) Study of selected, representative music composed for non-music majors and minors only.

2310-20-30-40 History of Music (3,3,3,3) 2310-to 30 through chronological approach. For music majors and minors only.

2320 Orientation in Music: Music for the Theatre (3) Study of selected, representative music composed for Broadway stage, films, operetta, and opera. Prereq 1210 or consent of instructor.

2450 The Symphony (3) Survey of symphonic literature from precursors of classical symphony to present.

3200 Chamber Music (3) Survey of chamber music from 1750 to present.

3217-81 History of Opera (3,3) Dramatic, vocal, and orchestral elements in operas of Italian, French, and German School. 3217—1600-1800. 3221—1800-present.

3440 Oratorio (3) Choral works other than those appropriate for use in church.

3450 Introduction to Afro-American Music (3) History and African music, blues, gospel music, and jazz with emphasis on Black artists and their contributions.


3560 Evolution of Jazz (3) Study of origin, development, and styles of jazz music and its exponents.

4003-04-05 The Organ and its Literature (3,3,3) The development of the organ and organ literature from the Middle Ages to the present, problems of style and interpretation; pedagogical literature and methods; organ design. Prereq or coreq: 2310-20-30-40 and consent of instructor.

4035 Keyboard Literature Before 1750 (2) A survey of keyboard literature from the sixteenth century to the early nineteenth century. Prereq: 4036 or 4037 or 4038 or consent of instructor.

4020 Independent Study in Music History and Literature (1-3) May be repeated for credit. Prereq: Consent of department head.

4029 Survey of Music History (3) History of music with emphasis on genres, style changes, and cultural forces. Covers the Western European tradition from 490 to 1900. Recommended as a review course for graduate students. Prereq: Consent of instructor.

4241 Music of the United States (3) U.S. music from colonial times to present. Emphasis on 20th century. Includes both folk and art music traditions. Recommended: Music 1210.


4290 Gregorian Chant (3) Chants of Latin rite. Masses and Offices examined as functional music as well as by type.

4340-50 Works of Bach (3,3) Detailed examination of sonatas, chamber, keyboard, and orchestral works; cantatas, motets, Passions, and oratorios. 4340—instrumental works; 4350—vocal works.

APPLIED MUSIC

Applied study is classified as Principal or Secondary.

Students studying their principal (major) instrument register for credit appropriate to their program, 2-4 credit hours; students studying a secondary instrument register for 1 hour of credit. Study at the principal level receives one hour of private instruction per week or a one-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 receives one-half hour private instruction per week or its equivalent in class instruction. Applied music courses do not permit non-credit registration nor may students elect non-conventional grading.

Non-music students will be accepted at the secondary level if they meet audition requirements established by area faculty (piano, voice, violin, etc.) and instruction time is available.

Undergraduate students seeking entrance to applied music courses must be concurrently registered for no less than six credit hours in academic courses. Graduate students must be concurrently registered for no less than six credit hours in academic courses. Exceptions to these requirements may be made with the approval of the department head if applied music registration is necessary to completion of degree requirements.

Advancement in applied music is measured by proficiency (Jury) examination. Students who do not meet proficiency requirements at any level may be required additional study at that level. Course level and credit hours will be determined by the applied faculty.

All students studying applied music at the principal level are required to register for Music 2000 Solo Class. The requirements for this course are to attend scheduled concerts, recitals, master, repertoire, and solo classes, and to perform at least once each quarter as partial fulfillment of applied music credit requirements.

Applied Music Fees: $20 per quarter for half-hour lesson (1 credit hour) $40 per hour for 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 fees are not refundable after lessons have been scheduled.

1500-2500-3500-4500-5500 Flute (1-4) May be repeated for credit.

1505-2505-3505-4505-5505 Oboe (1-4) May be repeated for credit.

1510-2510-3510-4510-5510 Bassoon (1-4) May be repeated for credit.

1515-2515-3515-4515-5515 Clarinet (1-4) May be repeated for credit.

1520-2520-3520-4520-5520 Saxophone (1-4) May be repeated for credit.

1525-2525-3525-4525-5525 Horn (1-4) May be repeated for credit.

1530-2530-3530-4530-5530 Trumpet (1-4) May be repeated for credit.

1535-2535-3535-4535-5535 Trombone (1-4) May be repeated for credit.

1540-2540-3540-4540-5540 Baritone (1-4) May be repeated for credit.

1545-2545-3545-4545-5545 Tuba (1-4) May be repeated for credit.

1550-2550-3550-4550-5550 Percussion (1-4) May be repeated for credit.

1555-2555-3555-4555-5555 Voice (1-4) May be repeated for credit.

1650-2560-3560-4560-5560 Violin (1-4) May be repeated for credit.

1655-2565-3565-4565-5565 Viola (1-4) May be repeated for credit.

1750-2570-3570-4570-5570 Cello (1-4) May be repeated for credit.

1755-2575-3575-4575-5575 String Bass (1-4) May be repeated for credit.

1757-2577-3577-4577 Electric Bass (1-4) May be repeated for credit.

1850-2580-3580-4580-5580 Piano (1-4) May be repeated for credit.

1855-2585-3585-4585-5585 Harpsichord (1-4) May be repeated for credit.

1950-2590-3590-4590-5590 Organ (1-4) May be repeated for credit.

1955-2595-3595-4595-5595 Guitar (1-4) May be repeated for credit.

2599-3599-4599-5599 Composition (1-3,1-3,1-3) May be repeated for credit. Prereq: Consent of instructor.

3597-4597-5597 Composition with Electronic Media (1-3,1-3,1-3) May be repeated for credit. Prereq: 3199 and consent of instructor.

ENSEMBLES

Ensemble participation during each quarter of residence is required of all students studying applied music. String, woodwind, brass, and percussion students must meet the following ensemble requirements: (1) string students must participate in orchestra each quarter; (2) woodwind, brass, and percussion students must acquire a minimum of six credits in any of the following ensembles: marching band, concert band, campus band, symphony orchestra, jazz ensemble; (3) voice students must acquire a minimum of six credits in any of the following ensembles: Concert Chor, Chamber Singers, University Chorus, Women's Chorus.

A student's preference for musical organization will be honored whenever possible, but factors considered in making the assignment will include playing ability, specific needs of various organizations, and previous performance experience at the University.

3600-5600 Small Ensemble (1,1) May be repeated for credit.

3601-5601 Woodwind Choir (1,1) May be repeated for credit.

3602-5602 Brass Choir (1,1) May be repeated for credit.

3604-5604 Jazz Ensemble (1,1) May be repeated for credit.

3606-5606 Trombone Choir (1,1) May be repeated for credit.

3607 Tuba Ensemble (1) May be repeated for credit.

3610-5610 Percussion Ensemble (1,1) May be repeated for credit.

3611-5611 Marimba Choir (1) May be repeated for credit.
Philosophy is an appropriate major for students wishing a broad education and for those students preparing for careers as writers (whether journalistic or literary), lawyers, ministers, or teachers, or for positions in various types of political and government service, or for non-technical positions in business or industry.

A major in philosophy implies a balanced program in the humanities, natural and social sciences. Graduate students should read French or German, preferably both; other ancient or modern languages are useful and necessary for some advanced work.

UNDERGRADUATE

B.A. Major: 36 hours in courses numbered 2000 and above. Majors should discuss their programs with a member of the philosophy faculty.

Minor: 24 hours in courses numbered 2000 and above. It is suggested that minors discuss their programs with a member of the philosophy faculty.

1510 Introduction to Philosophy: Human Nature and Values (4) E.

1520 The Human Condition: Value and Reality (4) The meaning of life, the existence of God, freedom of the will, human nature and value.

1521 The Human Condition: Consciousness and Reality (4) The place of mind in a material universe and the nature and possibilities of human knowledge. May be taken before 1511.

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

1611 Foundations of Western Thought: Antiquity through 1500 (4) Plato, Late Antiquity and the Medieval period.

1621 Foundations of Western Thought: 1500 through Early Twentieth Century (4) Development of Rationalist and Empirical Thought, Nineteenth Century and early Twentieth Century philosophy. May be taken before 1611.

1710 Informal Reasoning (4) Arguments, informal fallacies, use of language, definitions.

1810 Introduction to Symbolic Logic (4) Formal deductive reasoning; propositions, arguments in natural language, symbolization, truth and validity, propositional logic, predicate logic.

2310 Elementary Ethics (4) Theories of ethical values. E.

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

2510 Elementary Logic (4) Introduction to deductive logic, including truth tables and elementary formal proofs. E.

3000 Special Topics (4) May be repeated for credit one time.

3100 Socrates (4) An attempt to delineate the philosophical tenets of the historical Socrates on the basis of the views of the character Socrates depicted in Plato's dialogues, in Xenophon's Socratic works, and in Aristophanes' The Clouds.

3111 Ancient Western Philosophy (4) E.

3121 Medieval Philosophy (4)

3121 Seventeenth-and Eighteenth-Century Philosophy (4)

3141 Nineteenth-Century Philosophy (4)

3151 Contemporary Philosophy (4) Survey of recent movements in philosophy.

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

3311-12 American Philosophy (4,4) 3311—Colonial to late 19th century; 3312—Late 19th century to present.

3220 Philosophy of Law (4) Nature, sources, function of law.

3330 Philosophy of History (4) Speculative and critical aspects of philosophy of history.

3410 Philosophical Ideas in Literature (4) Philosophical assumptions and implications in major literary works.

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

3430 The Concept of Woman (4) An inquiry into the nature of women as it has been conceived by major western philosophers from Plato to Simone de Beauvoir. (Same as Women's Studies 3430.)

3435 Philosophy of Feminism (4) An examination of various feminist theories and their application to social issues of concern to women today. (Same as Women's Studies 3435.)


3510 Existentialism (4)

3550 Marxism as Philosophy (4)

3570 Philosophical Foundations of Democratic Society (4) Philosophical theories relating to nature and justification of the central values, principles, and concepts of democratic society.

3590 Business Ethics (4) Ethical problems as they confront both business as a social institution and individuals in business.

3605-06 Professional Responsibility (4,4) 3605—Critical analysis of selected classic texts from philosophy, religious studies, and social sciences dealing with the nature of responsibility, the nature of professionalism, and the application of concepts of responsibility to professional activity. Illustrations will be drawn from a variety of professional fields of practice. 3606—Application of the theoretical principles and analytic skills developed in 3605 to selected case studies and other detailed descriptions of professional practice from the following professional fields: Engineering/Architecture; Business/Accounting; and at least one of (a) Law/Politics; (b) Helping Professions (Social Work, Human Services, Religious Ministry); (c) Teaching. (Same as Religious Studies 3605-06.)

3611 Medical Ethics (4) Explores ethical issues in medicine such as abortion, euthanasia, human experimentation, fairness in health care delivery and the doctor-patient relationship. (Same as Religious Studies 3611.)

3650 Philosophy and Religion in India (4) (Same as Religious Studies 3650.)

3660 Buddhist Philosophy and Religion (4) (Same as Religious Studies 3660.)

3671 Religion and Philosophy in China (4) (Same as Religious Studies 3671.)

3690 Philosophy of Religion (4) Analysis of basic issues of religion. (Same as Religious Studies 3690.)


3740-50 Conceptual History of Science (4,4) 3740—The Scientific Revolution: historical evolution of thought in astronomy, mechanics, and philosophy of nature up to Newton. 3745—The development and decline of Newtonian science: historical evolution of thought on the nature of matter and of light, and on that of life. Prereq.: 8 hours of physical science or consent of instructor.

3770 Introduction to Philosophy of Science (4) Standard topics in philosophy of science: scientific method, nature of laws and theories, problem of induction, explanation, measurement. No background in logic is presupposed.
3810 Introductory Symbolic Logic (4) Techniques for formal analysis of deductive reasoning (propositional and quantification theory).

3910 Contemporary Aesthetics (4) Philosophical discussion of contemporary art.

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

4101 Foreign Study (1-16) See page 159.

4102 Off-Campus Study (1-16) See page 159.

4103 Independent Study (1-16) See page 159.

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

4200 Classical Indian Systems of Philosophy: The Moksha Tradition (4) (Same as Religious Studies 4200.)

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

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

4350 Intermediate Moral and Legal Theory (4) Prereq: 4310 or 4370 or consent of instructor.

4410 Plato (4) Prereq: 8 hours of philosophy or consent of instructor.

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

4430 Continental Rationalism (4) Prereq: 8 hours of philosophy or consent of instructor.

4440 British Empiricism (4) Prereq: 8 hours of philosophy or consent of instructor.

4470 Kant (4) Prereq: 8 hours of philosophy or consent of instructor.

4480 Advanced Topics in Existentialism and Phenomenology (4) Prereq: 8 hours of philosophy or consent of instructor.

4511 Advanced Topics in Logic (4) Prereq: Consent of instructor. May be repeated for credit.

4520 Philosophy of Mind (4) Problems of mind and body in relation to consciousness and personal identity. Prereq: 8 hours of philosophy or consent of instructor.

4530 Philosophy of Language (4) Prereq: 8 hours of philosophy or consent of instructor.

4710 Philosophy of Natural Science (4) Consideration of standard topics pertinent to natural science including reduction of theories and teleological explanation. Familiarity with symbolic logic is recommended. Prereq: 3770 or two years of natural science.

4720 Philosophy of Social Science (4) Examination of methods of inquiry and modes of explanation of social sciences. Prereq: 3770 or two years of social science.

4810 Metaphysics (4) Prereq: 8 hours of philosophy or consent of instructor.

GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Physical Sciences

Major: None offered.

Minor: Consists of the following courses: Physics 2210-20-30, Chemistry 2140-49, 3211-21-31, 3219-29-39, and six hours chosen from Biochemistry 4210-20-30, Chemistry 3410-20-30, 4140-50, 4910-20-30, or Physics 3410-20-30, 3610-20-30. Prerequisites to this minor are Mathematics 1840-50 and Chemistry 1110-20-30. The physical sciences minor is designed particularly for students majoring in one of the biological sciences and/or preparing for graduate studies in a biological science or medicine.

Math 2840 is a prerequisite for these courses.

Physics and Astronomy

Professors:

Associate Professors:
J. E. Brau, Ph.D. Massachusetts Institute of Technology; R. W. Childers, Ph.D. Vanderbilt; J. R. Cornell, Ph.D. Colorado State; H. W. Gratzer, Ph.D. Yale; K. E. Dukett, Ph.D. Tennessee; W. A. Dunn (Emeritus), Ph.D. Florida; S. B. Elston, Ph.D. Massachusetts; W. M. Farmer, Ph.D. Virginia; M. W. Geiger, Ph.D. Florida; D. R. Keferer, Ph.D. Florida; R. H. Kephart, Ph.D. Ohio State; R. W. Lide, Ph.D. Michigan; S. Y. Shaikh, Ph.D. Maryland.

Assistant Professors:
M. J. Beeging, Ph.D. Oregon; J. Burgdorfer, Ph.D. Free University Berlin; S. J. Daunt, Ph.D. Queens; R. DeSieno, Ph.D. Chicago; T. Ferrill, Ph.D. Clemson; T. H. Handler, Ph.D. Rutgers.

Research Associate Professors:
D. L. McCorkle, Ph.D. Tennessee; S. E. Nave, Ph.D. Tennessee; A. H. Rogers, Ph.D. Massachusetts Institute of Technology.

Research Assistant Professors:
S. Hunter, Ph.D. Flinders (Australia); C. S., O. Ph.D. New York University; J. A. Vrba, Ph.D. Tennessee; R. J. Warmack, Ph.D. Tennessee.

Lecturers:
R. L. Becker, Ph.D. Yale; M. H. Gabbartran.

Distinguished Service Professor.
Space Institute, Tullahoma.
NSF Research Scholar.
Chairman's Research Scholar.

Astronomy (150)

1510-20-30 Introductory Astronomy (4,4,4) Introductory survey of observational, structure and dynamics of the universe. Members and components of solar system are introduced and discussed. Incorporating results from interplanetary exploration. Stellar evolution is treated as chain of events. Characteristics of universes and evolution of the universe are examined. Principles by which one interprets astronomical observations are reinforced by lab experience. Must be taken in sequence. 3 hrs. lecture, 2 hrs. lab. Only one of three sequences Astronomy 1510-20-30, 1610-20-30, 2118-28-38 may be taken for credit.

2118-28-38 Honors: Introductory Astronomy (4,4,4). An introduction to astronomy. Components of solar system are described from viewpoint of interplanetary exploration. Evolution and properties of stars are studied. Galactic structure is examined and models of universe are discussed. Observational technique and interpretation of underlying laws of physics are emphasized in accompanying lab: 3 hrs. lecture, 2 hrs. lab. Coreq: Math 1840 or 1550 or equivalent. Only one of three sequences Astronomy 1510-20-30, 1610-20-30, 2118-28-38 may be taken for credit.


Physics (773)

UNDERGRADUATE:
B.S. Major: The B.S. major in physics is designed to give the student a broad background in the fundamental principles of classical and modern physics and in the applications of these principles to the physical world. It is also preparation for graduate study in the research fields of modern physics. A major in engineering physics, shown in tabular form on p. 121 and described on p. 130, is also offered.

Physics 1318-28-38 and Math 1840-50-60 are prerequisite to the major in Physics. The major includes the following courses: Math 2540-50-50, Physics 2318-28-38, 3110-20 (Mechanics), 3230 (Thermodynamics), 3310-20 (Electricity and Magnetism), 4110-20-30 (Quantum Mechanics), at least six hours of physics electives from 3130, 3330, 4140, 4210-40, 4610, 4630, 4640, and at least six hours of physics lab electives from 3610-20, 4510-20-30, 4540-50. Physics 4010-20 may be taken to satisfy the upper-level distribution requirement for a capstone experience.

Physics 3130-20-30 and Basic Engineering 3130-20-30 may be substituted for 3138-28-38. Transfer students from other schools and departments may substitute 2510 for 1910-20 or 1318-28. Students who do not expect to pursue graduate studies may substitute 3710-20-30 for 4110-20-30.

Minor: A minor in physics shall consist of Physics 2310-20-30 or 2318-28-38 and 15 hours from physics and astronomy courses numbered 3000 and above. Substitution provisions in the major statement also apply to the minor.

1210-20-30 Introductory Physics (4,4,4) A general course for students whose major is outside the physical sciences. Concepts of physics are developed by observation of phenomena and logic; using a minimum of mathematical analysis. Topics include: matter and motion, electric and magnetic effects, waves, electric and magnetic fields, optics and Newtonian mechanics.

1290-20-30 Physical Science: Microscopic systems including atoms, molecules, etc., the world of subatomic particles, living systems, environment, etc.
nuclei and applications such as lasers and energy technologies; also physics of particles moving at extremely high speeds. Should be taken in sequence. For graduation purposes. Must be taken in sequence. Coreq: Math 1840-50-80. 3 hours of lecture, 2 hours of lab.


1318-23-38 Honors: Fundamentals of Physics: Mechanics and Heat (4,4,4) Honors course designed for physics and engineering physics majors and for qualified students of other disciplines. Must be taken in sequence. Coreq: Math 1840-50-80. 3 hours of lecture, 2 hours of lab.

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

1450 Physics of Athletic Activity (4) Principles of physics, particularly mechanics and heat, are introduced. Discussion of these ideas will emphasize their role in physical activities related to sports. Coreq: Math 2860. 3 hours of lecture. 3 labs.


3230 Heat and Thermodynamics (3) Concepts of temperature and heat; laws of thermodynamics; applications of laws to simple physical and chemical problems. Coreq or coreq: 2330 and calculus; 3210-20 or instructor's consent.


3610-20 Electronics (3,3) Electronic components and circuits of interest to physicists. Coreq: 2110-20 or 2210-20-30 and calculus. 3 labs.

3630 Nuclear Electronics Laboratory (3) Elements of circuitry in nuclear instrumentation are designed and built, and their characteristics are tested as a function of various parameters. Coreq: 36100.

3710-20-30 Introduction to Atomic and Nuclear Physics (3,3,3) 3710 Special relativity and early quantum theory; 3720 Atom and molecular physics; 3730 Nuclear physics. Prereq: Math 2860 and Physics 2310-20-30. 3 labs.

3900 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of department.

4010 Background of Physics (3) Survey of historical development and philosophical foundations of natural science. Classical mechanics, gravity, electromagnetism, and relativity. Unifying mathematical principles underlying physical applications. Assignments will include readings from important original papers, thought-provoking problems and order-of-magnitude calculations combining different fields of classical physics, and written report on some independent study. Coreq: Senior standing in physics.

4020 Forefront of Physics (3) Survey of modern developments in physics, including various forms of quantum mechanics, quantum electrodynamics, and recent theories of particles, fields and their interactions. Discussions of unsolved questions in physics, experiments of current interest, readings in recent literature, and applications in other fields, with final oral report and term paper. Coreq: 4010.

4050 Foundations of Physics (3) Selected topics from history and philosophy of classical and modern physics. Prereq or coreq: Physics 2310 or equivalent. Consent of instructor. NOTE: No student who has received a grade of C or better in Physics 4010-20 may subsequently receive credit for Physics 4050.


4140 Elementary Nuclear Physics (3) General properties of nuclei, two-nucleon systems, nuclear forces, nuclear models, nuclear reactions, nuclear disintegration and beta-decay, nuclear spin and magnetism. Coreq: Math 2860-20. 3 hours lab, 12 hours of self-study.

4160 Physical Acoustics (4) Considerations fundamental to the exploration of any branch of acoustics; propagation of acoustic waves in the insonic, the audible, and the ultrasonic; and the hyperbolic range of frequencies. 3 hours and 1 lab. Coreq: Math 2860-20. 4 hours lab.

4230-40 Modern Optics (4,4) 4230-Geometrical optics: reflection and transmission of light at a dielectric interface; paraxial theory of interfaces, lenses, and mirrors; thick lenses, lens systems, ray tracing, polarization, image; laser light. 4240-Physical optics; mathematical foundations of wave theory; interference; Young's fringes, Fresnel diffraction; Fourier optics, holography. Coreq: 4210 or consent of instructor. 3 hours of lecture and 2 hours of lab.

4510-20-30 Atomic Physics Laboratory (3,3,3) Experiments in fundamental particle properties, photoelectricity, conduction of electricity through gases, atomic and molecular spectroscopy, X-ray. Coreq or coreq: 3710-20-30. 3 labs.

4540-50 Experimental Nuclear and Radiation Physics (4,4) Interaction of charged particles and electromagnetic radiation with matter; theory and characteristics of various detectors; statistics of counting, nuclear reactions, decay and activation. Recent techniques for investigating the nucleus and nuclear radiation. 1 hour of lecture, 6 hours of lab. Coreq: 2330.

4580 Principles of Non-Destructive Testing (3) Detection and characterization of discontinuities in nondestructive physical measurements. Ultrasonic, electromagnetic, holographic, and penetrating radiation techniques. Coreq: 2130-20-30 or consent of instructor. (Same as Engineering Science and Mechanics 4580.)

4590 Magnetic Induction Phenomena (3) Theory and application of magnetic induction phenomena. Includes non-destructive testing with eddy currents, induction heating, magnetic levitation, forming, pumping, and flow measurement. Includes lab. Coreq: 3320 or equivalent.

4640 Kinetic Theory (3) Emphasis is placed on transport properties. Includes discussions of unsolved questions in kinetic theory and the classical distribution functions. Coreq: 3320 or equivalent.

4650 Statistical Mechanics (3) Elementary methods of statistical mechanics are applied to model systems to derive the thermodynamic relations. Classical and quantum distribution functions are discussed. It is recommended that 4640 and 4650 be taken in sequence.

4680-70 Solid State Physics (3,3) 4680—Symmetry and crystal structure, lattice dynamics, specific heat. 4670—Electron band theory, transport properties, optical properties. Must be taken in sequence. Coreq: 3320 or equivalent.

4710-20-30 Introduction to Health Physics (3,3,3) Radioactivity, interaction of electromagnetic radiation with matter, radiation quantities and units, point kernel and extended sources, X-rays and gamma rays, neutron activation, interaction of charged particles with matter, stopping power, range-energy relations, counting statistics, shielding, dosimetry, waste disposal, criticality prevention, radiation biology, and ecology. Coreq: 3730.

4918-28-38 55-58-67-88-98 Honors; Research and Independent Study (1 hour each) Designed for excellent undergraduate students. Provides opportunity for research and independent study with faculty guidance. Consent of department required. Maximum credit 9 hours.

4990 Senior 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 as well as course descriptions are found in the Graduate Catalog.

Political Science (801)

Professors: T. D. Unger (Head), Ph.D. Iowa; R. S. Aver, Ph.D. Notre Dame; R. H. Carpenter, Ph.D. North Carolina; D. L. Greene (Emeritus), Ph.D. Wisconsin; W. R. Iredell, Ph.D. Chicago; D. D. Nicholas, Ph.D. Vanderbilt; J. W. Robinson, Ph.D. Syracuse; T. A. Smith, Ph.D. Ohio State; O. H. Iredell, Ph.D. Johns Hopkins; D. M. Weilborn, Ph.D. (Emeritus).

Assistant Professors: W. Freiman, Ph.D. Harvard; P. K. Freeman, Ph.D. Wisconsin; D. T. Oberski, Ph.D. Temple; J. M. Scheb, Ph.D. Florida; M. Winn, Ph.D. Washington.

BUREAU OF PUBLIC ADMINISTRATION
Professor: T. D. Unger (Director), Ph.D. Iowa.
Associate Professor: M. R. Fitzgerald, Ph.D. Oklahoma.
Assistant Professors: P. K. Freeman, Ph.D. Wisconsin; D. F. Olshtski, Ph.D. Temple.

UNDERGRADUATE
A B.A. major consists of 40 hours that must be distributed as follows:
(1) Eight hours at the 2000 level in political science arrangements.
(2) Thirty-two hours in political science courses numbered 3000 and above. These 32 hours must include at least one course in each of four areas of the discipline: United States Government and Politics/Public Administration; Comparative Government and Politics; International Relations; and Political Theory and Methodology. A minor consists of 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 divisional distribution credit but included on the Social Science list.
(2) Sixteen hours in political science courses numbered at 3000 and above. Upper-division courses on the distribution list may be included.

Honor 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 56 hours, including:
1. Eight hours at the 2000 level in political science.
2. Forty-eight additional hours in political science courses including:
   (a) Political Science 3918-28-38
   (b) Political Science 4918-28-38
   (c) 24 additional hours numbered 3000 and above. These 24 hours must include at least one course in each of four areas of the discipline: United States Government and Politics/Public Administration; Comparative Government and Politics; International Relations; and Political Theory and Methodology. To graduate with Honors in Political Science, the student must have a GPA of at least 3.3 in Political Science, and a cumulative GPA of at least 3.0.

Public Administration
See page 80 and page 158.


2020 Introduction to Political Science (4) A variety of the basic substantive concepts and concerns of political science.

2510-20 United States Government and Politics (4,4) 2510—Foundations: The Constitution, federalism, separation of powers, campaigns and elections, parties, interest groups, the media, public opinion. 2520—Institutional analysis: judicial, executive, legislative, political, and bureaucracy at national, state, and local levels.

2518-28 Honors: United States Government and Politics (4,4) Honors course designed for students of superior ability and interest. Entrance into 2518 requires a B average; selected entering freshman will be accepted on the basis of placement scores and high school record. A grade of B in 2518 is necessary for entrance into 2528.

2530 Tennessee Government and Politics (4)

2550 Governments in Knox County (4) Analysis of political institutions and processes in Knox County.

United States Government and Politics/Public Administration

3110 Political Community (4) The course examines a variety of value systems and social and political structures related to political community.

3120 Popular Culture and American Politics (4) Popular culture as it relates to American politics and government focusing on the role of film, television, fiction, music, drama, art and sports.

3545 United States Constitutional Laws: Sources of Power and Restraint (4) Analysis of judicial review, constitutional powers of President and Congress, federalism, sources of regulatory authority, and constitutional protections of political rights. 2510-20 desirable as preceding courses.


3555 Minority Group Politics in the United States (4) Content varies from quarter to quarter. May be repeated up to a maximum credit of 8 hours with consent of department.

3565 Introduction to Public Administration Organization and Management (4) Organization and decision making theory, line and staff services, politics of organization, leadership, personnel and fiscal management, administrative responsibility. 2510-20 desirable as preceding courses.

3566 Public Administration and the Policy-Making Process (4) Public bureaucracies and the policy-making process, their political environments, administrative problems associated with policy making. 2510-20 desirable as preceding courses.

3710 State Politics (4) Focus on formal and informal setting of state government. State government's role in formulating, enacting, and implementing state policy.


3750 The Urban Polity (4) Analysis of political institutions and processes in metropolitan areas. (Same as Urban Studies 3750.)

3760 Urban Policy Process (4) Analysis of urban problems and policies in metropolitan areas.

3880 American Political Thought (4) Examination of selected political ideas, doctrines, and theories in America, emphasizing their development and relationships to diverse political interests.

4410 Law and the Administrative Process (4) Power of procedures of, controls over administrators.

4535-36 Political Attitudes, Opinions, and Communication (4,4) Nature, development, formation, and distribution of politically relevant attitudes and opinions; role of leadership, persuasion, and communication in opinion-policy process.

4540 Presidency (4) Nature, functions, and processes of the President's role.

4545 The Judicial Process (4) The study of courts as components of political systems, and public policy formulation through judicial decision making. 2510-20 desirable as preceding courses.

4550 Congress (4) Nature, functions, and processes of the U.S. Congress.

4575 Special Topics in United States Government and Politics (4) May be repeated to a maximum credit of 8 hours with consent of department.

4510 Budgetary Process (4) Fiscal planning, budget and expenditure processes in government, their policy and administrative implications.

4620 Public Personnel Administration (3) Development of the merit system in government, career systems, public personnel management functions, organization for personnel management.

4740 Political Parties and Elections (4) Analysis of party systems and electoral process.

4750 Political Campaigns (4) Coverage includes all aspects of campaign process.

Comparative Government and Politics

3390 Contemporary Issues in American Public Policy (4) Examination of selected public policy issues confronting the nation, including the background, nature, and effects of present policies, and options for the future.

3415 Law in American Society (4) Law as a process through which social problems are addressed in the United States. Examples are drawn from case law, legislation, and administrative regulation.

3805 Political Change in Developing Areas (4) Characteristics and problems of political changes with primary focus on developing areas.

3615-16 Dynamics of Black African Politics (4,4)

3821 Government and Politics of the People's Republic of China (4) Examination of the Chinese political setting, political structures, participation and selected policy areas.

3825-26 Latin American Government and Politics (4,4) (Same as Latin American Studies 3825-26.)

3831-32 Government and Politics of the Soviet Union (4,4)

3835-36 Politics in Western Democracies (4,4) Political culture, patterns, and institutions of Western democratic systems.

3841 Government and Politics of Middle East and North Africa (4)

3795 Contemporary Middle East (4) (Same as History 3795.)

4060 Revolution (4) Examination of characteristics, theories, and consequences of revolution, with particular focus on left-wing revolutions and movements.

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

4675 Special Topics in Comparative Government and Politics (4) May be repeated for a maximum credit of 8 hours with consent of department.

International Relations

3701-02 Introduction to International Relations (4,4) 3701—Basic elements on international politics: major conflicts, problems of peace and security. 3702—Impact of population, resources and economic problems on international politics. International law and organizations particularly the U.N.

3712-22 U.S. Foreign Policy Process (4,4) Processes whereby U.S. foreign policies are made and implemented, focusing on interaction within federal bureaucracy and roles of the President, Congress, the press, and public opinion.

3790 Contemporary Diplomatic and Military Problems (4) Analysis of current international events.
3756 Contemporary Problems of Soviet Foreign Policy (4)
4711 International Law (4)
4727 Politics of Inter-American Relations (4) Analysis of historical and theoretical perspectives concerning formal and informal means of inter-American coordination and conflict resolution. Prerequisite: 3125.
3802 Studies in Medieval Political Thought (4) From the decline of the Western Roman Empire to the rise of the Renaissance. Prerequisite: 3125.
3803 Studies in Early Modern Political Thought (4) Focuses on the intellectual background of modern political thought, mainly in England, France, and the Netherlands. Prerequisite: 3125.
3804 Studies in 19th- and 20th-Century Political Thought (4) Examines the major intellectual and political developments of the modern age, focusing on the interplay between nationalism, socialism, and internationalism. Prerequisite: 3125.
3805 Studies in Political Thought of Contemporary Political Issues (4) Focuses on the political thought of modern political thinkers, including figures such as Karl Marx, Herbert Marcuse, and Hannah Arendt. Prerequisite: 3125.

Political Theory and Methodology
3090 Introduction to Political Analysis (4) Focuses on the methods and techniques of political analysis, including the use of quantitative and qualitative data in the study of political phenomena. Prerequisite: 3200.

Psychology (830)

College of Liberal Arts
4460 Organizational-Industrial Psychology (3) Cannot be taken for credit by students who have credit for Management 3460. (Same as Management 4460.)

4510 Personality Theories (4) Prereq: 3650.

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

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

4620 Seminar in Group Processes (3,3) Didactic and laboratory experience for those qualified for further training as group facilitators. 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 intelligence, personality, special abilities, and educational achievement. Prereq: 3150.

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

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

4670 Cognitive Development (4) Theory and research on development of language and thinking in children and adolescents. Prereq: 3210 or 3550.

4710 Physiological Psychology (4) Nervous system and psychopathology. Prereq: One year of biology or zoology and Psychology 2520.

4719 Physiological Psychology Laboratory (4) Laboratory studies of nervous system and physiological correlates of behavior. Coreq: 4710.

4720 Comparative Animal Behavior (4) Methods and principles. (Same as Zoology 4720.)

4729 Comparative Animal Behavior Laboratory (4) Laboratory and field studies. Coreq: 4720. (Same as Zoology 4729.)

4750 Evolution and Ontogeny of Social Behavior (4) Genetic, evolutionary, ecological, and developmental processes as they apply to social organization and dynamics of vertebrates. Prereq: Consent of instructor.

4770 Psychology and the Law (4) Psychological aspects of the legal system. Prereq: Junior Standing.

4780 Psychology and Current Issues (4) Research and development of contemporary issues. 4 credit hours per week. Prereq: Consent of instructor. May be repeated. Maximum credit 8 hours.

4830 History and Systems of Psychology (4) Prereq: 9 hours of upper-division psychology.

4850 Learning Theories (4) Historical and theoretical development of learning models. Prereq: 3210.

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

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

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

4910 Senior Seminar on Great Ideas in Psychology (3) Review of key ideas in psychology that have shaped our conceptions of humanity in basic ways. Contemporary definition of each idea will be explored against the background of the idea's historical development, with an attempt to understand the vicissitudes of each conception as a product of larger social and scientific pressures. Recommended for Seniors.

4978-88 89-90 Honors Thesis (4,4,4) Honors candidates only.

GRADUATE

General requirements for the master's degree and doctoral degree as well as course descriptions are given in the Graduate Catalog.

Religious Studies (863)


Assistant Professors: L. J. Fitzgibbon, Ph.D. Chicago; M. W. Harris, Ph.D. Harvard; M. L. Leveringer, Ph.D. Harvard; L. M. Tober, Ph.D. Vanderbitt, Adjunct, J. O. Hodges, Ph.D. Chicago; T. Paton, M.A. Yale.

UNDERGRADUATE

B.A. Major: Two options are available in religious studies. Designed to assure that students study at least two different religious traditions, and attain skills to analyze and interpret theoretical issues in the study of religion, the basic option consists of at least 36 hours of work at the 2000 level and above or courses at the 3000 level or above, including the following: (1) 3660; (2) one of the following, 3650, 3671, 3672, 3770; (3) 3370 and 3380; (4) two of the following, 3011, 3021, 3600, 3970, 3740, 3750; and (5) one 4000 level seminar selected in consultation with the student's advisor. The remaining eight hours which complete the major requirement shall not include courses from related language studies.

As an alternative to the basic option, a student-initiated option is recommended for students who plan to pursue graduate study in religion or related fields. An option which will fulfill the other special educational needs. A faculty member in religious studies will help a student formulate an individual program consisting of at least 36 hours of study at the 3000 level or above. Students whose educational goals would best be served by such a program are encouraged to discuss this option as early as possible with a faculty member in religious studies. Once the proposal is formulated, it will be submitted to the faculty in religious studies for review.

Further details on the major and on department courses are available in the department. Students minoring in religious studies will help a student formulate an individual program consisting of at least 36 hours of course work at the 3000 level and above. Students whose educational goals would best be served by such a program are encouraged to discuss this option as early as possible with a faculty member in religious studies.

Minor: Twenty-four hours of courses at the 3000 level and above. It is suggested that programs minoring in religious studies discuss their programs with a member of the department faculty.

1010 Living Religions of the World (4) Introduction to living religious traditions in a variety of cultural settings.

1020 Current Themes in Religious Studies (1) Introduction to the study of religion through consideration of selected contemporary themes, problems or controversies. Variable content. May be repeated for a maximum of 3 credit hours.

2110-20 Founders in Religion (4,4) Introduction to religion in culture and society; critical examination of selected figures dealing with great religious founders. 2110—Religious figures such as: Moses, Confucius, Socrates, Joseph Smith and Guru Gobind Singh. 2120—Religious figures such as: Muhammad, Lao Tze, Krishna, Jesus and Nichiren. Prereq. for 2120: 2110.

2310-20 Criticism of Religion (4,4) Classical and contemporary forms of criticism of Western religious thought. 2310—Forms of criticism in their classical presentations (as in Voltaire, Spinoza, Nietzsche; Marx, Durkheim, Freud, Sartre, Russell). 2320—Contemporary issues involving critical perspectives on religion such as feminist, environmental, ethnic (African-American, Americanian); liberation movements.

2610 Introduction to Religion (4) Introduction to the study of religion through selected historical traditions.

2611 Introduction to Ancient Near Eastern Religions (4) Introduction to study of religion through selected ancient Near Eastern and Mediterranean traditions.

2612 Issues in Religious Studies (4) Introduction to study of religion through selected religious problems and alternatives.

3011 Phenomenology of Religion (4) Examination of recurrent forms, themes, and patterns in history of religions, such as high gods, cultural heroes, initiations, and ascensions.

3021 Religious Myth, Symbol, and Ritual (4) Study of interrelation of myths, symbols, and rituals among prehistoric peoples through a specific motif, such as solar, lunar, and communal.

3060-70 History of Western Thought and Institutions (3,3) First century to 5th century 3070—5th century to 15th century 3080—16th century to 1900. (Same as History 3060-70.)

3110 Ancient Israel's Historical and Religious Traditions (4) Political, religious and cultural history and traditions of ancient Israel from earliest period to Exile.

3120 The Rise of Judaism (4) Political, religious, and cultural history and traditions of exilic and post-exilic Israel and early Judaism through 135 A.D. Later literature of Old Testament, Apocrypha, and Dead Sea Scrolls.

3121 Religious Traditions of Ancient Egypt (4) Religious and cultural traditions of ancient Egypt from Old Kingdom to Hellenistic period.

3131 Religious Traditions of Ancient Mesopotamia (4) Religious and cultural traditions of ancient Sumerians, Babylonians, and Assyrians.

3232-33 Religious Aspects of Literature (4,4) 3232—Religious Themes in Classic Works. Major themes of Western religion as reflected in classic literary works; authors such as Vergil, Dante, Shake-speare, Milton, Blake, Goethe, Tolstoy, 3233—Religion and Literature: 20th Century Religious themes in Western writing such as: Eliot, Mann, Kafka, Faulkner, Lawrence, Shaw, Camus, Sartre. Prereq. for 3233: 3232.

3311-12 Images of Jesus (4,4) Introduction to ancient and modern portrayals of Jesus, understood within their cultural milieu. Prereq. for 3312: 3311.


3340 Judaism in the Common Era. (3) Survey of literature and traditions of Judaism in the Common Era.

3370-80 The Christian Tradition (4,4) Introduction to the Christian religious tradition, its origins, development and formative impact on Western culture. 3370—Sacred writings of the tradition; basic forms of spirituality and polity. 3380—Unity and diversity of Christian theology in relation to such issues as human nature and society, nature of the cosmos, and relation of religion and culture. Prereq. for 3380: 3370.

3411-12 The Reformation (3,3) 3411—Reformation, Counter Reformation, and Wars of Religion, 1517-1618. (Same as History 3411-12.)

3440 Religion of Primitive Peoples (3) (Same as Anthropology 3440.)

3490 African Religions (4) Examination of religions of the indigenous peoples of Africa, including a study of functions of myths, rites, and symbols and an inquiry into how certain political movements in Africa have
been and are informed by religious sensibilities. (Same
social emphasis upon Zen theories of emptiness, no-
philosophical, and meditational materials of Zen. Spe-
tions to problems of literary criticism. Relation of
3750 Theology and Literature (3) Exploration of
themes, issues, and thinkers.

English 3710.)

3690 Philosophy and Religion in India (4) (Same as Philosophy 3650.)

3680 Buddhism Philosophy and Religion (4) (Same as Philosophy 3660.)

3671 Religion and Philosophy in China (4) (Same as Philosophy 3671.)

3672 Religion and Society in Japan (4) (Same as Sociology 3672.)

3680 Islam (4) Origin and early history, rapid spread as a
world faith, development of Muslim theology and
culture, interaction with modern cultures.

3690 Philosophy of Religion (4) (Same as Philosophy 3690.)

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

3711 Literature of the English Bible (3) (Same as English 3711.)

3715 Religious Thought in the Nineteenth Century (4) Major problems and themes in European and
American religious thought between 1800 and the
beginning of World War I.

3720 Contemporary Religious Thought (3) Major themes, issues, and thinkers.

3740 Issues in Science and Religion (3) Relation of
religion to history, methods, and theories of science.

3750 Theology and Literature (3) Exploration of
issues raised for religious inquiry by phenomenon of
literature. Relation of religious and moral considera-
tions to problems of literary criticism. Relation of
religious language to certain forms of human expres-
sion (symbol, metaphor, myth, image) identified
in study of literature.

3760 Eastern Religions and Western Thought (3) Critical consideration of influences of Hindu and
Buddhist philosophy on Western thinkers.

3770 Zen Buddhism (3) Examination of historical,
philosophical, and meditational materials of Zen. Spe-
cial emphasis upon Zen theories of emptiness, no-
mind, sudden enlightenment, and the Koan.

3780 The Literature of Dissent (3) Critique of religion in
Western thought. Aspects of atheism, rebellion, and
revolution in such thinkers as Lucretius, Spinoza, Vol-
tare, Feuerbach, Marx, Nietzsche, Russell, and
Camus.

4101 Foreign Study (1-16) See page 159.

4102 Off-Campus Study (1-16) See page 159.

4103 Independent Study (1-16) See page 159.

4111-21 Modern Religious Philosophies (4,4) Exam-
ination of the religious implications of major thinkers
and movements. 4111—Nicolás de Cusa to Humo.
4112—Kant and the 19th century. Prereq: 9 hours of
philosophy other than logic. (Same as Philosophy
4111-21.)

4200 Classical Indian Systems of Philosophy: The
Makarba Tradition (4) Basic writings and philosophic
problems of the traditions of Samkhya, Yoga, and
Vedanta. Prerequisite Religious Studies/Philosophy
3520 or 3690. (Same as Philosophy 4200.)

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

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

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

4410 American Religious Thought (4) Selected fig-
ures, movements, and problems in American religious
thought from colonial period to present.

4450 Topics in American Religion (4) Prereq: One of
the following: 3510, 3520, 4410, or consent of in-
tuctor. May be repeated once for credit.

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

4610 Topics in Western Religious Thought and
Institutions (4) Selected figures, issues, and institu-
tions. Seniors and graduate students only, except by
center of department. Prereq: 3060-70. May be re-
peated. Maximum credit 12 hours.

4640 Topics in Early Christianity and Hellenistic
Religions (4) Selected figures, issues, and institutions.
Seniors and graduate students only, except by con-
sent of department. Prereq: Consent of instructor.
May be repeated. Maximum credit 12 hours.

4670 Topics in Eastern Religions (4) Selected fig-
ures, issues, and institutions. Seniors and graduate
students only, except by consent of department.
Prereq: 3650-60-71. May be repeated. Maximum credit 12
hours.

4810-20-30 Readings and Research in Religious
Studies (3,4,3,4,3) May be repeated. Maximum credit 12
hours.

4850 Proseminar in Religious Studies (3) For ad-
tor. May be repeated once for credit.

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

GRADUATE
Consult the Graduate Catalog for listing of
graduate level courses.

RELATED LANGUAGE STUDIES

3140-50-60 Elementary Classical Hebrew (3,3,3)
3140—Basic elements of Hebrew, phonology, script,
morphology, and syntax. 3150—Continued grammar
study and selected reading and translation. 3160—
Biblical readings and translation, introduction to
basic elements of text, literary form, historical, and
traditional criticism.

3170-80-90 Intermediate Classical Hebrew (4,4,4)
3170—Torah and Former Prophets. 3180—Prophets.
3190—Writings and Mishnaic Hebrew. Prereq: 3151 or
consent of instructor.

4750-60-70 Elementary Sanskrit (4,4,4) Introduction
to grammar of classical Sanskrit and reading of ar-
notated selections from the classical Sanskrit.
(Same as Asian Studies 4750-60-70.)

4770-80-90 Intermediate Sanskrit (4,4,4) Advanced
grammatical constructions and reading of epic and
classical religious and narrative materials (e.g.,
Bhagavad Gita, Mahabharata, Ramayana,
Kathasaritsagara). Prereq: 4760 or consent of instruc-
tor. (Same as Asian Studies 4770-80-90.)
primary interest is literature must have the following courses (or their equivalent, with consent of the department): 3110-20-30 or 3810-20-30 (Aspects or Survey of Literature, 9 hours); 3410 or 3420 or 3430 or 3450 (Intermediate Composition and Conversation or Composition and Conversation for Careers in Business, 3 hours); 4210 (Phonetics, 3 hours); 4220 or 4230 (Advanced Grammar, 3 hours); 9 additional hours selected from courses in literature, language, or civilization. Students whose primary interest is language must have the following courses (or their equivalent, with consent of the department): 3110-20-30 or 3810-20-30 (Aspects or Survey of Literature, 9 hours); 3410 or 3420 or 3430 or 3450 (Intermediate Composition and Conversation or Composition and Conversation for Careers in Business, 3 hours); 4210 (Phonetics, 3 hours); 4220 or 4230 (Advanced Grammar, 3 hours); 6 hours selected from courses 3410-20-30 or 3450 (Intermediate Composition and Conversation or Composition and Conversation for Careers in Business, 3 hours); 4220-30 (Advanced Grammar), or 4250-60-70 (Linguistics); 5 hours of literature at the 4000 level, 15 hours selected from courses in literature, language, or civilization. With either of the above options, students may substitute Foreign Study (4101) for certain courses; students with special interests, such as comparative literature, may make certain substitutions with consent of department.

Minor: Consists of 24 hours in courses numbered 3110-20-30 or above, including the following: 3110-20-30 or 3810-20-30 (Aspects or Survey of Literature, 9 hours); 3410 (Intermediate Composition and Conversation, 3 hours); 4210 (Phonetics, 3 hours); 9 additional hours selected from courses in literature, language, or civilization. Students pursuing a minor are advised to consult with a departmental advisor.

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.

1110-20-30 Elementary French (3,3,3) This sequence is recommended for students intending to take upper-division courses in French. Must be taken in sequence. 3 hours and 2 labs.

1118-20-38 Honors: Elementary French (3,3,3) Honors course for students of superior ability, 1118 not for students who have taken high school French. Freshmen admitted to 1128 and 1138 on basis of diagnostic test or conference with instructor, high school average, and performance on ACT. Class held to maximum of 15 for individual attention. Class covers normal elementary French program for first year, but is enriched. Students expected to spend normal amount of preparation time. Students finding course too difficult may seek remedial instruction. Potential majors and minors in French are urged to take this course. Students passing 1110 with grade of B or higher are eligible for 1128 rather than 1110. Students passing 1120 with grade of B or higher are eligible for 1138 rather than 1130.

1510-20 Elementary French (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
Grammar, Composition, and Conversation, 9 hours; 3110-20-30 or 3510-20 (Aspects of Italian Literature, at least 8 hours); 9 hours of literature at the 4000 level; 10 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); 3110-20-30 or 3510-20 (Aspects of Italian Literature, at least 8 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.

1110-20-30 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.

2110-20-30 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.

2610-20 Panorama of Italian Culture (4,4) 2610—Survey of Italian culture from Roman era through the 19th century; 2620—Survey of Italian culture in the 18th, 19th, 20th centuries.

3110-20-30 Aspects of Italian Literature (3,3,3) Prereq: 2130, 2520, or equivalent. Recommended for literature majors.

3310 Italian Literature in English Translation (3-4) Sicilian School, the Florentine School, Dante, Petrarch, Boccaccio, Machiavelli, Ariosto, Tasso. No change in credit hours after deadline. Option of 4 hours credit must present appropriate amount of extra work above that required for 3 hours.

3410-30-30 Advanced Grammar, Composition, and Conversation (3,3,3) Laboratory work, drills, and tapes. Prereq: 2130, 2520, or equivalent.

3510-20 Aspects of Italian Literature (4,4) Prereq: 2130, 2520, or equivalent. Recommended for literature majors.

4020 Italian Drama in English Translation (3-4) 20th-century theatre; operatic drama, the commedia, Pirandello, De Filippo, Fraili. No change in credit hours after add deadline. Option of 4 hours credit must present appropriate amount of extra work above that required for 3 hours.

4050-60-70 Dante and Medieval Culture (3,3,3) Readings and lectures in English for students majoring or minoring in other departments. Readings, reports, and term papers in Italian for students majoring or minoring in Italian. (Same as Comparative Literature 4050-60-70.)

4101 Foreign Study (1-16) See page 159.

4220 Petrarch (3) Prereq: 3130, 3520, or equivalent.

4230 Boccaccio (3) Prereq: 3130, 3520, or equivalent.

4410-20 Literature of the Rinascimento (3,3) From Pulci to Tasso, the Quattrocento and the Cinquecento. Prereq: 3130, 3520, or equivalent.

4530 The Modern Novel (3) Prereq: 2130, 2520, or equivalent.

4620 Contemporary Poetry (3) Prereq: 2130, 2520, or equivalent.

4630 Contemporary Prose (3) Prereq: 2130, 2520, or equivalent.

4760 Italian Folklore (3) Folk arts, music, traditions, rituals, and life of Italy from Middle Ages to present. (Same as Anthropology 4760.)

GRADUATE

See Graduate Catalog for requirements and course descriptions.

Portuguese (811)

UNDERGRADUATE

Minor: A minor only is offered in Portuguese, consisting of 8 hours in the 3510-20 sequence (aspects of Portuguese literature) and 18 hours in the 4310-20 sequence (directed readings in Brazilian and Portuguese literature, a course of variable content which may be repeated for credit). Students may substitute Foreign Study (4101) for any of the above courses.

1510-20 Elementary Portuguese (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2510-20 Intermediate Portuguese (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

3000-61 Advanced Portuguese (3,3) An accelerated class for beginning students of Portuguese who already have a strong background in Spanish, French, or Italian. Conversation and reading with a quick survey of grammar. Introduction to the culture and literature of Portugal and Brazil. Prereq: Permission of instructor.

3510-20 Aspects of Portuguese Literature (4,4) Prereq: 2520 or equivalent. Recommended for literature majors. (Same as Latin American Studies 3510-20.)

4101 Foreign Study (1-16) See page 159.

4310-20-30 Directed Readings in Brazilian and Portuguese Literature (3,3,3) May be repeated with consent of instructor. (Same as Latin American Studies 4310-20-30.)

GRADUATE

Consult the Graduate Catalog for listing of graduate level courses.

Spanish (924)

UNDERGRADUATE

B.A. Major: Consists of 36 hours in courses numbered 3110 or above. Students whose primary interest is literature must have a minimum of 9 hours chosen from the following sequences: 3110-20-30, 3310-20-30 (Aspects of Spanish literature or Aspects of Spanish American literature); 3410 plus 3420 or 3430 (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 9 hours chosen from the following: 3110-20-30, 3310-20-30 (Aspects of Spanish literature, or Aspects of Spanish American literature, 9 hours); 3410 plus 3420 or 3430 (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. With either of the above options, 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, including a minimum of 8 hours in the following sequences: 3110-20-30, 3310-20-30 (Aspects of Spanish literature or Aspects of Spanish American literature, 9 hours); 3410 (Composition and Conversation, 3 hours); 4210 (Phonetics, 3 hours); sufficient additional hours selected from courses in literature, language, or civilization to fulfill the minor requirements. Students pursuing a minor are strongly advised to consult with a departmental 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 either a major or a minor.

1110-20-30 Elementary Spanish (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hours and 2 labs.

1510-20 Elementary Spanish (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2110-20-30 Intermediate Spanish (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hours and 2 labs.

2510-20 Intermediate Spanish (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2518-20 Honors: Intermediate Spanish (4,4) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. Class held to a maximum of 15 so that each student may receive more attention. Students follow enriched program with continuing emphasis upon speaking ability and with special emphasis on reading, including literary selections. Must be taken in sequence. Students who earn an A or B in 2528 automatically receive credit for Spanish 3000. Prereq: Spanish 1110-20-30, 1510-20, 1518-28, or equivalent.

2910-20 Spanish and Spanish American Literature in English Translation (3,4,3,4,3-4) 2910—Masterpieces of classical Spanish literature: Cervantes, realism and the picarons novel, religious mystics, Golden Age Theatre. 2920—Masterpieces of 20th century Spanish literature: Unamuno, Lorca, Garcia Lorca, Ortega, Garcia, Ortega, Contemporary Spanish American fiction: Marquez, Borges, Fuentes, Asturias. No change in credit hours after add deadline. Option of 4 hours credit must present an appropriate amount of extra work above that required for 3 hours. (Same as Latin American Studies 3010-20-30.)

3000 Spanish Transition (3) Development of linguistic skills necessary for satisfactory work in Spanish above 3000. Recommended for students who feel they would benefit from additional training beyond 2130 or 2520 in basic skills of reading, speaking, and writing Spanish.

3110-20-30 Aspects of Spanish Literature (3,3,3) 3110—Introduction to Spanish literature, using selections from prose, drama, and poetry of the modern period; 3120—Aspects of Golden Age literature, including the mystics, Cervantes, and Lope De Vega; 3130—Aspects of modern Spanish literature; Unamuno, Ortega y Gasset, and Garcia Lorca. Prereq: 2130, 2520 or equivalent. Recommended for literature majors. Not offered for graduate credit.

3310-20 Aspects of Spanish American Literature (3,3,3) Study (not usually chronological) of various periods of the literature; emphasis upon the genres (prose, poetry, drama) varies. May be taken in place of 3110-20-30. Prereq: 2130, 2520 or equivalent. (Same as Latin American Studies 3310-20-30.)

4310-20 Intermediate Composition and Conversation (3,3,3) Not offered for graduate credit.

4500-60-70 Hispano-Arabic Literature and Culture (3,3,3)
Assistant Professors: F. J. Spickard, Ph.D., Tennessee; V. G. Williams, M.S.W., A.C.S.W., Howard.

B. S. Major: Consists of 50 hours in professional foundation courses: Social Work 2000 (4), 3400-10 (4,4), 4103 (3,3), 3110-4120-30 (4,4), 4200 (4), 3500-10 (4,4), 4520-30 (3,3) which must be taken in sequence; 19 hours in the corequisite courses Human Services 3200 (4), Sociology 3910-20 (4,4), Child and Family Studies 3515 (3), and an Economic elective (4), and 27 hours in the required courses, Zoology 2510-20-30 (12), Anthropology 2530 (4), Political Science 2520 (4), Psychology 2540 (3), and Women’s Studies (4). Students who graduate from this program are prepared for beginning professional practice as a social worker. The program follows Council on Social Work Education Accreditation Standards. For a complete description of the professional program see page 156.

2000 Introduction to Social Work and Social Welfare (4) Introduction to the profession of social work and the institution of social welfare. Designed to assist students to develop the values, knowledge, skills, and values of the social work profession, and to consider their ability for a career in social work.

3110 Social Work Practice I (4) Examines the knowledge, values, and skills required for entry level practice in a variety of human service settings. Particular attention will be on the contract stage of the social work problem solving cycle and diverse client systems, ethnic—sensitive assumptions, and the workers regard for the person—environment configuration will be considered. Prereq: Preliminary association with major.

3400 Human Behavior and the Social Environment I (4) Examines the impact of such conditions as ethnicity, racism, sexism, and socio-economic status on individual growth and behavior. Specific focus is on the application of this knowledge to social work practice. To be taken in sequence. Prerequisite: Preliminary association with major.

3410 Human Behavior and the Social Environment II (4) This course continues to develop the frameworks presented in Social Work 3400 and examines how the biological, psychological, social—structural, and cultural determinants of human behavior contribute to the development of one’s human diversity as individuals move through the life cycle. Differences in the abilities and characteristics of members of diverse groups will be viewed as equally valid attempts to perform life tasks and meet community human needs. Prerequisite: Social Work 2000 and 3400.

3500-10 Field Practice in Social Work II, I (4,4) An eight-hour-per-week, supervised field experience in which students can apply classroom material to practice situations in order to develop professional skills, values, and attitudes. Each week a faculty led seminar focuses on the integration of knowledge with practice experiences. Prereq: Preliminary association with major.

4101 Foreign Study (1-16) See page 159.

4102 Off—Campus Study (1-16) See page 159.

4103 Independent Study in Social Work (3) Provides the opportunity to develop a research proposal and follow through with an investigation of an area in social work in which the student has an interest. Ongoing faculty guidance, supervision, and evaluation is required. Prereq: Full association with the major.

4120 Social Work Practice II (4) This course is the second offering in a sequence of three courses which examine the kinds of skills and values required by entry level professional social workers who work with multiple size and humanly diverse client systems. Special attention is focused on the contract stage of the social work problem solving process. Prereq: Full association with major.

4130 Social Work Practice III (4) Essential theory, values, and skills of professional social work interven-

Sociology (915)

Professors: J. A. Black, Ph.D., Iowa; D. J. Champion, Ph.D., Purdue; L. Ebersole (Vice Chancellor for Administration), Ph.D., Pennsylvania; D. W. Hastings, Ph.D., Massachusetts; N. C. Hudson, Ph.D., Carolina; N. E. Shoever, Ph.D., Illinois (Urbana); S. E. Wallace, Ph.D., Minnesota.

Associate Professors: S. C. Fisher, Ph.D., California (San Diego); S. Kurth, Ph.D., Philadelphia; M. Phillips, Ph.D., Michigan; V. K. Ritter, Ph.D., Washington, K. D. Van Liere, Ph.D., Washington State.

Assistant Professors: T. C. Hood (Acting Head), Ph.D., Duke; D. M. Betz, Ph.D., Michigan State; D. Cioccia, Ph.D., Michigan State; R. G. Perini, Ph.D., British Columbia.

Graduate Assistants: D. Harris, M.A., Tennessee.

UNDERGRADUATE

B.A. Major: Consists of 36 upper-division hours in sociology. Eight lower-division hours in sociology are prerequisite to a major. Students will select 20 hours within one of the following six programs of study:


2. The Social Service program provides a broad background for students interested in the helping professions. Courses include: Social Psychology 3130, Deviance 3140, Sociology of Medicine 3160, The Family 3220, Poverty and Inequality 3340, Urban Problems 3420, Juvenile Delinquency 3600, Juvenile Delinquency 3610, Socialization Across the Adult Life Cycle 4160, and Sociology of Aging 4730.

The Research Analyst program is preparation for data analysis in public and private research organizations and in business and industry. Courses include: Stratification 3350, Social Research 3910, Elementary Social Statistics 3920, Population Problems 4110, Theory of Attitudes and Values 4160, and selected courses outside of the department. Students should consult with the Undergraduate Coordinator.

The Human Management program is preparation for those who manage people as part of their work. Courses include: Social Psychology 3150, Gender in Society 3150, Communicative Processes 3320, Prejudice and Racism 3330, Occupations 3610, Occupations 3620, Social Research 3910, and Formal Organizations 4560.

The Criminal Justice program is preparation for careers in corrections, law enforcement, parole and probation, and criminology. Courses include: Collective Behavior 3010, Deviance 3140, Prejudice and Racism 3330, Juvenile Delinquency 3510, Social Research 3910, Sociology of Law 4030, Punishment and Corrections 4130, and Criminality 4310.

1510 General Sociology (4) Social origins, structures, forces, processes, and products.

1518 Honors: General Sociology (4) Enriched introduction to sociological principles and research. Permission of department required. B average or better. Selected freshman.

1520 Sociology of Social Problems (4)

1528 Honors: Social Problems (4) Permission of department required. B average or better. Selected freshman.

1530 Contemporary Social Change (4) Introduction to basic concepts and principles used in analyzing social change. Emphasis on contemporary society.

3010 Collective Behavior (4) Analysis of collective phenomena emphasizing crowd behavior, responses to disasters, urban sprawl, mass movements, and social protests.

3015 Resource Scarcity and Social Change (4) The relationship between scarcity of natural resources and changes in social welfare and social structure. Topics include social and physical limits to growth and collective action problems.

3030 Political Sociology (3) Sociological analysis of American political system. Attention given to consideration of concept of power, elitist-pluralist controversy, end-of-ideology debate, and related topics.

3120 Social Psychology (4) Social psychological analysis of social behavior emphasizing its acquisition, its enactment and its dynamic nature.

3140 Deviance and the Social Order (4) Examination of relations between deviance and social order. Various types of social deviance considered, with focus on their structure, social factors related to process of becoming deviant, and consequences of deviant conduct.

3150 Gender in Society (4) Exploration of gender in society utilizing various sociological perspectives with special focus on the relationships between social structures, social roles and gender identities. (Same as Women's Studies 3150.)

3160 Sociology of Medicine (4) Introduction to sociological approach to study of health and medicine. Emphasis on relationship of demographic characteristics to the prevalence of disease, organization of health care facilities, and staff-patient relationships.

3220 The Family (4) Examines theoretical frameworks and methodological approaches and their application in the sociological study of past and present family forms.

3320 Sociology of Communicative Processes (4) Sociological dimensions of communication and of communication processes at the organizational and interactional levels.

3320 Prejudice and Racism in the United States (4) (Same as Afro-American Studies 3330.)

3340 Comparative Poverty and Inequality (4) Comparative description and sociological analysis of poverty and inequality in the modern world. (Same as Afro-American Studies 3340.)

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

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

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

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

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

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

3672 Religion and Society in Japan (4) (Same as Religious Studies 3672.)

3780 American Society (4) An analysis of the institutional organization of contemporary American society, with attention to institutional interrelations (e.g., between the economy and the polity), characteristics of important social groups (e.g., educators, political parties, and workers), and major forces of change.

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

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

3920 Elementary Statistical Methods (4) Statistics used in social research; elementary descriptive techniques; measures of central tendency, dispersion, elementary statistical inference; tests of significance for parametric and non-parametric data.

4000 Special Topics (4) Student-generated course offered at convenience of department upon student initiative. Scope of subject matter determined by student and instructor with consent of department. Elective credit only. Prereq: Determined by department.

4030 Society and Law (4) General treatment of social organs and consequences of law and legal process. Particular emphasis on problems of law and social change, and on structure and functioning of legal sanctions. Law and law-like phenomena in formal organizations and primitive societies.

4050 Sociology of Sport (4) Social organization and meaning of sport. The difference between sport and play and between participation and spectator relationship, sport as an occupation, place of sport in mass culture, sport subcultures, and reciprocal influences of sport and cultural milieu.

4102 Off-Campus Study (1-16) See page 159.

4103 Independent Study (1-16) See page 159.

4110 Population Problems (4) Demographic factors and social structure; trends in fertility, mortality, population growth, migration, distribution, and composition; population policy.

4120 Topics in Social Psychology (4) (Same as Psychology 4120.)

4130 Sociology of Punishment and Corrections (4) Traces development of correctional movement, develops a critical sociological perspective on contemporary correctional programs, and provides overview of evaluative research in corrections.

4150 Theory of Attitudes and Values (4) Study of orientation, function, and measurement of attitudes and values; approaches to attitude change; and relationship to attitudes, values and behavior.

4190 Socialization Across the Adult Life Cycle (4) The social process through which people acquire skills and abilities and undergo identity transformations and types of adult socialization (e.g., occupational, institutional) are emphasized.

4310 Criminology (4)

4330 Urban Ecology (4) Examination of public, private, collective, and individual space. Classical school ecology, its neo-critical reviewers, social area analysis, and cognitive symbolic ecology emphasized. (Same as Urban Studies 4330.)

4410 Educational Sociology (3) (Same as Educ. C & L. 14410.)

4530 Community Organization (4) Structural function; linkages. Changes and development of important community studies. Emphasis on sociological analysis, not on implementation of change.

4540 Development and Underdevelopment (4) Critical examination of theories which attempt to explain differential development in the modern world. In-depth examination of development issues in selected regions of the world. (Same as Religious Studies 4540.)

4560 Formal Organization (4) Analysis of bureaucratization process, division of labor, delegation of authority, channelled communication under system of rationality.

4730 Sociology of Aging (4) Emphasizes how roles and statuses change with age in relation to the major social institutions and explores the impact that the rapidly increasing number of older people have on society, as well as the effect of society on older people.

4820 American Minority Groups (4) Minority groups and social structure in American society; analysis of intergroup relations with attention given to both past and present relationships of selected groups to broad society.

4930 Social Movements (4) Development, organization, and function of social movements; attention is given to ideology, leadership, and organization of political, religious, and other types of social movements.

4940 Sociology of Religion (4) Interrelationship of society, culture, and religion. (Same as Religious Studies 4940.)

4988 Honors: Sociology (4) Intensive study and research under faculty direction, including writing of senior thesis. Course credit may be split into two quarters. Candidacy is open only to majors who have shown a marked capability for independent study and have grade averages of at least 3.0 in the College of Liberal Arts and 3.2 in the department. Prereq: Senior standing.

GRADUATE

The General requirements for the master's and doctoral degrees as well as course descriptions are in the Graduate Catalog.

Spanish

See Romance Languages.

Speech and Theatre

Professors:

P. Garvie (Head) M.A. Cambridge; R. G. Allen, D.F.R. Yale; T. P. Cooke, Ph.D. Florida State; R. M.

College of Liberal Arts

203
2021 Voice and Diction (4) Voice production; attention to individual speech problems.
2311 Public Speaking (4) Basic principles of speech preparation and delivery.
2321 Argumentation and Debate (4) Recommended: 2311.
2351 Interpersonal Communication (4) Communication theory in its application to small groups, casual communication, structured communication, and intimate communication.
2361 Business and Professional Speaking (4) Basic principles of oral communication within organizations. Listening skills, including techniques for formal presentation (including technical papers and reports), conference planning, selecting and employing visual aids, informal communication systems, communicating corporate image, and other aspects of business and professional communicating.
2410-20-30 Intercollegiate Forensics (1, 1, 1) Supervised work in tournament debate and individual events. Prereq: Consent of instructor.
3011 Persuasion (4) Persuasive theory: psychological, sociological, and cultural dimensions.
3021 Group Communication (4) Communication theory in its application to small groups, especially discussion groups. Emphasis is upon non-verbal communication, business communication, and group decision making.
3031 Non-Verbal Communication (4) Exploration of non-verbal communication from human communication perspective; origins, usage, and coding of non-verbal behavior, research strategies and theoretical approaches.
3041 Communication Projects (1-4) Intensive application of communication theory covered in other Speech Communication courses. Includes the areas of persuasion and interpersonal communication. May be repeated. Maximum 4 credit hours.
3301 Fundamentals of Organizational Communication (4) A study of communication behavior, theory and skills in organizational settings; upward, downward and lateral communications in dyads and groups.
3410-20-30 Intercollegiate Forensics (1, 1, 1) Continuation of 2410-20-30. Prereq: Consent of instructor.
3651 Persuasive Speaking (4) Speech forms; principles and practice of speech composition.
4222 Advanced Argumentation and Debate (4) Prereq: 2331 or consent of instructor.
4461 Quantitative Research Methods in Speech Communication (4) Designing experiments; planning field studies; using statistical analysis.
4541 Rhetorical Theory and Criticism (4) Survey of Western rhetorical theory; contemporary approaches to criticism of public address.
4560 Rhetoric of the Women's Movement (4) Historical and critical study of public address in women's rights from the 1830s to present. (Same as Women's Studies 4560.)
4571 British Oratory (4) Historical and critical study of British public address.
4591 Persuasive Uses of Imaginative Literature (4) Topics in social and political uses of novels, plays and poems.
4811 Advanced Phonetics (4) Phonetic aspects of contemporary dialectics of the English language. Prereq: Consent of instructor.
4930 Studies in American Public Address (4) May be repeated. Maximum credit 12 hours.
4999 Colloquium in Speech Communication (1) May be repeated for credit.

GRADUATE
Consult the Graduate Catalog for listing of graduate level courses.

Theatre (976)
1310 Introduction to Theatre (4) Theatre as experience; materials and techniques.
mer company by consent of instructor. May be repeated. Maximum 4 credit hours.

4214-15 Advanced Technical Theatre (4,4) Advanced technical theatre management; advanced scenery 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 graphic standards and preparation of design drawings; construction of spatial illusion through color with reference to rendering, scene painting, and preparation of painter's elevations. Must be taken in sequence. Prerequisite: 2211-21, 3211-22, and consent of instructor.

4341-42 Advanced Lighting Design (4,4) Relationship of light to setting in creating stage environment. Must be taken in sequence. Prerequisite: 3321-22 or consent of instructor.

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

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

4751-52 Dramatic Theory and Criticism (3,3)
4951-52 Playwriting (4,4) Prerequisite: Consent of instructor.

GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Speech and Theatre (945)
1441 Introduction to Cinema (4) Development of motion pictures as a medium; film aesthetics; analysis and criticism of selected films.
2031 Introduction to Oral Interpretation (3) Art of reading aloud; development of interpretive techniques and their application to selected passages of prose, poetry, and drama.
3651 Oral Interpretation of Prose Literature (4) Prerequisite: 2031 or consent of instructor.
3661 Oral Interpretation of Poetry (4) Prerequisite: 2031 or consent of instructor.
3671 Oral Interpretation of Drama (4) Prerequisite: 2031 or consent of instructor.
4101 Foreign Study (1-16) See page 159.
4102 Off-Campus Study (1-16) May be repeated for major credit to maximum of 12 hours. See page 159.
4103 Independent Study (1-16) May be repeated for major credit to maximum of 8 hours. See page 159.
4660 Group Performance of Literature (4) Oral interpretive techniques of choral reading, readers theatre, and chamber theatre.

GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Statistics
See faculty list page 86.

Library 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 3450-60; Computer Science 4310; Statistics 3550 or Mathematics 4650 or 4750.
(b) Statistics electives: 15 hours from upper-division statistics courses not listed in (part a) above.
(c) Electives: 12 hours to be selected from no more than two of the following groups: Computer Science 3150, 3520, 4610; Industrial Organization 3430, 3510, 3520, 3530, 4590; Industrial Management 4610, 4620; Mathematics 3780-90, 4600-70, 4510-20-30 (or 4518-29-30), 4680-70.

Minor
Required courses: 21 hours to consist of Mathematics 2840-50-60; Statistics 3450-60; Computer Science 4310.

(b) Statistics electives: 9 hours from upper-division statistics courses not in part (a) of the minor.

University Studies (984) (Non-Departmental)

University Studies deal with important contemporary topics which are sufficiently comprehensive to require study and attention of students and faculty from more than one college. They are open to all qualified members of the UTK community.

The University Learning Community is a program designed to offer a group of sophomores an integrated pattern of courses built around a broad theme. For each of three quarters the group will take four courses, two drawn from offerings by UTK programs that contribute to the theme and the appropriate courses from the 2001-02-03 and 2110-20-30 sequences. The Community will be led by a Master Learner, a member of the faculty who will participate in all courses taken by the group. Further information is available at the Learning Research Center, 1819 Andy Holt Avenue.

1000 The First Course (3) An introduction to university education as an adventure in personal growth and professional development. S/NC.
2001-02-03 University Learning Seminar (1,1,1) Laboratory course for facilitating integrative thinking and learning. Only for students enrolled in a University Learning Community.
2110-20-30 Topics in University Studies (3,3,3) Variable content course using case studies and problem-solving approaches to explore interdisciplinary issues. Only for students enrolled in a University Learning Community.
3110-20-30 Technology, Society and the Common Good (3,3,3) Introduction to the interlocking relationships between population, food production and distribution, environmental pollution, depletion of nonrenewable natural resources, global arms race, etc. Two-quarter sequence designed for students of all colleges; first quarter-global perspectives; second quarter-decisions for the future. Extensive use of films, field trips, student discussion.

Women's Studies
See Cultural Studies.

Zoology (995)

Professors: J. H. Abbott (Head), Ph.D. Brown; R. M. Bagby, Ph.D. Illinois; L. D. Bunting, Ph.D. Oklahoma State; J. G. Carlson (Emeritus), Ph.D. Pennsylvania; A. C. Cole (Emeritus), Ph.D. Ohio State; J. C. Daniel, Jr., Ph.D. Colorado; D. A. Etter, Ph.D. Minnesota; R. C. Fraser (Emeritus), Ph.D. Minnesota; B. Hochman, Ph.D. California (Berkeley); J. Howell (Emeritus), Ph.D. Cornell; E. T. Howley, Ph.D. Wisconsin; K. W. Jeon, Ph.D. London (England); A. W. Jones (Emeritus), Ph.D. Virginia; J. R. Kennedy, Ph.D. Iowa; U. Liles, Ph.D. Ohio State; S. E. Riechert, Ph.D. Wisconsin; L. E. Roth (Vice Chancellor for Graduate Studies), Ph.D. Chicago; C. A. Shivers, Ph.D. Michigan State; J. T. Tanner (Emeritus), Ph.D. Cornell; H. G. Welch, Ph.D. Florida; M. C. Whiteside, Ph.D. Indiana; G. L. Whitson, Ph.D. Iowa.

Associate Professors: K. D. Burnham, Ph.D. Iowa; A. C. Eichhorn, Ph.D. Kansas; D. J. Fox, Ph.D. Johns Hopkins; M. A. Handel, Ph.D. Kansas State; J. A. MacCabe, Ph.D. California (Davis); M. L. Pan, Ph.D. Pennsylvania; S. L. Pimm, Ph.D. New Mexico State; G. L. Vaughn, Ph.D. Duke.

Assistant Professors: T. T. Chen, Ph.D. Florida; L. D. Etkin, Ph.D. Indiana; G. F. McCracken, Ph.D. Cornell; N. B. Greenberg, Ph.D. Rutgers.

UNDERGRADUATE
Prerequisites to upper-division courses:
Biology 1210-20-30 or Zoology 1118-28 are prerequisites for all upper-division courses, with the exception of 3090 and 4940. Additional prerequisites are included with course descriptions. Courses numbered in the 4000s are no more advanced than those in the 3000s except as may be indicated by prerequisites.

B.A. Major: Consists of Biology 3110, 3120, 3130; 18 hours of upper-division zoology courses and 3 quarters of chemistry or biochemistry at the 2000 level or above. Of the 18 hours of upper-division zoology courses, a minimum of 6 hours must be at the 4000 level, and must include at least one laboratory or field course. 1 to 3 hours of Zoology 3950 and hours of Zoology 4990 Perspectives in Zoology must also be included. Prerequisites to this major are: Biology 1210-20-30 or Zoology 1118-28 (Zoology 2920-30 may be substituted for Zoology 1118 or Biology 1220) and Chemistry 1110-20-30. Corequisites are: (1) a Mathematics and Statistics/Computer Science package consisting of Mathematics 1550-60, 1840-50 or 1841-51 (Mathematics 1841-51 is the recommended choice) plus one of the following: Mathematics 1860, 3050, 3060, 3860, Psychology 4150. Computer Science 1510, 1610, Plant and Soil Science 3610 (2) a year sequence in Physics (except 1410-20).

Note: Students majoring in zoology are advised to exercise care in fulfilling Science and Mathematics requirements. Mathematics 1840-50 or 1841-51 or 1540-50-60 and Chemistry 1110-20-30 or equivalent (20 or 21 hours altogether) must be completed by all zoology majors.

Minor: Consists of 24 hours of zoology, or zoology and biology courses. (Zoology courses must be at the upper-division level; but 3000-level biology courses may be used, e.g. Biology 3110, 3120, 3130.) Prerequisites to this minor are Biology 1210-20-30 or Zoology 1118-20-30 and Chemistry 1110-20-30.

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

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

1118-28-38 Honors: Fundamentals of Zoology (4,4,4) Course designed for superior students in any field who are interested in obtaining a solid foundation in zoology. On completing this sequence students may register for core Biology 3110-20-30. Honors zoology is open to all students with a minimum ACT composite score of 27 or with a minimum GPA of 3.2 in college. Students must achieve at least a B in any quarter to be eligible for the next quarter. Students who do not satisfy this requirement must complete the sequence with appropriate quarters of Biology 1210-20-30. Must be taken in sequence. 1118 (Fall)-Processes; Structure and development. 1128 (Winter)-Genetics and phylogeny. 1138 (Spring)-Ecology, independent projects. Each quarter consists of six hours of combined lecture and lab. Students who receive credit for this sequence may not receive additional credit for Biology 1210-20-30 or Botany 1110-20 or 1118-28.

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

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

2510-20-30 Human Biology (4,4,4) For non-majors. Not available for major credit in zoology and biology. 2510—What we are: diversity of life forms, uniqueness of man, cell biology, reproduction, development, principles of genetics. 2520—How we live: physiology of movements, utilization of food, respiration, circulation, excretion. 2530—Survival, infection and immunity, aging, vascular disorders, genetic disorders, cancer, nutritional inadequacies, human ecology, genetic engineering. May be taken in any sequence. 3 hrs. and 1 lab.

2920-30 Human Biology (4,4,4) Fundamentals of biology; principles of human physiology. Must be taken in sequence. Prereq: One year of college chemistry. 3 hrs. and 1 lab.

2980 Human Anatomy (4) Gross and Microanatomy of the Human. Prereq: 1 year of an introductory Biology course or Zoology 2960-30 or equivalent. 2 hrs. and 2 labs. (Does not carry credit for Biology or Zoology Majors).

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

3060 Comparative Vertebrate Anatomy (5) Phyllotaxis and anatomy of organ systems. Dogfish and cat primarily used in laboratory. Three hrs. and 2 labs.

3080 Principles of Animal Physiology (5) Physiology of organ systems of animals including man. Prereq: Biology 2130 or Math 2210-20 recommended. 3 hrs. and 1 lab.

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

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

3150 Invertebrate Zoology (5) Biology of invertebrates (except insects) with emphasis on ecology and behavior. Prereq: Biology 3130. 3 hrs. and 2 labs.

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

3220 Physiology of Reproduction (3) Study of animal tissues. Prereq: Biology 3120. 2 hrs. and 2 labs.

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

3720 Ethology and Sociobiology (3) Basic concepts of the evolutionary approach to behavior with special reference to controversial issues in applications to psychology, the social sciences, and the arts. (Same as Psychology 3720.)

3920 Human Endocrinology (4) Basic course in human endocrinology with emphasis on the practical diagnosis of hormone levels for analysis of glandular function and treatment of endocrine abnormalities. Three lectures and 1 discussion. Prereq: a course in physiology. (Does not carry credit in the Zoology major or minor.)

3990 Zoology Colloquium (1) Weekly discussions of contemporary interest. Open to sophomores, juniors, and seniors. Each Zoology major is required to take a minimum of one hour. Grading: S/NC. May be repeated. Maximum 3 hours.

4007-8-9-10-11-12-13-14-15-16-17 Minicourse in Zoology (2,2,2,2,2,2,2,2,2,2,2,2) Selected, advanced topics in zoology, concentrated in time and subject matter. Consult departmental listing for actual topics offered. Prereq: As posted. May be repeated for credit. Maximum 12 hours.

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

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

4140 Practicum in Zoology (1-3) Participation in practical application of zoology in community institutions, government organizations, and industry. Approximately 5 hours of involvement per week. Prereq: Biology 3110, 3120, 3130, and senior standing.

4190 Mammalogy (4) Classification, evolution, distribution, reproduction, populations, and behavior. 2 hours and 2 lab or field periods.

4200 Ichthyology (5) Classification, collection and identification, distribution, life histories, and economic importance of fishes. Prereq: Biology 2130, or consent of instructor. 2 hours and 2 lab or field periods.

4210 Cell Physiology (5) Development of modern concepts in cell physiology from point of view of integration and control which examines kinetics and integration of cellular activities. Prereq: Cell biology or any physiology, and organic chemistry. Biochemistry recommended. 3 lectures and 1 lab.

4240 Animal Ecology (4) Environmental factors and their influence on the behavior of animals. Prereq: 3110 or 3150. 2 hrs. and 2 labs.

4250 Environmental Physiology (4) Survey of physiological mechanisms in the animal kingdom and their relationships to animal ecology and to survival of animals in diverse environments. Prereq: Biology 3120-30, 2 years of chemistry.

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


4280 Comparative Animal Physiology Laboratory II (1) Prereq: 3080 and consent of instructor; Coreq: 4260.
Sylvia E. Hart, Dean
Barbara M. Reid, Associate Dean
Dorothy B. Stephens, Assistant Dean

The College of Nursing at The University of Tennessee, Knoxville, was established in July 1971 in response to a long-recognized and well-established need for nurses prepared at the collegiate level and as part of a statewide comprehensive plan approved for the University of Tennessee system by its Board of Trustees and for the state by the Tennessee Higher Education Commission.

The undergraduate program offered by the college is fully accredited by the National League for Nursing. It combines the unique resources of the University with those of several cooperating health agencies in a manner which enables both faculty and students to become aware of and responsive to an evolving dynamic culture, rapid scientific and technological advances, and changing concepts of health, of human beings, and of society.

The baccalaureate nursing program has as its central focus and frame of reference human beings, society, and health. It is based on the belief that nursing has equal concern for the prevention of illness, the promotion of health, and the care of the sick.

General education courses, nursing courses, and electives are organized in a manner designed to promote creative thinking and innovative approaches at both the theoretical and practical levels. General education courses are incorporated into the nursing curriculum at both lower- and upper-division levels. Certain aspects of general education, primarily in the natural and behavioral sciences, are prerequisite to any courses in the nursing major. Other supporting courses are taken concurrently with nursing courses.

Since nursing is a humanistic science and an art, nursing courses provide theoretical content which draws heavily from the theories and principles of related sciences and disciplines. This content is organized, integrated, and synthesized in a manner which promotes a comprehensive understanding of the life process from conception through senescence. In nursing practice, this knowledge and understanding is combined with intellectual judgments, practical skills, and human compassion. Opportunities to develop this kind of expertise in a variety of settings and situations are integral components of all nursing courses.

A broad base of general education, a thorough study of human behavior, emphasis on health maintenance and promotion, and a strong family and community orientation are essential components of baccalaureate education in nursing. It is these characteristics which differentiate it from other types of basic nursing education.

Because of the expanding role of the professional nurse, the increasing complexity of health care delivery, and the ever-changing health needs of society, the goals of the program are to prepare graduates who are able to:

1. Assume beginning leadership positions in nursing in a variety of settings.
2. Work collaboratively with other health professionals.
3. Function as socially conscious and contributing citizens.
4. Pursue advanced education on either a formal or an informal basis.

GENERAL REQUIREMENTS

In order to obtain a Bachelor of Science in Nursing Degree, 12 quarters of full-time study or their equivalent are required. Students may enroll in nursing courses following successful completion of clearly specified lower-division courses. These courses may be taken at The University of Tennessee or at any accredited junior or senior college or community college. One hundred eighty-nine quarter hour credits must be successfully completed in order to be awarded the Bachelor of Science in Nursing Degree.

NOTE: Students are advised to consult the University's degree requirements as stated in the front of this catalog as well as the requirements for the College of Nursing. All degree seeking students in the College of Nursing should also consult College Association requirements on p. 28 of this catalog.

GRADING POLICY

The satisfactory-no credit option is not permitted for any nursing course except 3900.

The minimum acceptable grade for all courses in the nursing curriculum, other than electives, is a C; a course in which a grade of D or F is achieved may be repeated once. If a grade of D or F is achieved on the second attempt, the student will be required to withdraw from the program.

Any student who achieves a grade of D or F for more than two clinical nursing courses will be required to withdraw from the program even if previous courses in which the grades of D or F were achieved have been repeated and a grade of C or better has been removed from the program. Clinical courses are: 2800, 3010, 3210-20, 3410, 4110, 4230, 4510-20, 4760.

If a student receives an Incomplete (I) in a required nursing course, the Incomplete must be removed before the student may enroll in any other required nursing courses.

If a student's clinical laboratory performance for any nursing course is deemed unsatisfactory, the grade for that course will be an F regardless of any grades related to the theoretical component of the course. If the unsatisfactory clinical performance is characterized by dangerous, inappropriate, or irresponsible behavior, which actually or potentially places the patient's or family's welfare in jeopardy, the student will be required to withdraw from the program.

ASSOCIATION AND PROGRESSION PROCEDURES

1. Nursing students must achieve a course grade of C or better in all required lower-division courses, exclusive of electives.

2. During the academic year in which students are expected to complete all lower-division requirements, a petition for progression to upper-division nursing courses must be submitted. Petition forms are available in the college's Student Affairs Office, and must be submitted to this office no later than the fifth day after the first day of classes. Students selected for progression are notified no later than one day prior to the preregistration period for the spring quarter.

Students selected for progression must successfully complete Nursing 2800 prior to

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enrollment in upper-division nursing courses. This course is offered in the spring and summer quarters. Only students selected for progression may enroll in Nursing 2800.

(3) Students who expect to enroll in The University of Tennessee, Knoxville, College of Nursing, once they have completed lower-division requirements elsewhere, should contact the Associate Dean for Student Affairs at the UTK College of Nursing as soon as they begin their lower-division courses. Transfer students who believe they have met lower-division requirements should submit a petition to begin upper-division nursing courses as soon as they are admitted to the University. If the number of students qualified to begin upper-division nursing courses exceeds the number that can be accommodated during the following fall quarter, the cumulative grade point average will be utilized to select those students who may enroll in upper-division nursing courses. Qualified students not selected are eligible to reapply for progression during the next review period.

(4) Transfer students who have been accepted by the University must complete all course requirements identified in the curriculum. Transcripts will be evaluated on an individual basis. Students are free to take proficiency or challenge examinations in order to determine whether it is necessary for them to enroll in a course or whether they have met those course requirements in another way.

Registered nurses seeking a baccalaureate degree in nursing must also apply for admission to the University and must be accepted on the same basis as others. They must complete all prerequisites and all required courses identified in the nursing curriculum. They may also take challenge or proficiency examinations in required courses, whenever these are appropriate and available. Registered nurses who have completed Chemistry 1141-20 with a grade of C or better, within two years prior to admission to the College of Nursing, have satisfied the chemistry requirement. For registered nurses the following courses may be substituted for those required in the baccalaureate program. Transcripts will be evaluated on an individual basis. Students are free to take proficiency or challenge examinations in order to determine whether it is necessary for them to enroll in a course or whether they have met those course requirements in another way.

Registered nurses seeking a baccalaureate degree in nursing must also apply for admission to the University and must be accepted on the same basis as others. They must complete all prerequisites and all required courses identified in the nursing curriculum. They may also take challenge or proficiency examinations in required courses, whenever these are appropriate and available. Registered nurses who have completed Chemistry 1141-20 with a grade of C or better, within two years prior to admission to the College of Nursing, have satisfied the chemistry requirement. For registered nurses the following courses may be substituted for those required in the baccalaureate program. Transcripts will be evaluated on an individual basis. Students are free to take proficiency or challenge examinations in order to determine whether it is necessary for them to enroll in a course or whether they have met those course requirements in another way.

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child bearing, and child rearing and their application to principles from behavioral, physical, social, and nursing practice in hospital and community settings. 3 credits. For MSN candidates without a BSN degree.

4280 Community Mental Health Nursing (6) Theories and principles of mental health and illness, chronicity, aging, and rehabilitation and their application to nursing practice in a variety of settings. Prereq: All required 3000-level nursing courses. For MSN candidates without a BSN degree.

4290 Nursing the Child Bearing Family (3) Theories and principles of family development, family dynamics, child bearing, and child rearing and their application to nursing practice in hospital and community settings. 3 hrs., 3 lab. Prereq: All required 3000-level nursing courses. For MSN candidates without a BSN degree.

4300 Nursing in the Specialties (2-4) Application of principles from behavioral, physical, social, and nursing sciences to solution of nursing problems. Includes exploration of nursing intervention needed to maintain or restore homeostasis in clients experiencing selected physiological and/or behavioral deviations. Specific topics to be determined by faculty and students. May be repeated with consent of instructor. Maximum credit 12 hours. Prereq: Consent of instructor.

4350 Oncology Nursing (3) In-depth exploration of the cancer problem; medical and nursing intervention. Relates cellular kinetics to theories of carcinogenesis and metastasis, and examines treatment modalities and nursing intervention employed in all phases of the disease. Interdisciplinary approach analyzed. Prereq: Nursing 4230, RN status or consent of instructor.

4440 Scientific Inquiry in Nursing (3) Introduction to language of research, types of research design, methodological approaches, sampling, data analysis, and significance of findings. Evaluation of existing and ongoing nursing research studies. Prereq: Senior standing or MSN candidate. F, W.

4450 Nursing and Chronic Illness (4) Theories and principles of gerontology, chronicity and rehabilitation, nursing management of selected short and long-term health problems in a variety of clinical and community settings. 2 lectures, 2 labs. Prereq: All required 3000-level nursing courses. For MSN candidates without a BSN degree. F.

4510 Community Health Nursing: Family (3) Application of the nursing process to care of clients and their families in the home setting; utilization of community health services in planning comprehensive goal directed care; principles related to prevention and control of common communicable diseases are presented. 1.5 hrs. and 1.5 lab. Prereq: All 3000-level nursing courses. Prereq or coreq: 4110 or 4280. For nursing majors only. F, W.

4520 Community Health Nursing: Aggregates (3) Community studies utilizing the epidemiological approach for comprehensive assessment of and intervention for aggregates at high risk for maturational or situational health and nursing problems; political and legislative community health issues are explored. 1.5 hrs. and 1.5 lab. Prereq: All 3000-level nursing courses. Prereq or coreq: 4230 or 4260. For nursing majors only. F, W.

4650 Professional Nursing Seminar (3) Critical examination of legislative, legal, ethical, social, and educational issues and trends which have immediate or long-range implications for professional nursing practice. Prereq: 10 hours of 4000-level nursing courses. For nursing majors only. S.

4760 Nursing Management (6) Theory and practice of management principles with application to nursing care of groups of patients/clients; organization, planning, decision making and leadership are emphasized; nursing staff qualifications, staff utilization and nursing service delivery patterns are analyzed and evaluated; entry-level nursing management roles are practiced clinically: 3 hrs., and 3 lab. Prereq: 10 hours of 4000-level nursing courses. For nursing majors only. S.

4770 Comprehensive Health Assessment (4) Principles and theories underlying health screening of children and adults, including health history, interviewing, and physical examination. Practicum included, 3 hours and 1 lab. (4 hours each). Prereq: All 3000-level nursing courses or their equivalent or consent of instructor. E.

4790 Health Assessment Practicum (1-3) Selected clinical experiences in health assessment based on individual student needs and interests. Prereq: 4770 or equivalent and permission of instructor. E.

4860 Independent Study in Nursing (3) In-depth study of some aspect of nursing in which student has developed special interest. Study is pursued independently utilizing guidelines developed by the student with appropriate faculty guidance, supervision, and evaluation. May be repeated with consent of instructor. Maximum credit 9 hours. Prereq: 10 hours of 4000-level nursing courses. For nursing majors only. S.

GRADUATE Consult the Graduate Catalog for listing of graduate level courses.
Independent Departments

Department of Air Force Aerospace Studies

Air Force ROTC Program
Professor of Air Force Aerospace Studies: Colonel R. E. Culnon (Head), M.A. Arizona, M.S. Troy State.

Assistant Professors:
Major T. M. Bante, M.A. Webster College; Captain R. A. Hooper, M.S.A. George Washington University; Captain C. L. Little, M.A. Northern Colorado.

PurposE:
The Air Force Reserve Officers Training Corps (AFROT C) is an educational program designed to provide the college student an opportunity to earn an Air Force commission as a second lieutenant while completing the University requirements for a bachelor’s degree. The program provides education that will develop the skills and attitudes vital to the professional Air Force officer. Upon successful completion of the program and graduation from the University, students are commissioned as second lieutenants and they enter active duty.

The Programs:
The Four-Year Program: Students entering the Four-Year Program may register for the program at the same time and in the same manner as they enroll in their other college courses and there is NO MILITARY OBLIGATION. During their freshman and sophomore years, students enroll in the General Military Course (GMC). They then may compete for entry into the Professional Officer Course (POC) which is normally taken during the last two years of college. Selection into the POC is highly competitive and is based on qualification on an Air Force medical examination, scores achieved on the Scholastic Aptitude Test (SAT) or American College Test (ACT), scores achieved on the Air Force Officer Qualifying Test (AFOQT), successful completion of a four-week field training course at an Air Force base, and the recommendation of the Professor of Aerospace Studies.

The Two-Year Program: The Two-Year Program consists of the Professional Officer Course (POC), the last two years of the Four-Year Program. It is designed to provide greater flexibility to meet the needs of students desiring Air Force opportunities. The basic requirement is that applicants have two academic years remaining at either the undergraduate or graduate levels, or a combination of both. After being nominated by a Professor of Aerospace Studies, applicants seeking enrollment in the Two-Year Program are evaluated on scores achieved on the AFOQT, the Air Force medical exam, and a personal interview by a board of Air Force officers. Additionally, every POC applicant must agree to take and successfully complete a course in mathematical reasoning or its equivalent before graduation and commissioning.

Since the processing procedure must be completed approximately six months in advance of intended enrollment, interested students must apply early in the academic year preceding the fall term in which they intend to enter the program. Application should be made in writing or by a personal visit to the Professor of Aerospace Studies.

Women in AFROTC:
AFROTC at The University of Tennessee has been coeducational since 1970. Women complete the same courses as men and have the same opportunities. Upon successful completion of the AFROTC program and degree requirements, women are commissioned in the Air Force as second lieutenants. Pay and job opportunities are equal for women and men. Virtually all career fields in the Air Force are open to women, to include flying positions (pilot and navigator).

The Courses:
The General Military Course (GMC): This is a two-year course taken during the freshman and sophomore years with one hour of academic instruction and one hour of Leadership Laboratory a week. The curriculum covers two main themes—the mission and organization of the Air Force, and the history of the development of air power. These courses are open to any student enrolled in the University, and there is no military obligation associated with taking them.

The Professional Officer Course (POC): This is a two-year course of instruction normally taken during the junior and senior years with three hours of academic instruction and one hour of Leadership Laboratory a week. The curriculum covers Air Force management and leadership and American defense policy. Admission is not automatic but is limited to fully qualified students selected by the Air Force ROTC staff.

Leadership Lab: Leadership Lab involves cadet participation in, and cadet direction of, corps leadership activities. It is largely cadet planned and organized in line with the premise that leadership training experiences will improve a cadet’s ability to perform as an Air Force Officer. The freshman and sophomore Leadership Lab program involves initial Leadership Lab experiences such as: preparing the cadet for individual, squadron, and flight movements in drill and ceremonies; customs and courtesies to include wearing of the uniform and saluting the flag; career opportunities; educational benefits and training problems; environment of the Air Force officer to include the military community, organizations, and functions; and preparation for field training. The junior and senior Leadership Lab program involves the cadets in advanced leadership experiences. The cadets will be responsible to a large degree for planning, organizing, directing, coordinating, and controlling the activities of the cadet corps; for preparing briefings and written communication; and to provide interviews, guidance, information, and other services which will increase the performance and motivation of other cadets.

Field Training: Every AFROTC cadet or applicant is required to attend a summer camp, called field training, normally between the sophomore and junior years. Cadets in the Four-Year Program attend for four weeks, while Two-Year Program applicants attend for six weeks. The curriculum consists of aircraft, aircrew, career and survival orientation, physical training, small arms training, a social action program, and supplemental training. Field training is conducted at a number of Air Force bases throughout the United States. In addition to receiving travel pay to and from the Air Force base, each cadet or applicant is paid for attending field training.
Flight Training: Flight training is offered free of charge to qualified pilot candidates who are AFROTC cadets. The cadet receives 13 hours of flight instruction. University credit is granted for the Ground School portion of the Flight Instruction Program.

UNIVERSITY CREDITS
The following credits are granted for Air Force Aerospace Studies work and are creditable toward a degree in some colleges. Aerospace Studies 2200 series (Freshman)—6 quarter hours per year Aerospace Studies 2220 series (Sophomore)—6 quarter hours per year Field Training Academics (Sophomore)—6 quarter hours Aerospace Studies 3200 series (Junior)—9 quarter hours per year Flight Instruction Ground School—3 quarter hours Aerospace Studies 4200 Series (Senior)—9 quarter hours per year.

SCHOLARSHIP PROGRAM
Air Force ROTC Scholarships are available to qualified applicants in both the Four- and Two-Year Programs. The scholarship provides full tuition, laboratory and incidental fees, and full reimbursement for curriculum-required textbooks. In addition, scholarship cadets receive a non-taxable $100 each month during the school year while on scholarship status.

High School Students: Competitive four-year scholarships are available to high school male and female students who enroll in certain scientific and engineering career fields. Some scholarships are also available to male and female students who enroll in certain non-technical majors. Four-year scholarship applications are in the “Air Force ROTC Four-year College Scholarship Program Application Booklet.” Booklets may be obtained directly from Air Force ROTC Public Affairs, Maxwell, AL 36112.

College Students: Other scholarship opportunities exist for students already in college. Four-, three-, and two-year scholarships are available on a competitive basis and the student must have at least four, three, or two undergraduate or graduate years of study remaining in order to compete. Applications for these scholarships should be made directly to the Professor of Military Science.

In order to retain an AFROTC scholarship, students must maintain the minimum grade point average prescribed by the university and they must take and complete an English composition course or its equivalent before completing the GMC.

PAY AND ENTITLEMENTS
All cadets enrolled in AFROTC are furnished texts and uniforms. Enrollees are required to deposit $75 as security to the student. A deposit, minus a nominal fee to cover cost of shoes, is returned to the student upon successful completion of AFROTC or upon early withdrawal. Professional Officer Course cadets receive a subsistence allowance of $100 per month during the academic year. In addition they are paid mileage to and from field training, plus pay commensurate with active duty rates while at field training.

ACTIVE DUTY COMMITMENTS
Commissioned graduates going into non-flying duties will be required to serve four years on active duty. Those graduates going into pilot assignments will be required to serve six years active duty after completion of pilot training. Those graduates going into navigator assignments will be required to serve five years active duty after completion of navigator training.

Curriculum
Air Force Aerospace Studies (094)
1210-20-30 Air Force Aerospace Studies (2,2,2) Surveys the missions, functions, and organization of the Air Force. Provides an over-all view of the Air Force Command in the environment in which it operates, and how the Air Force works with the Army and Navy, providing foundation upon which study of the Armed Forces and the Air Force can build. 1 hour and 1 hour lab (Leadership Laboratory).
2210-20-30 Air Force Aerospace Studies (2,2,2) Introduction to study of air power. Course is developed from a historical perspective starting with the Wright Brothers and continuing into the 1980s. 1 hrs. and 1 lab. (Leadership Laboratory).
2240 Field Training (Academic Program) (1-4) Role of United States military forces in contemporary world, with particular attention to United States Air Forces, its organization and mission, various component forces of U.S. military policies, role of America's defense structure, policies of major powers, and elements and processes in making of defense policy. Conducted at Field Training bases in the country. Approximately 60 class hours.
3210-20-30 Air Force Aerospace Studies (3,3,3) Air Force leadership at junior officer level, including theoretical, professional, and legal aspects, with attention to communicative skills. Military management functions, principles, and techniques are covered. 3 hours and 1 lab (Leadership Laboratory).
3240 Flight Instruction Ground School (Private Pilot) (3) Part of the Air Force ROTC Flight Instruction Program designed to prepare student to operate safely as a pilot. A secondary objective is to enable a student to pass FAA private pilot's written examination. Thirty quarter hours of classroom instruction. Subject areas covered are: Pre-flight Facts-acquaints students with factors affecting flight, Meteorology-involves student in learning weather phenomena affecting flight, weather information, and services available to pilots; Flight Computer, Navigation, and Radio Navigation—covers the requirements to plan a cross-country, use of appropriate maps, charts, logs, and regulations that must be known to operate safely. This course is open only to pilot candidates enrolled in the Air Force ROTC Professional Officer Course.
3250 Flight Instruction Ground School (Instrument) (3) Part of Air Force ROTC Flight Instruction Program. Covers instrument flight, Instrument Flight Rules, Exam-O-Grams, Advanced Meteorology, planning and use of instrument charts for flight, and general instruction of instrument flying techniques and applications. Emphasizes safety in operation of small aircraft and provides necessary instruction for the FAA written examination for the instrument pilot's license. Prereq: 3240 or an FAA private license. This course is open only to pilot candidates enrolled in the Air Force ROTC Professional Officer Course.
3255 Commercial Pilot (3) Part of Air Force ROTC Flight Instruction Program. Covers Advanced Flight Computer, Navigation, Instrument, advanced VFR Navigation and Radio; Commercial Pilot Federal Aviation Regulations and Exams; Alcohol, Drugs, and Flight Efficiency; Advanced Weather, and the Body Weight and Balance; and Oxygen Systems. Course provides necessary instruction to take Federal Aviation Agency (FAA) written examination for Commercial Pilot's License. This course is open only to pilot candidates enrolled in the Air Force ROTC Professional Officer Course.
4210-20-30 Air Force Aerospace Studies (3,3,3) Role and function of professional office in a democratic society; socialization process, public attitudes, and value orientations associated with professional military service, requisites for maintaining national security forces; decision-making processes of Depart-
Substitution
All substitutions must receive the prior approval of the Student Academic Advisor and the Department Head. Substitution approval of the Student Academic Advisor

b. Be physically qualified.

a. Be a citizen of the United States.

b. History

(1) Basic Military Studies

b. History

1. Basic Military Studies

b. History

2. Advanced Military Studies Cadets

a. Be a citizen of the United States.

b. Be physically qualified.

a. Be a citizen of the United States.

b. Physical qualifications.

(2) Early Commissioning Program

By utilization of placement credit for the Basic Military Studies, many cadets enter Advanced Military Studies in either their freshman or sophomore year. The "ECP" enables cadets who complete the ROTC program to be commissioned in a reserve component prior to awarding of a baccalaureate degree. These newly commissioned officers begin their military services in the Army Reserve or Army National Guard while still enrolled in college pursuing a four year degree.

(3) Simultaneous Membership Program

The "SMP" option combines the Army ROTC living allowance ($1000/mo.) with membership in the Army Reserve or Army National Guard and allows the student to receive pay from both programs. ROTC cadets serve as "officer-trainees" in direct leadership/management positions. SMP cadets participate with the reserve forces is one weekend per month and two weeks each summer.

PAY AND ENTITLEMENTS

All students enrolled in the Army ROTC program are furnished texts by the Army through the Military Property Officer. Students enrolled in the ROTC Advanced Course receive uniforms and equipment plus an allowance or $100 per month during the academic year. While attending the ROTC summer studies each cadet receives approximately $850 for Advanced Summer Studies, $490 for Basic Summer Studies, plus meals and subsistence allowance of $100 per month for the period that the scholarship is in effect. Scholarships may be awarded for either two, three or four years. High school seniors should contact their guidance counselors early in August or September of their senior year to apply for the four-year scholarship. Two- and three-year scholarship applicants should contact the Professor of Military Science for further information. Certain other privately financed scholarships and grants are available to ROTC cadets.

Opportunity to acquire military skills. Additionally, each term, a number of Field Training Exercises are conducted allowing such military skills as Small Unit Tactics.

Criscurriculum

Military Science Studies (688)

1110 Fundamentals of Military Organization (3) The formation and functioning of the American Defense Establishment, customs and traditions of the Army, introduction to the principles of war and current military threats faced by the United States. Practical exercises in military skills of marksmanship and mountaineering.

1120 Historical Evolution of the U.S. Army, 1775-1865 (3) Historical survey of the organization and accomplishments of the U.S. Army. Presents the history of the Army with attention to both peace time and war time achievements as well as discussion of applicability of the principles of war. Prereq: 1010, 1100, F, W, S.

1130 Historical Evolution of the U.S. Army, 1865- Present (1) Historical survey of the organization and accomplishments of the U.S. Army. Presents the history of the Army with attention to both peace time and war time achievements as well as discussion of applicability of the principles of war.

2000 Army ROTC Basic Summer Studies (6) Role of the United States Army as a component of our National Defense system with particular attention on mission, organization, functions of the various branches of the Army, and our national resources. Concentrated study of the techniques of military planning, elements of success, leadership, the development of personal and interpersonal skills, the management of organizations and factors affecting human behavior. (44 hours of instruction are presented each week). Conducted at Fort Knox, Kentucky by faculty from colleges and universities participating in the Army ROTC Program. The course is taken in lieu of or part of the Army ROTC Basic Program (MS 1110, MS 2110, MS 2120). Successful completion of MS 2000 satisfies an individual for admission to the Advanced Military Science Program.

2110 Leadership and Development Techniques (3) A survey of leadership theories and principles with particular attention on communications skills and factors affecting human behavior. Development of leader qualities through practical exercises requiring both individual and group participation. Prereq: 1100, E.

2120 Basic Officer Skills (3) Emphasis on small unit operating techniques to include familiarization with military equipment, land navigation and first aid. Prereq: 1100, E.

2130 The Art of War (4) A survey of military strategy and principles of war based upon the works of Clausewitz, Sun Tzu, Hart, and Summers. Prereq: 1100, F, W, S.

3110-20-30 Advanced Leadership and Management (4,4,4) Applied leadership to include organization and operation of military units, electronic communications systems and radio/telephone procedures, land navigation, small unit leadership, and tactical concepts of offensive and defensive operations. A quarterly field trip reinforces classroom instruction through practical applications. Leadership and administrative roles in the military unit, physical readiness training, and drill and ceremony. Prereq: 3110, F, W, S. 3120; 3130. S.

4600 Army ROTC Advanced Summer Studies (6) A summer field study conducted at the main installation in the continental United States. 44 hours of instruction are scheduled each week. A prerequisite to the summer field study is successful completion of 3130. Instruction presented by ROTC faculty from colleges and universities. The summer field study is an extension of leadership and management curricula, with emphasis on practical applications. Prereq: 3130. SU.
4110 Military Professional Ethics and Leadership (4) Analysis of the military professions characteristics, roles, responsibilities, and ethics; staff operations; military briefings, logistics; personnel evaluation and senior/subordinate relationships are also addressed through practical application. Prereq: 4000 or consent of instructor. F.

4120 Introduction to Military Justice (4) Basic tenets of military law and justice to include the Manual for Courts-Martial, the Uniformed Code of Military Justice, disciplinary measure, search and seizure, investigations, administrative proceedings, the Law of Land Warfare, interviews and interrogations, and legal assistance. Leadership Lab: Planning, execution and supervision are stressed through practical application. Prereq: 4110 or consent of instructor. W.

4130 Officership (4) Drafting and reviewing military correspondence, training management, post and installation support, and world power balance are addressed. Leadership Lab: Personnel evaluation, supervision and staff operations are stressed through practical application. Prereq: 4120 or consent of instructor. S.
Public Service and Continuing Education

R. S. Hutchison, Vice President for Public Service and Continuing Education
Charles W. Hartsef, Assistant Vice President for Continuing Education, Administration
Raymond A. Shirley, Assistant Vice President for Continuing Education, Media

Institute for Public Service

Executive Director:
T. B. Ballard, B.S. Tennessee.

Business Manager:
G. W. Baskette.

Business Assistants:
C. E. Shoopman, Jr., B.A. Vanderbilt; M. M. Hoes.

Computer Programmer Analyst:
L. D. Brothers, B.S. Tennessee

Computer Programmer Analyst:
C. G. Burrett

The Institute for Public Service was established in 1971 within the Office of the Vice President for Public Service. The purpose of the institute is to coordinate and promote public service activities throughout the University system, excluding services provided through the Institute of Agriculture.

The basic goal of the University public service effort is to bring to the citizens of Tennessee—their business, their industry, and their governments—the problem-solving capabilities uniquely embodied within their statewide University system.

Public service at The University of Tennessee includes all services offered to those outside the University, including teaching in certain non-degree situations, technical assistance, and applied research which is conducted specifically at the request and for the benefit of non-University organizations in Tennessee.

The Institute provides: (1) a system-wide focal point for public services; (2) a means to coordinate the various system-level public service activities; and (3) an organizational base for communication and program development that relates to both outside service clientele and the University system.

The Institute is headquartered in Knoxville and maintains regional offices in Cookeville, Jackson, Johnson City, Martin and Nashville.

The Institute comprises the system-level public service operations listed below.

County Technical Assistance Service

Executive Director:
J. H. Westbrook, Jr., B.S. Tennessee.

Associate Director:
R. M. Wormley, B.S. Peavy State.

Assistant Director for Administration:
D. O. McAnulty, M.A. Austin Peavy State.

Legal Specialists:
P. C. Davis, J.D. YMCA Law School; R. E. Fults, J.D. Tennessee.

Financial Specialist:
R. L. Adams, B.S. Bethel.

Intergovernmental Consultant:
W. B. Fletcher, B.S. East Tennessee State

Senior Field Advisors:

County Field Advisors:
J. E. Headrick, B.S. Tennessee; F. D. McKee, M.S. Tennessee; S. L. Yarbrough, M.S. Tennessee.

Special Projects Coordinator:
M. J. Frank, B.A. Tennessee

The County Technical Assistance Service was established by the Board of Trustees at the 1973 mid-year meeting and began operation September 1, 1973. Establishment of the Service was authorized by the 86th General Assembly for the purpose of providing "studies and research in county government, publications, educational conferences and attendance thereat, and to furnish technical, consultative, and field services to counties of the state in problems relating to fiscal administration, accounting, tax assessment and collection, law enforcement, improvements, and public works, and in any and all matters relating to county government. This program shall be carried on in cooperation with and with the advice of counties in the state acting through the Tennessee County Services Association and its Board of Directors, which is recognized as their official agency or instrumentality."
The Center for Industrial Services has the primary role of assisting Tennessee’s manufacturing firms by providing technical and managerial assistance to the industries seeking assistance. By the Tennessee Public Acts of 1963, the assigned objectives for the Center are “to render service to the industries in this state by providing information, data, and materials relating to the needs and problems of industry which might be supplied and solved through research; by providing information about available research facilities and research personnel in Tennessee colleges and universities, and in governmental and private research laboratories; by keeping Tennessee’s industries informed about the services of the University from all campuses to the citizens of the state; Courses may be started at any time.”

The Critical Care Education Center, created in 1971 by the Middle Tennessee Hospital Council, became a part of the former UT Nashville campus in 1973. Following the merger of UTN and Tennessee State University in 1978, the Center was moved to the Institute.

The Critical Care Education Center offers: (1) a monthly series of one-hour videotape courses used to keep hospital personnel updated on the latest developments in critical care; and (2) a four-week, 140-hour critical care course that provides certification required by the Joint Commission on Accreditation of Hospitals for registered nurses to staff and intensive care units.

Division of Continuing Education

Charles W. Hartsell, Assistant Vice President for Continuing Education, Administration
Raymond A. Shirley, Assistant Vice President for Continuing Education, Media

The Division of Continuing Education is responsible for the development and coordination of all statewide continuing education programs. The Division is concerned with developing (establishing) policy that will extend educational opportunities, including attainment of college degrees, to qualified students of all ages and walks of life who pursue knowledge outside the traditional campus setting. All statewide continuing education programs of the University should be coordinated through the Division.

Information concerning continuing education programs of the various campuses is set forth in the respective catalogs. Information on continuing education programs of The University of Tennessee, Knoxville, is given on page 93 of this catalog.

Center for Extended Learning


Association of Directors:
D. F. Hoiden, Ph.D. Kansas;
B. W. Wallace, M.S. Tennessee; R. H. Considine, Ph.D. Tennessee.

CEU Programs: Continuing Education Units are available for approved non-credit professional programs.

CLEP Open Center: Administers College Level Examination Program tests each month.

College Credit for High School Seniors: Coordinated in cooperation with the State Board of Education.

College Entrance Courses: To remove entrance deficiencies or to complete high school requirements.

Conferences: For specific clientele.

Independent Reading: The student should contact the academic department for the desired reading course and then register for the course.

Independent Study: Extends instructional services of the University from all campuses to the citizens of the state.

Non-Credit Courses and Certificate Programs: In areas of general interest and in technical, business, and professional fields.

Video-tape Programs: Special educational programs on video-tape, both credit and non-credit. Tapes can be purchased or rented.

For information on enrollment, costs, books, and credit, write: Center for Extended Learning, 420 Communications and University Extension Bldg., The University of Tennessee, Knoxville, Tennessee 37996-0300. Telephone: (615) 974-5135.

Radio Services

Director: R. A. Shirley, M.A. Tennessee.

Associate Directors: J. A. Chasteen; S. D. Williamson, Jr., M.S. Tennessee; N. L. Dryer, B.M. Indiana.

Assistant Director: J. C. Adkins, M.S. Tennessee.

Staff: D. Bursil; P. Doyie, M.S. Tennessee; R. J. England; W. G. Hauser, B.A. New Mexico; M. Kierer, B.S. Tennessee; D. T Berry, M.M. Michigan.

Radio Services provides local and statewide services in radio broadcasting and audio production. It directs the operation of WUOT, the University’s 100,000-watt stereo FM station in Knoxville, and WUTC, the University’s 50,000-watt FM station in Chattanooga. These stations operate 24 hours a day with varied programs of music, news, public affairs, discussion, drama and documentaries from local, state, national and international sources. The stations are members of the National Public Radio Network.

The department produces, duplicates and distributes informational and educational radio programs for broadcast on an audio tape network of 168 Tennessee radio stations. Program content and participants represent a wide range of subject matter of public interest. The programs fall into three categories: agricultural and home-making information; current affairs, and cultural enrichment. The stations donate over 22,000 quarter-hours of broadcast time to the University each year. Its close contact with all types of broadcasting and its staff and facilities equip the department ideally for work with UT campuses in the production, duplication, and distribution of audio materials for educational use. It will upon request assist all UT campuses in communications development.

The department has a technical service which includes high-speed duplication of reel-
to reel or cassette audio tapes for University departments, recording conferences and workshops, audio production, and consulting work in audio or public radio technology.

**Television Services**

Director: R. A. Shirley

Assistant Directors:
D. L. Bower; W. R. Terry, B.A. Tennessee.

Chief Engineer:
T. M. Cupp

Assistant Chief Broadcasting Engineer:
M. L. Battershell

Senior Broadcasting Engineer:
D. J. Hamilton, B.S. Tennessee (Martin)

Media Production Assistant:
S. C. Moore

Producers:
S. H. Gordon, B.S. Tennessee; W. P. Wilson, B.S. Tennessee.

Artist:
Marshall Thurman.

Camera Operator:
F. E. Gilbert

Television services has responsibility for the administration, scheduling, production and distribution of credit courses and instructional materials over the campus closed-circuit system. The department helps all interested academic departments utilize the television closed-circuit system for instructional purposes. Some 8000 students are taught one or more resident classes each year by television.

The department also serves as a central television production facility for meeting other University needs. Television programs are produced, edited, and duplicated for open circuit broadcast, cable distribution, and videotape distribution. Production efforts include UT sports events, University news and information, continuing education materials, and graduate and undergraduate credit courses for off-campus students.
The University Library

Donald R. Hunt, Director
Betty G. Bengtson, Assistant Director/Technical Services
Kenneth E. Marks, Associate Director/Public Service
Marcia J. Myers, Associate Director/Administrative Services
Aubrey H. Mitchell, Associate Director for Collection Development

Professors:

Associate Professors:

Assistant Professors:

Instructors:

The UTK Library, as the premier library of the state, seeks to acquire and service all necessary recorded information, both print and non-print, that meets the needs of the University's teaching, research, and service programs.

The books, periodicals, non-print and any other materials contained in the four UTK library units are available to all students, faculty and staff of The University of Tennessee, Knoxville. Included among the holdings are 1,448,738 books, 1,465,853 microforms, 6,194 audio tapes, 130,015 slides, 1,578 video tapes, more than 2 million manuscripts, and various historical ephemera, maps, and oral history tapes. More than 21,000 periodical and serial titles are received annually.

The library in its four locations is open to all students and faculty, regardless of their fields of study. The James D. Hoskins Library at 1401 West Cumberland is the main library where administrative and technical services offices are located. The dictionary catalog, listing the library holdings for the entire campus, is in Main, as are the general and research collections, comprehensive reference, interlibrary services, documents, 4000/5000-level reserves, newspapers, non-print materials, and Special Collections, the last a repository of local and regional source materials.

The John C. Hodges Undergraduate Library, on Volunteer Boulevard at Andy Holt Ave., has a limited collection of 175,000 volumes selected to meet the needs of students in undergraduate courses. Reserve materials for 1000-3000 level courses are available in this library as is a large collection of audio tapes, slides, and videocassettes.

Other libraries serving specialized areas are Agriculture-Veterinary Medicine in the Veterinary Medicine building and Music in the Music Building.

The libraries are administered by a director, associate directors (for collection development and public, technical, and administrative services) and a number of department heads. Questions and comments are invited in person or through the suggestion boxes located in each library. Continuing evaluation and building of the collections is the responsibility of the collection development librarian. While most materials are selected by faculty, recommendations for purchase are invited from all students and staff.

"Library Guides" are available in all library units, describing library services and facilities.
Computing Center

Gordon R. Sherman, Director
Asa O. Bishop, Jr., Associate Director
Dan R. Wilson, Associate Director
Michael L. Newman, Associate Director
Timothy P. MacKenzie, Assistant Director

Faculty Associates
Professors: G. R. Sherman (Director), Ph.D. Purdue; A. O. Bishop, Jr., Ph.D. Clemson; R. E. Cline, Ph.D. Purdue.
Assistant Professor: D. W. Straight, Ph.D. Texas.

The University of Tennessee Computing Center (UTCC) provides computing facilities and services for the University's teaching, research, public service, and administrative activities.

UTCC offices and principal computing facilities are located on the first two floors of the Stokely Management Center (SMC) and on the P2 level and first floor of Andy Holt Tower. The computers at SMC include two IBM 370/3031's, an IBM 4341/2, a DECsystem-10 with dual KL10 processors in a symmetrical multi-processor (SMP) configuration, and a DEC PDP 11/55. Installation of an IBM 3081 D is scheduled for December 1983. An IBM 360/40 located in Andy Holt Tower is used exclusively for administrative work. Data entry services are provided with two Nixdorf 600/55 key-to-disk systems also located in Andy Holt Tower. In addition, UTCC maintains eight remote job entry stations for batch work and eleven sites for interactive computing services to the other campuses in the UT System through remote job entry facilities.

The IBM 3031's operate under MVS/SP with JES 2, the IBM 4341 operates under VM/SP, and the IBM 360/40 operates under DOS with POEVER II. The DECsystem-10 operates under TOPS-10 with Galaxy. Time sharing features on the IBM computers include Coursewriter III and VM/CMS, with FORTRAN, PL/I, COBOL, and SAS/GRAPH. Time sharing features on the IBM computers include Coursewriter III and VM/CMS, with FORTRAN, PL/I, COBOL, and SAS/GRAPH. The DECsystem-10 time sharing system provides APL, FORTRAN, BASIC, COBOL, MACRO, and other special purpose application programs, including extensive graphics software support. Each IBM 3031 has six million bytes of memory, the IBM 4341/s has eight million bytes of memory, and the DECsystem-10 has 1.25 million words of memory.

A graphics center with ten Tektronix graphics terminals, five storage and five refresh, two digitizing tablets, and a graphics plotter is located in Ferris Hall. Additional graphics equipment, including three terminals, a large digitizing tablet, and a plotter, is located in the user work area in the Art and Architecture Building. A Calcomp 1051 plotter is used to produce graphics output from jobs run on both IBM and DECsystem-10 computers.

UTCC publishes the User's Guide, which describes the use of the IBM computers, and the DECsystem-10 User's Guide, which describes the use of the DECsystem-10. Both guides are available at the UT Book & Supply Store. A monthly Newsletter announces systems, equipment, and procedural changes and contains other items of interest to users. Program write-ups and special user's guides are also available.

UTCC periodically offers intensive training seminars on the utilization of the IBM and DECsystem-10 computers for faculty, staff and graduate students. UTCC also offers non-credit short courses each quarter in topics such as programming languages and special purpose programs. These courses are announced in the UTCC Newsletter the Campus Capsule section of the UT Daily Beacon, and this week on campus, a publication announcing campus events.

Computing services may be requested via the request for services form available from the receptionist, 200 Stokely Management Center. All users of UTCC facilities are assigned a consultant to provide user assistance.
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